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AllinaHealth 

ADVANCING
OPPORTUNITY
FOR FUTURE GENERATIONS

2023 Allina Health Research Report

Table of Contents

03	Welcome
04	Patient Story
06	Research Advisory Council
07	Highlights Summary
08	Structural Alignment
09	Research Highlights
19	Affiliate Highlights
22	Support Services
24	Strategic Success
25	Colleagues, Community, Culture
28	Research Publications
33	Contact Us



Allina Health is accredited by the Association for the Accreditation of Human Research Protection Programs, Inc.





Colleagues and partners,
Welcome to the 2023 Allina Health Research Annual Report!

At Allina Health, we are committed to innovative research that advances health outcomes, transforms patient lives, and promotes population health in the communities we serve. Our research teams work to advance medical research, disseminate critical information, and refine models of health care delivery.



Medical research is an integral piece in our complex care mission. With more than 28,000 employees, 6,000 associated and employed physicians, 11 hospitals, over 90 clinics and pharmacies, laboratories, a well-known emergency medical system, and access to an integrated electronic health record system, Allina Health is uniquely positioned to be a regional research hub that advances the future of medicine through evidence-based research.

Allina Health Research (AHR) is integrated with Allina's clinical practices, extends across a variety of specialty areas, and is distinguished by its broad scope, volume of clinical trials, population-based research, data and analytics, and diagnostic studies. AHR is structured into a core administrative group that broadly supports all research areas and serves as the backbone to facilitate research operations which are coalesced into four distinct units – neuroscience, rehabilitation, cancer, and care delivery & outcomes/ population health.

Our innovative research partnerships at local and national levels allow us to build upon the exceptional work of our research teams and provides access to potential life-saving therapeutics not otherwise available. For our providers and scientists, our research provides opportunities to advance care for future generations. Our collaborative research efforts are supported in part by philanthropic donations, internal and external grants, government support, and industry sponsors.

What we learn through research impacts how we care for our patients, the treatments we use, and the way our patients live their day-to-day lives. As comprehensive care expands at Allina Health, so too does our commitment to enhancing and expanding our patient-centered research programs. Our nimble and robust research infrastructure continues to serve our community well as we aim to advance complex research questions.

On behalf of the Research team, I invite you to learn more about Allina Health Research through this report on our successes in 2023. Also, do visit us online at allinahealth.org for more up-to-date information on the exciting work in progress at Allina Health Research.

Badrinath Konety, MD, MBA
Chief Academic Officer, Allina Health
President, Allina Health Cancer Institute

Patient Story

by Dean Boris, in his own words

I am just an ordinary man with a brain tumor.

I was born in central Wisconsin and moved to Minnesota in 1987. I worked as a Regional Purchasing Specialist for the East Coast. I love the outdoors, pontooning, deer hunting, and spending time at my sister and brother-in-law's lake cabin in Wisconsin.



In March 2021 while spending time with my family at the cabin, I experienced my first seizures. They rushed me to a local hospital where I was only able to have a CT scan and for the next five months everyone thought I had a stroke. The most important thing is the diagnosis, and mine was wrong. After the seizure, I was told my imaging didn't seem to show much, but I continued to experience symptoms and had several follow-up scans. There were terrible headaches, constant fatigue, and sleepiness. Memory, speaking, walking, and math were all challenging. My days were full of physical, occupational, and speech therapy all trying to help so I could get back to my life.

By July 2021 the imaging was concerning for an aggressive lesion, and a week later I was in surgery with Dr. Nagib [a neurosurgeon at Abbott Northwestern]. Everything at this point moved fast, it was a whirlwind. I was diagnosed with a Glioblastoma, being treated by Dr. Trusheim, the same Neuro-Oncologist who had treated my brother, David, when he was diagnosed with a brain tumor 22 years prior. There were clinical trials to consider, visits with radiation oncology, neurosurgery, primary care, and labs. There was so much going on, I needed to surround myself with the right people to help me decide the next step and roll with it.

I chose to participate in the TRIDENT clinical trial taking chemotherapy while wearing the Optune device which has sticky bandages that are worn all over the head and sends electromagnetic pulses into the brain to help kill the tumor. Using Optune was just an adjustment, a different way of living and I had to accept it. I wore it for more than two years, day and night, and lived my life.

Trying to get comfortable and learning to sleep with the arrays and wires along with a CPAP was hard. But I did it. My wife, Chris, did most of the array changes which varied in the summer from almost every day when the gel was melting from the heat and humidity to every few days in winter when it gently warmed my head. My friends and family were trained on the device, too, so I could continue my treatment everywhere, even while hunting. It can be easy to focus on the negatives, but I am still here and every day I wake up is a GREAT day.

Photo: Dean (center) with grandchildren Zaiden and Zoella, wife Chris and son-in-law Zach (left), and daughter Kasey and son Zach (right)

Patient Story

by Dean Boris (Continued)

The tumor was stable until December 2023, when it grew back. In an instant, it was time to make treatment plans all over again, this time with Dr. Wasilewski [a neuro-oncologist at Abbott Northwestern]. Enrolling in a second clinical trial provoked anxiety about the future and required changing everything. Stopping the Optune device was difficult, as it had become a safety net. To qualify for the trial and start treatment as quickly as possible, I had to be at Abbott Northwestern five days in a row for visits, labs, and tests. But once I started, it was easy - just a pill twice per day and another pill every 6 weeks.

The providers, specialists, research team, and device support are all phenomenal. Fight the fight, and don't ever give up no matter how the odds look. I just want to be around longer, be with my family, and see my grandchildren grow up. My family is extremely important to me, my wife Chris, my children Kasey and Zach, and my grandchildren Zoella and Zaiden. Now is the time that I have to hug longer, love deeper, and mend family and friend ties so I can live a fantabulous life and leave no regrets behind.

The tumor prognosis is a wake-up call to do everything I have always put off doing later in life. I want to tell people not

to be afraid of the studies because they can only help the rest of us. There are new medications and treatments coming out every day. There is nothing to lose and if participating in research can prolong your or someone else's life, **you should do it!**



Photo: Dean is wearing the Optune Gio device while on a hunting trip with his friend Bill.

Research Advisory Council

The Allina Health Research Advisory Council (RAC) is a cross-functional, multi-disciplinary body of Allina Health research administrators and senior leadership, research professionals, and provider researchers. It advises the Chief Academic Officer on matters related to the implementation of medical research in accordance with Allina Health's vision, mission, and strategic goals. RAC members include research dyads matching research directors or managers to clinical directors for each service line. The dyad teams provide accountability and a reporting structure which facilitates informed decision-making.

Research Innovations Awards Grant Program

In partnership with the Allina Health Foundation, the RAC is also responsible for overseeing the programmatic, scientific, and financial management of philanthropic dollars designated for research efforts. This is managed primarily through the Research Innovation Awards (RIA) grant program. The RAC accepts proposals during two grant cycles yearly and seeks qualified reviewers to inform a rotating subcommittee in funding decisions. In its inaugural year, the program completed one granting cycle in 2023 and awarded nearly \$150,000 among four research projects. RIA supports Allina Health's goals through hypothesis-driven and evidence-based competitive research grants aimed at:

- promoting health and healing
- initiating breakthrough scientific efforts
- promoting health equity and population health
- piloting projects to attract extramural funding
- evaluating practices for cost saving measures and efficiencies
- discovering and developing innovative approaches to patient care
- implementing studies supportive of our patient populations



Research Innovations Awards granted in Fall 2023

Cannabis Use During Cancer Therapy: Implementing Pharmacist Clinical Assessment for Drug Interactions.

PIs: Justine Preedit, PharmD and Summer Martins, PhD

Provider Communication in Rehabilitation Open Patient Encounter Notes (ReOPEN): Application to Neurorehabilitation for Traumatic Brain Injury.

PI: Katy O'Brien, PhD CC-SLP

Diabetes screening in early pregnancy: A comparison of methods.

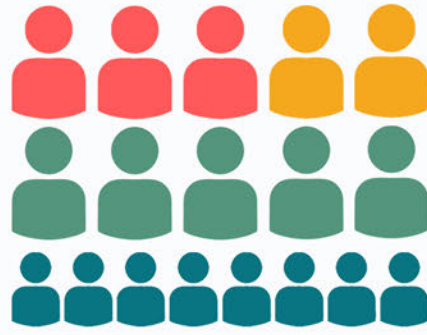
PIs: Laura Colicchia, MD, Abbey Sidebottom, PhD, and Patricia Harper, MD

Perspectives on living with purpose for Black and Non-Hispanic white breast cancer survivors: a qualitative thematic analysis.

PIs: Sharon Gowdy Wagener, OTD, OTR/L and Mary Radomski, PhD OTR/L

Allina Health Research Highlights*

3,258
active
enrollment



ACTIVE
GRANTS
96

TWO HUNDRED TEN
active studies

84 academic
abstracts
& presentations

REVENUE
\$5,005,000

A grid of 86 stylized human figures arranged in seven rows of twelve. The last figure in the seventh row is replaced by a teal square containing a white medical cross and a white horizontal bar with three lines below it.
86
publications

Media **63**
and other
presentations A teal square containing a white line graph with an upward-trending line.

* Does not include research partners (MHVI, MHIF, Twin Cities Spine)

Research Structural Alignment

Allina Health understands that research is an essential component of its mission to serve our communities by providing exceptional care, as we prevent illness, restore health and provide comfort to all who entrust us with their care. This institutional support helps provide the infrastructure needed to advance system-wide research in partnership with our clinical service lines, institutes, and extramural partners. Our research portfolio is robust. It includes investigator-initiated studies (grant-funded and unfunded), as well as studies sponsored through government, academic, and industry initiatives. The following graphic represents the structural depiction of our research areas and partnerships.



Research in Action



55
Active
Studies



344
Research
Participants



23
Peer-reviewed
Manuscripts



\$1,154,600
in Revenue

Research Highlights Cancer

Allina Health Cancer Institute (AHCI) conducts high quality, cutting edge clinical trials for patients with or at risk for cancer. Clinical research is an integral piece in our mission to improve the well-being of those we serve. We offer our patients the opportunity to participate in promising new treatments within their own hospital or clinic setting. Innovative partnerships allow us to build upon the exceptional work of our research team. Our multi-center investigators contribute to the advancement of oncology care through advancing treatment, public forums and interviews, presentations at scientific conferences, and publications of our study results in professional journals

AHCI employs a multi-center approach that brings diagnostic and therapeutic trials to Abbott Northwestern Campus in Minneapolis, United Campus in St. Paul, Mercy Campus in Coon Rapids, West Health in Plymouth and AHCI Clinic in Cambridge.

Key Accomplishments

AHCI Research opened 11 new clinical trials under the purview of AHCI Scientific Protocol Review & Management Committee and in alignment with the clinical service line.

AHCI Research onboarded six new physician investigators, and expanded therapeutic trials to AHCI West Health and diagnostic trials to the AHCI Clinic in Cambridge.

AHCI Research joined the ACCRU Network, a cancer research network of clinicians and researchers from more than 135 leading academic medical centers and community oncology practices in the United States and internationally.

Research Highlights

Infectious Disease

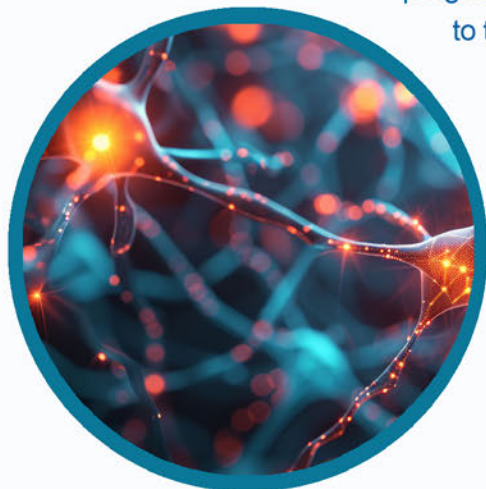
Through interdisciplinary collaboration with other departments and organizations, our Infectious Disease (ID) research efforts explored new possibilities for the treatment and prevention of COVID-19, Lyme disease, influenza, septicemia, Respiratory Syncytial Virus (RSV), Human Immunodeficiency Virus (HIV) and Hepatitis B and C. Our efforts supported better ID management in the USA and abroad. We will focus on research initiatives other than ID research after 2023.

Key Accomplishments

In 2023, ID research concluded the large international ENSEMBLE trial of the Johnson & Johnson COVID-19 vaccine, in which Allina Health was the sole local site retaining more than 200 study participants for the two-year follow-up period.

ID research also concluded the National Institutes of Health (NIH) sponsored “Randomized Trial to Prevent Vascular Events in HIV (REPRIEVE)”, the first large-scale randomized clinical trial to test a strategy for preventing heart disease among people living with HIV. Study results showed that Pitavastatin was effective at lowering the rate of heart disease events for people with HIV at low-to-moderate traditional risk for heart disease.

ID research participated in the Center for Disease Control and Prevention (CDC) expanded access Investigational New Drug (IND) program for Tecovirimat in response to the 2022 Mpox outbreak in the USA. This program made it possible for Allina Health providers to prescribe Tecovirimat to patients with Mpox.



Research in Action



2
Active
Studies



65
Research
Participants



2
Peer-reviewed
Manuscripts



\$375,682
in Revenue

Research in Action



23
Active
Studies



1,198
Research
Participants



13
Peer-reviewed
Manuscripts



\$538,821
in Revenue

Research Highlights Rehabilitation

Courage Kenny Research Center (CKRC) provides groundbreaking research and advocacy for children and adults who have experienced injury or have disabilities. The high-quality studies conducted by our experienced researchers create genuine progress for rehabilitation for brain injury, spinal cord injury, cancer and more. Through research and innovation, we support Allina's goal of meeting the changing needs of people in the community who are living with acute or chronic disability through rehabilitation research that optimizes rehabilitation outcomes and full societal participation.

Key Accomplishments

Rehabilitation research continued to expand its reach, enrolling 1,198 participants in trials that addressed diverse needs of our patient populations, including dual-task motor function in patients with mild traumatic brain injury, purpose in life renewal for adults with persistent symptoms after concussion, fibrosis and peripheral neuropathy following cancer treatment, along with personalized memory treatment and examination of reading changes after traumatic brain injury. Investigators shared results of studies in 13 manuscripts as well as conferences in Chicago, Atlanta, San Diego, and internationally in Ireland.

CKRC continued to lead enrollment across sites as a member of the MN Spinal Cord Injury Model System (MNSCIMS), a multi-center research program funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).

Rehabilitation recruited a second cohort of research therapists, including Natalie Becker, MS, CCC-SLP and Carolyn Holm, PT, DPT. The program offers clinical rehabilitation therapists the opportunity to learn more about rehabilitation research and support ongoing research projects at CKRC.

Research Highlights

Orthopedics

The Allina Health Orthopedics research efforts focus on translational research in orthopedics and sports medicine. Through research and passionate involvement in the orthopedic community, our investigators have made great strides improving the treatment and health of our patients. Our efforts are made possible through dedicated research and patient-driven health. We are always eager to advance the possibilities within the orthopedic and sports medicine communities.

Key Accomplishments

Orthopedics research collaborated with research contracts to establish necessary agreements to provide continuity for two post-market clinical follow-up studies and an Investigational Device Exemption (IDE) trial to end-of-study, which will ensure that Allina Health provides meaningful data to the study outcomes and contributes to advancing the knowledge of shoulder implants.

Orthopedics research staff continued partnering with research houses across the system including nursing, rehabilitation, and mental health & addiction to provide support to a broad range of projects.

Orthopedics research sustained several projects currently in data collection, analysis and composition. Additionally, Orthopedics research was selected for funding by the federally supported Patient-Centered Outcomes Research Institute (PCORI) to collaborate with the University of Alabama-Birmingham on a new project studying fragility fractures. The team is planning for start-up and project continuation through 2024.



Research in Action



12
Active
Studies



178
Research
Participants



7
Peer-reviewed
Manuscripts



\$17,744
in Revenue

Research in Action



49
Active
Studies



5
Research
Participants



19*
Peer-reviewed
Manuscripts



\$187,061
in Revenue

Research Highlights Care Delivery

Allina Health Care Delivery Research (CDR) advances practice-based research through partnerships with clinical service lines and provider teams across Allina Health. We create, design, evaluate, implement, and disseminate research focused on improving care delivery. Efforts supported under the CDR banner include Mother Baby, Critical Care, Hospitalist, Medical Education, Emergency Medicine, Emergency Medical Services, Nursing, and Population Health Research. We also provide leadership for Allina Health's participation in the Greater Plains Collaborative Network and the MN Electronic Health Records Consortium.

Key Accomplishments

Mother Baby

Mother Baby providers and CDR research staff partnered with several health systems across MN to impact the care of mothers and babies. Projects included examination of prophylactic Vitamin K refusal by families of newborns, examination of how donor milk may affect the accuracy of testing for congenital cytomegalovirus (CMV) in newborns using saliva, and managing postpartum hemorrhage, and racial disparities in health outcomes, with a focus on prenatal and postpartum depression.

Critical Care, Hospitalist, Medical Education

As a members of the national Pulmonary Embolism Response Teams (PERT) Consortium Clinical Protocols Committee, Allina Health critical care providers contributed to a study exploring barriers and facilitators to interhospital transfer of patients with acute life-threatening pulmonary embolism, the 3rd leading cause of cardiovascular death. The team also led a study comparing treatments for pulmonary embolism in partnership with Mayo Clinic which received the Star Research Award by the Society of Critical Care Medicine's Critical Care Congress.

* one peer-reviewed manuscript co-authored by Nursing

Research Highlights

Care Delivery

Key Accomplishments (Continued)

Emergency Medical Services (EMS)

A key topic of focus for the EMS research team in 2023 was ambulance safety. Investigators conducted a novel, retrospective analysis of Allina ambulance crashes that occurred during a 3-year period and examined the association with EMS driver characteristics and a telematics-measured safe driving score. Findings were published in *Prehospital Emergency Care* and supported implementation of several new safe driving initiatives.

Emergency Medicine

In partnership with Emergency Care Consultants, the team continued implementation of studies examining potential racial disparities in care. The team had two publications in the *Journal of Racial and Ethnic Health Disparities*. The team also presented at the American College of Emergency Physicians Research Forum regarding a study examining potential stigmatizing language in emergency medicine notes.

Minnesota Electronic Health Record Consortium (MNEHRC)

Allina Health continued its collaboration with the MNEHRC, which in 2023 significantly expanded its scope beyond COVID-19 to include several chronic and mental health conditions. Through MNEHRC, Allina Health also began work on a \$17.5 million CDC grant to enhance responsiveness to future pandemics.

Population Health

The study, *Elevated Care at Home: An alternative to traditional levels of care during the COVID-19 pandemic*, describes patient demographic and clinical characteristics, and clinical outcomes of patients transitioned to Elevated Care at Home compared to patients transitioned to skilled nursing facilities and skilled home health care services. The study found similar or improved outcomes for those enrolled in the program. The study was presented at the American Geriatrics Society Annual Conference, in a Hospital at Home User Group Webinar, and in a presentation at the Hospital at Home Leadership Summit.

Research in Action



12
Academic
Presentations
or Abstracts



18
Media
Presentations

Research in Action



43
Active
Studies



117
Research
Participants



12
Peer-reviewed
Manuscripts



\$543,317
in Revenue

Research Highlights Neuroscience

Research, patient care, and education are pivotal components of Allina Health's Neuroscience, Spine, and Pain Institute (AHNSPI). Our provider investigators specialize in a wide range of clinical areas including neuro-oncology, neuropathology, neuroradiology, neurophysiology, and stroke neurology. We continually strive to apply the discoveries made from our research projects toward improvements in patient care. We bring what we learn from patients back to the research team to enhance our understanding of neuroscience. This bench-to-bedside approach allows us to move discoveries more quickly into the patient care setting while helping researchers refine therapies and techniques based on clinical observations.

Key Accomplishments

Inauguration of the Allina Health Neuroscience, Spine, and Pain Institute, of which research is an integral part. The AHNSPI Scientific Protocol Management and Review Committee reviewed their first set of clinical trials, ensuring the research aligns with the broader Neuroscience Clinical Service Line.

AHNSPI opened eight new clinical trials within the Institute. We are the top enrolling site in two of these national studies. An additional eight trials are in start-up phases.

AHNSPI enrolled the first research patient at Mercy Hospital in 2023, growing the reach of Neuroscience Research. There are now three clinical trials open to patients at Mercy Hospital, with three patients enrolled.

The research team also submitted their first AHNSPI grant application in the dementia space.

Research Highlights

Mental Health & Addiction Services

Our Mental Health and Addiction Services (MHAS) research team works closely with care providers to bring innovative treatment tools and advanced models of care to our providers and patients. Our objective supports Allina Health's goal of providing whole person care for our patients, families, staff, and the communities we serve. Our efforts address a critical health need in our society. Half of all Americans will experience a mental health condition during their lifetime, and about 20 million Americans experience an addiction every year. In addition, about a third of those with a substance use disorder also have a mental health condition.

Key Accomplishments

In collaboration with the Allina Health Center for Provider Wellbeing, MHAS was awarded \$100,000 by Minnesota Department of Health for a groundbreaking randomized controlled trial comparing different models of peer support on healthcare provider wellbeing.

MHAS completed two research projects funded by State Opioid Response grants evaluating novel treatment models: teleaddiction treatment programs and a digital support platform.

A grant application was submitted for a randomized controlled trial in the neuromodulation space. The MHAS team looks forward to working with a new investigator as we explore this new area of mental health research.



Research in Action



5
Active
Studies



1,344
Research
Participants



7
Active
Grants



\$603,897
in Revenue

Research in Action



21
Active
Studies



7
Research
Participants



9*
Peer-reviewed
Manuscripts



18
Academic
Presentations
or Abstracts

Research Highlights Nursing

Nursing research worked to support the delivery of patient care at Allina Health through clinical inquiry, and the integration of new discoveries into clinical practice. Our investigator-initiated nursing research targeted clinical phenomenon that influenced patient safety, nursing satisfaction, and quality of life. By exploring and addressing issues, nursing research was able to provide a unique contribution to the discovery and integration of advances in patient care.

Key Accomplishments

Dr. Stephanie Edmonds joined Abbott Northwestern Hospital as Principal Research Scientist/Nurse Scientist, filling behind Dr. Ruth Bryant, who retired in March.

Allina Health signed its first Nursing Collaboratory with the University of Minnesota School of Nursing, recognized by the American Association of Colleges of Nursing (AACN) as a commitment between academic and clinical organizations to collaborate on mutually defined goals.

* one peer-reviewed manuscript co-authored by Care Delivery

Research Highlights

Pharmacy

Pharmacy research strives to ensure optimal medication use in both inpatient and outpatient care settings. This involves evaluating the appropriateness and safety of drug therapy, as well as considering interventions to improve medication-related outcomes. Pharmacy research strives to identify and address the needs and preferences of patients, caregivers, and health care providers regarding medication use. These efforts often encompass collaboration with other healthcare disciplines and can inform policy and practice guidelines, while supporting the adoption of new drugs and technologies.

Key Accomplishments

Pharmacy had a vital role in supporting clinical trials, which are essential for advancing medical knowledge and improving patient care. In 2023, Pharmacy contributed to the evaluation of clinical trials, lead Beacon builds, and assisted with the implementation of Allina Health clinical trials.

Pharmacy received grant funding to support challenging penicillin allergies, removing inaccurate allergies from patient charts, and optimizing perioperative, antimicrobial medication use as a result.

In 2023, Pharmacy received Allina Health Research Innovations Award to explore use of cannabis in concert with cancer therapy.



Research in Action



6
Active
Studies



1
Peer-reviewed
Manuscript



2
Active Grants

Research in Action



12
Active
Studies



5
Research
Participants



1
Peer-reviewed
Manuscript

Research Affiliate Highlights Cardiology (MHVI)

The clinical research program at the Metropolitan Heart and Vascular Institute (MHVI) has a strong partnership with academic and industry leaders to make lasting contributions to cardiovascular care and medicine. Our involvement with research studies helps answer important questions about treatment and to bring the latest in cutting edge cardiovascular therapy and prevention to our patients. MHVI's participation in research provides renal denervation as an option to manage high blood pressure and to find the best treatment strategy for heart failure patients undergoing high risk percutaneous coronary interventions. Our research program helps further our dedication to strive for excellence in our communities and deliver high quality patient centered care.

Key Accomplishments

Participated in the Medtronic SPYRAL AFFIRM trial offered Renal Denervation as a 1-time procedure to help manage hypertension to patients in the Twin Cities Metropolitan area. Additionally, Medtronic Symplicity Spyral Renal Denervation system received FDA approval in November 2023.

The ECLIPSE trial met its enrollment goal of 2000 subjects in April 2023. MHVI contributed towards those last remaining enrollments and finished as the 14th top enrolling site nationally. Our participation will help with treatment strategies for calcified coronary artery disease.

In-Stent Restenosis with multiple layers of stents has very limited treatment options. Our clinical research program obtained FDA and Boston Science approval to use the Compassionate Use Device AGENT drug coated balloon for one of our patients that had no other treatment option. The procedure was a success and the participant has done well since the procedure.

Research Affiliate Highlights Cardiology (MHIF)

Allina Health Minneapolis Heart Institute and the Minneapolis Heart Institute Foundation® (MHIF) have delivered lifesaving cardiovascular research and education for more than 40 years. Through a strong partnership with Allina Health Minneapolis Heart Institute physicians, MHIF conducts research of new drugs, technologies, and procedures, providing hope to patients and families around the world and across all areas of cardiovascular care and medicine.

Key Accomplishments

Dr. Paul Sorajja presented primary outcomes from the TRILUMINATE™ Pivotal clinical trial showing the TriClip™ met its composite primary endpoint as a first-of-its kind, non-surgical option for debilitating tricuspid valve regurgitation at the American College of Cardiology's 72nd Annual Scientific Session together with World Heart Federation's World Congress. MHIF was the first to provide this technology to a patient as part of early research in 2017. The data was also simultaneously published in the New England Journal of Medicine.

MHIF contributed to research that earned approval of a new treatment for patients living with hypertension. ReCor Medical's Paradise™ Ultrasound Renal Denervation is a first-of-its-kind ultrasound designed to lower blood pressure by denervating overactive sympathetic nerves surrounding the renal arteries.

MHIF's reach and commitment to excellence are evident, with AHMHI/MHIF researchers contributing to 82 unique journals in 2023. More than 30% of the manuscripts were featured in the family of these prestigious journals: Circulation, European Heart Journal, Journal of the American College of Cardiology, Journal of the American Medical Association, and The New England Journal of Medicine; 25 appeared in those respective parent journals. See our 2023 list of publications at www.mplsheart.org/2023publications.

Research in Action



267
Peer-reviewed
Manuscripts



94
Academic
Presentations
or Abstracts



245
Media
Presentations

Research in Action



25
Active
Studies



10
Peer-reviewed
Manuscripts



10
Academic
Presentations
or Abstracts



29
Media
Presentations

Research Affiliate Highlights Twin Cities Spine

Twin Cities Spine's mission is to be an international leader in spine surgery by providing optimal patient care, publishing research that advances clinical practice, providing a leading U.S. training program, and making lasting contributions to the field of spine surgery. We invest time and resources to conduct research and education so that we continue to grow in knowledge and skill. In 2023, we continued several research studies and initiated new ones that span a wide breadth of topics, including operative and non-operative treatments.

Key Accomplishments

In May 2023, Twin Cities Spine hosted the annual John H. Moe Visiting Professor Symposium.

The John H. Moe Fellowship graduated four Fellows in July of 2023 and four new Fellows started their training in our program in August.

Our clinical conferences, didactic lectures, monthly journal clubs, and cadaver laboratories remained successful teaching venues for the Fellows and others to learn more about our patients and how we care for them.

Twin Cities Spine's clinical outcomes research database, nPACS system of radiographic data, and data gathered in collaboration with Allina Health were used in 18 retrospective research studies.

Twin Cities Spine was also involved in spine society-based research, utilizing those data bases in collaboration with other spine centers.

Allina Health Research Support Services

Research Administration and Operations Support Services help researchers navigate the complex processes related to research implementation. Allina Health's Research support services include the Office of Sponsored Programs, Research Billing, Research Contracts, Research Finance, Research Grants, Research Integrity, and Clinical Research Informatics & Analytics.

Research Billing manages the billing compliance and research pricing review process for clinical services associated with research studies. Ensuring billing compliance has important legal and regulatory implications and ensures our research patients do not receive inaccurate billing.

Research Contracts provides support in reviewing, editing, negotiating, and finalizing all research related contracts and agreements while ensuring agreement compliance with government regulations and Allina Health contracting guidance.

Research Finance provides expert financial oversight for research projects, from pre-award to close-out. The team provides a range of services, including budget development and negotiations, financial analysis, invoice and payment reconciliation, expenditure and revenue management, while ensuring all billing and grant rules and regulations are adhered to.

Research Grants provides expert administrative support to all researchers, pre-award to close-out. The team provides services such as identifying potential grant sources, proposal preparation, management of budgets and timelines, and reporting on the outcomes of the funded research to government agencies.

Research Integrity is comprised of the Human Research Protection Program, Institutional Review Board (IRB), and Research Compliance and Conflict of Interest Programs. In partnership with the research community, these teams work to protect and respect the rights and welfare of subjects involved in human research involving Allina Health's employees, facilities, patients, and data.

Clinical Research Informatics & Analytics applies the science of information management to enable the effective and efficient execution of clinical research, including clinical trials, observational studies, and outcomes research.

Allina Health Research Support Services

Research
Contracts

236

Agreements Reviewed

60

Clinical Trial Agreements

Research
Billing

107

New Studies Reviewed

5,341

Patient Visits Linked in Excellian

688

Total Unique Patients

\$1.03M

to AH Facilities for Research Services

Research
Grants & Finance

0

Findings in Single Audit

\$5M

In Revenue

18

New Industry Awards

24

New Grants (Foundation, Federal, State)

11

Non-Research System-Wide Awards Supported

Clinical Research
Informatics &
Analytics

93

Managed/Supported Projects

\$440K

Research Revenue

Institutional
Review Board

685

Internal Submissions Reviewed

778

External IRB Submissions Processed

2

Expedited

Median Turnaround Days from Complete Submission to Review

8

Convened Board

21

Expedited

Median Turnaround Days from Complete Submission to Approval

58

Convened Board

9

Days from Submission to Exemption Determination

Research
Compliance

17

Site Visits, 49 Consults

27

IRB Internal Reviews

Research Conflict
of Interest (COI)

743

COI Disclosures Submitted

149

Individuals with Positive Disclosures

68

COI Management Plans Executed

Allina Health Research Strategic Success

QUALITY & EXPERIENCE

We aligned Allina Health Research (AHR) efforts with Allina Health's strategic initiatives applicable to Research. Namely, Allina Health institutes and population health.

PEOPLE

We partnered with Mental Health & Addiction Services (MHAS) to enhance Allina Health research efforts in response to increased need in the communities we serve.

STEWARDSHIP

We strengthened our valued partnership with the Allina Health Foundation through the development of scientific and programmatic review. This process facilitated the prioritization of biannual AH research innovations award funding.

SAFETY & ACCREDITATION

We earned the Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP) accreditation gold seal, demonstrating our research standards exceed the safeguards required by the international guidelines and laws governing research involving human subjects.

GROWTH & VALUE DELIVERY

We expanded Cancer research activities to include AHCI West Health (Plymouth) and Cambridge locations. We expanded Neuroscience research activities to the Mercy campus.

Allina Health Research Network Participation

AHR is supported externally by several respected research networks. A research network is a group of researchers who collaborate and communicate on a common topic or field of interest. The networks facilitate the exchange of ideas, data, resources, while also promoting the dissemination of data from the research outputs. Allina Health is currently a member of the following networks:

- Academic and Community Cancer Research United (ACCRU)
- The Greater Plains Collaborative in PCOR-Net, developed with funding from PCORI
- The Guardian Network
- Metro Minnesota Community Oncology Research Consortium (MMCORC)
- Minnesota Electronic Health Records Consortium (MNEHRC)
- National Institutes of Health StrokeNet

Allina Health Research

Colleagues, Community, Culture

WORKPLACE CULTURE IS A KEY FACTOR FOR THE SUCCESS AND WELL-BEING OF ALLINA HEALTH AND ITS EMPLOYEES. AT THE 2023 LEADER COLLABORATIVE, LEADERS LEARNED ABOUT FOSTERING A CULTURE OF TRUST, RESPECT, INCLUSION, AND EXCELLENCE DURING ACTIVITIES AND DISCUSSIONS. OUR RESEARCH TEAM EXEMPLIFIES THESE VALUES BY RECOGNIZING AND APPRECIATING THE CONTRIBUTIONS OF THEIR COLLEAGUES, PARTNERING TO VOLUNTEER IN OUR COMMUNITY, AND STRENGTHENING THEIR SKILLS IN HIGH RELIABILITY AND ALLYSHIP. BY DOING SO, THE TEAM CREATES AN ENVIRONMENT IN WHICH IT STRIVES TO ENSURE THAT EVERYONE FEELS VALUED, RESPECTED, AND APPRECIATED.



WHAT IS ORGANIZATIONAL CULTURE



- Collection of attitudes, beliefs, behaviors
- Aligned behaviors and company policies with overall goals
- Consider well-being of individuals

"Attitude, work-life balance, growth opportunities and job satisfaction all depend on the culture of your workplace."



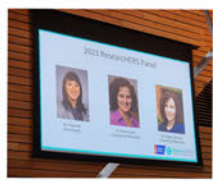
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ALLINA HEALTH'S PURPOSE

TO PROMOTE FLOURISHING OF HUMANKIND



what makes us | US

RECOGNITION & APPRECIATION

Evident in our rituals, stories, lore, and our aspirations and practice day-to-day

PURPOSE & VALUES

Grounded in commitment to shared purpose, core values, mindsets, and behaviors

ACCOUNTABILITY & AUTONOMY

Visible in all relationships: colleagues, patients, and other stakeholders

COMMUNICATION & ENVIRONMENT

Actuated in an architecture of organizational practices and processes

EFFICIENT LEADERSHIP

Exemplified and amplified by the words and actions of leaders



More can be achieved when people work together, because every little bit that someone has to give matters.

STONE SOUP

Healing

Believe

Allina Health Research

Colleagues, Community, Culture

WHEN WE SHARE OUR STORIES, WE ARE REMINDED OF THE HUMANITY IN EACH OTHER. AND WHEN WE TAKE THE TIME TO UNDERSTAND EACH OTHER'S STORIES, WE BECOME MORE FORGIVING, MORE EMPATHETIC, AND MORE INCLUSIVE.

Michelle Obama

Part of company culture is path dependent.
It's the lessons you learn along the way.”
-Jeff Bezos

IT WAS A COLD AND SNOWY NIGHT... a collection of shorts

Allina Health Research

It was a cold and snowy night, and I was stuck in my yellow car. I tried not to panic. Ultimately, I made the decision to get out of the car and start walking. My coat was warm, and the sky was bright. As I was walking through the knee high snow, I felt the familiar click of the door lock behind me. And because it was an ancient yellow car, I could not get the keys that are locked in the car. After walking for a few miles, I spotted an old house. Cold and wet, I think I see a light in the upper window. While drudging through snow, I came to the enormous draw bridge, and approached and used the knocker to alert those inside. A Lurch-like person answered the door. I had to look way up to meet his eyes. After we stared at each other for what seemed like forever, he finally invited me inside. I'm silently led by Learch to a gigantic room. The lights go on, and hear a collection. SURPRISE!!

Carmi Anderson, Jonathan Alexander, Deena Bartley, Kyle Francis

It was a cold and snowy night. The heat stopped working in our house, so we had to start a fire. We went outside to gather logs and timber. At that moment, we heard the howling, piercing silence. The moon was bright, but the woods were dark, the trees heavy with snow. We froze, searching for any movement in the shadows. When suddenly, our worst fears were confirmed... "give me all your study files!" It was the FDA.

Nimco Essa, Mike Fulcher, Lauryn Moquist, Katy O'Brien, Christine Roering

It was a cold and snowy night, but I was inside by the fire enjoying my favorite book for the fifth time. My dog jumped when she heard a knock at the door: I got up from the couch to answer the door, when I opened the door, I was shocked to see Santa Claus in his bright red suit. I asked what he was doing here? His response was, "I need you to guide my sleigh tonight. Will you join me?" I said, I am glad to guide your sleigh, I know a kid who is sick, and I know your arriving will cheer him up! Let's go!

Sophie Hanks, Marie Meyers, Sarah Sadler, Hong Zhong

It was a cold and snowy night, and I left my mittens at home. The presents are under the tree and the kids are ready for Christmas. We haven't told them yet, but we are going to the airport. We are going somewhere warm. On our way we saw a yellow car, and it reminded me we are thankful for chat so that we can finish this story.

Jordyn Hood, Katie Johnson, Gayle Kusch, John Nelson, Jaber Salem



IT WAS A COLD AND SNOWY NIGHT... a collection of shorts

Allina Health Research

It was a cold and snowy night, when I heard an eerie screech coming from the deepest recesses of the dark woods. At first, I thought it was a bird, but of course it wasn't a bird. It was several dozen birds, all of which hated me because I forgot to leave out their daily food. Once I stepped outside to place their food in the birdfeeder, they all cried in unison, "RUN!" I looked around my yard and found a rusty red Radio Flyer wagon slowly making it across the open yard. I quickly hopped aboard happy that I made that deal with the genie to rescue me at my darkest hour.

Payton Kaiser, Jen Murwin, Ned Tervola

It was a cold and snowy night, and I was driving on a windy road home from dinner. Suddenly, a racoon ran into the road. I slammed on my brakes and hit a patch of black ice. The car spun and spun until I was dizzy. The racoon and her babies ran off to the ditch to see if I was okay! I called roadside assistance, and they wouldn't be able to be there for two hours. The racoons called their roadside assistance, and they were able to assist quickly.

Kristina Kath, Sirri-Aline Sutphen, Online Group

It was a cold and snowy night, I was in my car, headed home after a long day at work. Thankfully, my car was warm. Suddenly, my car stopped. I ran out of gas! Fortunately, there was a house nearby. The house had a fire crackling inside. When I knocked on the door, I was greeted with a plate of cookies and Jingle Bells playing in the background. It turns out that I am Santa Claus. As I slowly but surely woke up from my nap, I was thankful to be in a hammock by the Caribbean Sea.

Megan Hinrichsen, Victor Melendez, Shannon Mills, Jennie Schletty, Whitney Wunderlich

EVERY ORGANIZATION HAS HIDDEN INFLUENCERS
be grateful to yourself
Share your stories
Start a gratitude journal
Use thrice dollars
Look for yellow cars
(reasons to be grateful)



be grateful for others
Celebrate milestones
Send a Care on the Spot
Share team successes with leaders
Assume best intent



Allina Health Research Publications

The publications in the list below were authored or co-authored by Allina Health Research team members

This list includes research papers published in peer-reviewed journals and catalogued in PubMed during the 2023 calendar year.

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