

2024 ANNUAL REPORT

# Allina Health Research

Advancing patient care through scientific innovation





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## Welcome to the 2024 Allina Health Research Annual Report!



Allina Health is committed to innovative research that improves the lives of our patients, promotes population health in the communities we serve, and advances health outcomes globally. Allina Health researchers and operations staff work vigorously to advance research that improves patient outcomes, refines models of health care, and applies cutting-edge innovations.

Medical research is a fundamental component of our complex care mission. With more than 28,000 direct and indirect employees, 6,000 associated and employed physicians, 11 hospitals, 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 practice.

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 distinct components – cancer, cardiovascular, neuroscience & mental health, rehabilitation and orthopedics, care delivery and outcomes/population health.

Innovative research partnerships at the 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.

AHR is proud to have been involved in several groundbreaking studies and clinical trials that have resulted in practice changing findings. We have conducted phase 1 through phase 3 and 4 clinical trials. We are key collaborators for the University of Minnesota and HealthPartners and are part of several multi state consortia.

Our nimble and robust research infrastructure with a high functioning internal institutional review board allows us to respond rapidly and launch studies in a short time frame. We are accredited by the AAHRPP and have a mature research infrastructure.

Our research efforts are supported in part by philanthropic donations, internal and external grants, government support, and industry sponsors. In 2024 we saw the highest levels of research funding over the past 5 years. Our research support has also expanded to cover United and Mercy hospital sites as well.

We anticipate that our research portfolio and activities will continue to grow in 2025 as we seek to enhance the research component of our distinctive clinical programs. Allina Health research will endeavor to be a key enabler of the Allina Health strategy.

On behalf of the dedicated Research team, I invite you to learn more about Allina Health Research through this report on our successes in 2024. Also, to visit us online at [allinahealth.org/research](https://allinahealth.org/research).

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

# Ona Williams

My name is Ona Williams. I was born and raised in the great state of Florida, in Tampa. When I was 23 years old, I moved to Minnesota where I have lived in several communities around St. Paul, and now Stillwater.

I have managed my life with several disabilities: autism, epilepsy, ADHD, and hearing impairment. Now, at age 48, I'm also managing my life after an ischemic stroke. The stroke happened on May 2, 2024, and was caused by a narrowing artery and plaque buildup on the left side of my brain.

Before the stroke, I had great strength and a lot of energy. Two of my passions are playing hockey in the Minnesota Wild Sled Hockey Program, and art. I work in various mediums: recyclables, abstracts, acrylics, pottery, and collage.

My stroke has affected my strength, so I have been working with an occupational therapist on strengthening the muscles on my right side, especially in my hand. I still enjoy making all varieties of art, so I've compensated by using other tools to make my art go smoother. My balance is a big concern, too, and I have falls from time to time.

After my stroke, I agreed to take part in a blind clinical research trial at Abbott Northwestern Hospital, Comparison of Anti-coagulation and anti-Platelet

Therapies for Intracranial Vascular Atherostenosis (CAPTIVA) through NIH StrokeNet, to better treatments for preventing stroke. I wanted to be in research to be able to help others and loved the idea of getting extra care from Dr. Asaithambi and the team.

I have had such a positive experience with my study team. They answer any questions I have, get my medications to me, and are great about checking up on my medication log. They are all-around positive people genuinely concerned about me!

During the first appointment I was put in one of three study groups. After that, I have neurologist appointments at 30 days, 4 months, 8 months, and 12 months. The study team manages stroke risk factors like blood pressure, cholesterol, or diabetes. During the trial I have a health coach through a lifestyle modification program called INTERVENT. The hope is that this study may lead to better treatments for preventing another stroke.

I would recommend others take the opportunity to participate in clinical trials because of the team of doctors that are supporting you and the good response from the pharmacy. Getting to work with a very experienced stroke doctor, Dr. Asaithambi, is a great benefit, and I like that I am potentially helping other people from having a stroke.

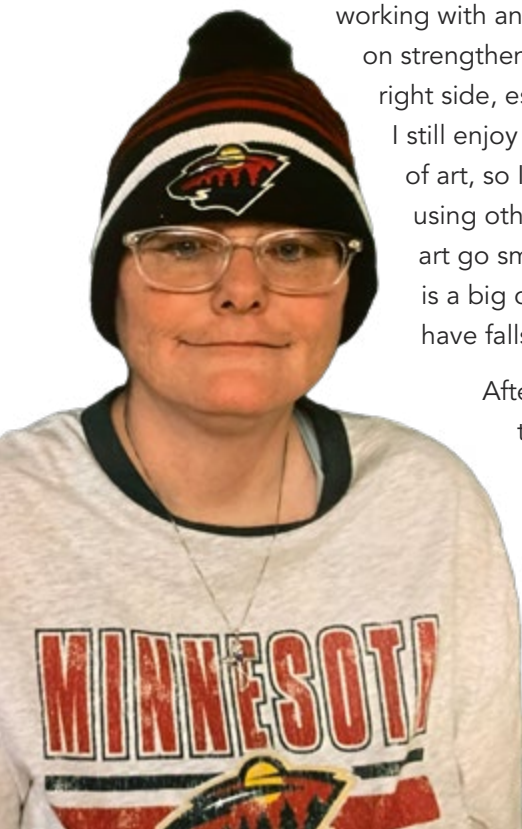
The most important things to me are my faith, and my health and wellness. I'm focused on changing my lifestyle to avoid having another stroke. I have had such a positive experience with my study at Allina Health.



## 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. The 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 structure of our research areas and partnerships.





# Research Advisory Council

The Allina Health Research Advisory Council (RAC) is a cross-functional, multi-disciplinary body of Allina Health Research administrators, senior leadership, research professionals, and clinician 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, managers or scientists to clinical directors for each service line. The dyad teams provide accountability and a reporting structure which facilitates informed decision making.

## Research Innovation Awards grant program

In partnership with 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. RIA supports Allina Health’s goals through hypothesis-driven and evidence-based competitive research grants. Proposals are accepted during two grant cycles yearly and engages quality reviewers to inform a rotating subcommittee in funding decisions.

In 2024, the program completed its first full year of granting during two granting cycles and has awarded nearly \$170,000 among seven research projects. Since the start of the program, just over \$315,000 has been awarded among 11 projects.

## Research Innovation Awards granted in 2024:

*Cognitive rehabilitation clinical practice patterns: an examination of Implementation using Normalization Process Theory (Cognitive INPuT).*

**Principal Investigator:** Katy H. O’Brien, PhD, CCC-SLP, Rehabilitation

*Cost-effectiveness of intravenous tenecteplase in ischemic stroke.*

**Principal Investigators:** Ganesh Asaithambi, MD, Neurology & Kangla Fang, PharmD, MHA, Pharmacy

*The Influence of orthopedic robots on patient outcomes, efficiency of healthcare delivery, market trends, and healthcare finances.*

**Principal Investigators:** Bishoy Gad, MD & Steven Ralles, MD, Orthopedics

*Evaluation of speech and voice biomarkers in physicians with burnout.*

**Principal Investigator:** Emmanouil Brilakis, MD, Cardiology

*Identifying the scope of weight bias among women’s health care clinicians to advance the understanding of how to discuss weight-related topics.*

**Principal Investigator:** Stephanie Edmonds, PhD, Nursing

*Systemic thrombolysis vs catheter-directed interventions for massive and submassive acute pulmonary embolism: a multicenter observational comparative effectiveness study.*

**Principal Investigators:** Roman Melamed, MD, & Dave Tierney, MD

*Serious illness conversations – an evaluation of a program to improve goal concordant care for patients near the end-of-life.*

**Principal Investigators:** Emily Downing, MD & Abbey Sidebottom, PhD, Care Delivery

We thank the 24 subject matter experts who volunteered their time and expertise to evaluate RIA grant submissions in 2024.

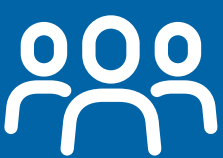
ALLINA HEALTH RESEARCH

2024 BY THE NUMBERS

Some of these figures include those from our partners and affiliates.



462  
active studies



4,307  
active enrollment



476  
publications



405  
academic  
presentations  
& abstracts



416  
media & other  
presentations



70  
active grants



\$4.5M  
new grant  
funding awards



\$5.6M\*  
grant funding revenue

\*Does not include \$13M invested in cardiovascular research.



CANCER  
KEY PERFORMANCE  
INDICATORS

51  
active studies

217  
active enrollments

27  
publications

8  
presentations  
and abstracts

8  
media and other  
presentations

3  
active grants

\$1.5M  
grant funding revenue

Cancer Research

Allina Health Cancer Institute (AHCi) conducts high-quality, cutting-edge clinical trials for patients with or at risk for cancer. Clinical research plays a crucial role in our mission to enhance the well-being of those we serve. We provide patients with access to new, promising treatments within local hospitals or clinics. Our innovative partnerships empower us to build upon the exceptional work of our research team. Our investigators advance oncology care through pioneering treatments, public forums and interviews, presentations at scientific conferences, and publications in professional journals.

AHCi employs a multi-center approach, bringing diagnostic and therapeutic trials to Abbott Northwestern Hospital campus in Minneapolis, United Hospital campus in St. Paul, Mercy Hospital campus in Coon Rapids, Abbott Northwestern-WestHealth in Plymouth, and AHCi Clinic in Cambridge.

AHCi is a member of the Metro Minnesota Community Oncology Research Consortium (MMCORC), sponsored by the National Cancer Institute (NCI) and participating hospitals and clinics. MMCORC provides patients access to advances in research. In 2024 our team enrolled 18 patients in NCI-approved research studies.

Cancer Key Accomplishments

- In 2024, the AHCi Research Team embarked on an ambitious journey, initiating work on over 20 clinical trials. This effort was bolstered by securing over \$1.5 million in funding, enabling the expansion of our research activities to Abbott Northwestern-West Health and Cambridge Medical Center.
- Building on our collaborative spirit, we partnered with the dedicated teams at Allina Health to initiate bispecific antibody treatments, offering new hope for patients with complex cancer profiles.
- Together, we are also making significant strides towards the implementation of Tumor-Infiltrating Lymphocyte (TIL) therapy, a cutting-edge approach that harnesses the body's immune system to target and destroy cancer cells more effectively. These innovative therapies underscore our shared vision of pioneering advanced cancer treatments and enhancing patient care.

Neuroscience Research

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.

Neuroscience Key Accomplishments

- The AHNSPI Research team continued to grow along with the Allina Health Neuroscience, Spine, and Pain Institute. 30 new providers joined AHNSPI in 2024, bringing new neurology subspecialties and patient populations to our portfolio. With support from the Stroke Program, research hired a dedicated Stroke Research Nurse to provide clinical trial-based care across Allina Health's three metro hospitals.
- AHNSPI Research opened ten new research studies within the Institute, including our first acute interventional stroke study and a pivotal device trial to treat wide-neck intracranial aneurysms. Four clinical trials are in start-up.
- The neurointerventional radiology team at the Allina Health Neuroscience, Spine and Pain Institute surpassed a milestone having treated 4,000 aneurysms at Abbott Northwestern Hospital. The neurointerventional radiologists keeps the latest technologies and innovation through clinical research at the forefront of their care. Seventy-three patients actively participated in neurointerventional radiology studies in 2024.



NEUROSCIENCE  
KEY PERFORMANCE  
INDICATORS

27  
active studies

397  
active enrollments

17  
publications

2  
presentations  
and abstracts

8  
media and other  
presentations

7  
active grants

\$660,305  
grant funding revenue



MHAS  
KEY PERFORMANCE  
INDICATORS

5  
active studies

638  
active enrollments

1  
publication

6  
active grants

\$739,033  
grant funding revenue

# Mental Health and Addiction Services Research

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.

## MHAS Key Accomplishments

- In collaboration with the Allina Health Center for Provider Wellbeing, MHAS enrolled more than 80 participants in a groundbreaking randomized controlled trial comparing different models of peer support on healthcare provider wellbeing, funded by an award from the Minnesota Department of Health.
- MHAS completed a multi-year study evaluating a suicide prevention digital platform for people who are acutely at risk for suicide and seeking psychiatric crisis services across Allina Health emergency departments (EDs).



REHABILITATION  
KEY PERFORMANCE  
INDICATORS

22  
active studies

1,995  
active enrollments

14  
publications

14  
presentations  
and abstracts

3  
media and other  
presentations

13  
active grants

\$629,361  
grant funding revenue

# Rehabilitation Research

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, stroke and more, with the goal of optimizing rehabilitation outcomes and full societal participation.

## Rehabilitation Key Accomplishments

- A changing of research seasons occurred as Mary Vining Radomski, PhD, OTR/L and Maggie Weightman, PT, PhD moved towards retirement and Shraddha Srivastava, PhD joined the Courage Kenny Research Center. Dr. Srivastava will serve as the Allina Health principal investigator for the MN Spinal Cord Injury Model System (MNSCIMS) project and further her lines of research seeking to harness innovative techniques to identify new interventions for people with neurological injury to support balance, walking, and independence. Dr. Katy O’Brien, PhD CCC-SLP, continued to grow her research examining communication changes and treatment approaches for people with brain injury, including use of natural language processing and artificial intelligence solutions to support patient-provider communication and engagement with rehabilitative care. Ongoing collaboration with Dr. Natalie Covington, PhD CCC-SLP, at the University of Minnesota, is focused on the development of clinical tools to understand and account for heterogeneity in cognitive recovery and response to rehabilitation after brain injury.
- Rehabilitation research expanded its reach, enrolling participants in research studies that addressed diverse needs of our patient populations, such as personalized memory treatment and examination of reading changes after traumatic brain injury, driving after brain injury, cortical mapping following stroke, spinal cord epidural stimulation, and implementation of cognitive rehabilitation clinical practice guidelines. Research funding included grants from the Department of Defense and the State of Minnesota, and CKRC continued to lead enrollment across sites as a member of MNSCIMS, a multi-center research program funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).





CDR  
KEY PERFORMANCE  
INDICATORS

55  
active studies

431  
active enrollments

20  
publications

13  
presentations  
and abstracts

6  
media and other  
presentations

31  
active grants

\$737,927  
grant funding revenue

Care Delivery Research

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

CDR Key Accomplishments

- **Mother Baby**  
Research in 2024 included an examination of the utility of lactate levels in predicting infection in peripartum patients. The team also evaluated a cardio-obstetric clinic designed to provide interdisciplinary care for pregnant patients with cardiovascular conditions. Other studies investigated COVID-19 prevalence, treatment and outcomes among pregnant patients; decision-making related to fetal surgery; and Allina Health’s pilot outpatient cervical ripening program. Key external partnerships included the national Environmental Influences on Child Health Outcomes study led by the National Institutes of Health, with 174 Allina Health patients enrolled in 2024. The team also continued collaborative research efforts with the University of Minnesota and Health Partners, including a new study examining the impact of a perinatal respiratory syncytial virus (RSV) vaccine.
- **Critical Care, Hospitalist, Medical Education**  
In 2024, the critical care team continued participating in a multi-site registry of patients receiving extracorporeal membrane oxygenation (ECMO), resulting in three publications. The team also assessed the clinical course and outcomes of ECMO in studies of Allina Health patients and continued comparative research of pulmonary embolism treatments, publishing results from one study and launching another collaborative study with the Mayo Clinic and Temple University. The hospitalist team examined patterns in the use of emergency use authorization therapies for patients hospitalized for COVID-19, finding variation by patient language and race/ethnicity. They also published an interventional study demonstrating that pharmacist review of patient allergies increases preoperative use of first-line antibiotics.

- **Emergency Medical Services**  
In 2024, the EMS research team continued its multi-year EMS Wellbeing Study, a survey-based study designed to monitor trends in occupational burnout, wellbeing, and the use of wellness resources in Allina’s 650 paramedics, emergency medical technicians, and 911 emergency dispatchers. New in the 2024 survey was an assessment of the verbal, physical, and sexual violence experienced by prehospital responders during the course of their EMS work. Related to the wellbeing work, the team published a case report illustrating how an Allina 911 dispatcher successfully used the Emergency Mental Health Dispatch training she had received through a grant from the Allina Health Foundation to assist a caller who was at imminent risk of suicide. In addition to optimizing care for callers in crisis, the training provides resilience and self-care techniques for our dispatchers, who are increasingly encountering callers experiencing mental health emergencies. The investigators also continued their efforts to identify opportunities to reduce unnecessary lights and siren use during ambulance responses in the interest of patient, public, and crew safety, and to study the impact of dispatch priority protocol modifications. Results from the wellbeing study and the lights and siren reduction project were presented at the American Public Health Association meeting in 2024 and at the National Association of EMS Physicians annual scientific sessions in early 2025.
- **Emergency Medicine**  
In partnership with Emergency Care Consultants, and a computer scientist, the team applied natural language processing techniques to emergency medicine provider notes to examine patterns in stigmatizing language.
- **Minnesota Electronic Health Record Consortium (MNEHRC)**  
In 2024, Allina Health continued its collaboration with the MNEHRC including two federally funded grants dedicated to pandemic preparedness and climate change. Allina Health scientists also lent their expertise to the development of new health indicators related to maternal and child health that will be featured on a public MNEHRC dashboard for use by stakeholders across the state.



ORTHOPEDICS  
KEY PERFORMANCE  
INDICATORS

13

active studies

129

active enrollments

11

publications

5

presentations  
and abstracts

14

media and other  
presentations

4

active grants

\$19,388

grant funding revenue

# Orthopedics Research

The research efforts at Allina Health Orthopedics are dedicated to translational research in orthopedics and sports medicine. Our investigators, through rigorous research and active engagement with the orthopedic community, have made significant advancements in the treatment and health of our patients. These efforts are fueled by our commitment to dedicated research and patient-centered care. We continuously strive to expand the possibilities within the orthopedic and sports medicine fields.

## Orthopedics Key Accomplishments

- Building on the growth of robotic-assisted joint replacement procedures in the Allina Health system, the AH Orthopedics research team is investigating the impact of robot-assisted joint replacements on the incidence of post-operative complications compared to non-robot-assisted joint replacements in the system. This research led by Bishoy Gad, MD, MBA seeks to address a critical question in orthopedic surgery regarding the efficacy of robotic assistance in reducing complications following joint replacement procedures.
- AH Orthopedics research is collaborating with orthopedic traumatologist Gennadiy A. Busel, MD and endocrinologist Christopher T. Martin, MD, in a research project studying fragility fractures and bone health. Allina Health was selected as a site for the project funded by the federally supported Patient-Centered Outcomes Research Institute (PCORI). The program is being led by the University of Alabama-Birmingham and the team completed planning and start-up throughout 2024.



NURSING  
KEY PERFORMANCE  
INDICATORS

10

active studies

6

publications

9

presentations  
and abstracts

26

media and other  
presentations

4

active grants

\$49,121

grant funding revenue

# Nursing Research

Nursing research at Allina Health has been instrumental in enhancing patient care through clinical inquiry and the integration of new discoveries into practice. Our investigator-initiated studies have focused on clinical phenomena that impact patient safety, nursing satisfaction, and quality of life. By exploring and addressing these issues, nursing research has made a unique contribution to the discovery and implementation of advancements in patient care.

## Nursing Key Accomplishments

Abbott Northwestern Hospital earned its fourth Magnet designation from the American Nurses Credentialing Center's (ANCC) Magnet Recognition Program. This achievement places Abbott Northwestern among the elite two percent of hospitals in the United States that have received this prestigious redesignation four times. The Magnet designation is the highest honor for excellence in nursing practice and exceptional patient outcomes.

To attain Magnet status, a program must complete a rigorous process, meeting 92 specific standards. These standards include demonstrating a strong research culture, showcasing nurse-led research projects, collecting data on patient outcomes, and providing a supportive environment for nurses to conduct research activities.





MHIF  
KEY PERFORMANCE  
INDICATORS

220+

active studies

350+

active enrollments

270

publications

335

presentations  
and abstracts

15

media and other  
presentations

\$13M+

invested in  
cardiovascular research



# Minneapolis Heart Institute Foundation® Research

## Creating a world without heart and vascular disease

Heart disease remains the number one cause of death worldwide. This reality fuels the dedication of the Minneapolis Heart Institute Foundation® (MHIF) mission, which has delivered lifesaving cardiovascular research and education to advance cardiovascular care for patients around the world – for more than 43 years. MHIF has a strong partnership with Allina Health Minneapolis Heart Institute physicians and leads independent research and education initiatives to advance care and options for patients across all areas of cardiac and vascular care. MHIF also partners with the leading pharmaceutical and medical device companies as a clinical research site evaluating new and advanced medications, technologies and procedures, bringing hope to patients and families with access to new options through research. MHIF’s portfolio of educational initiatives includes sharing learnings from research through publications, live cases and course offerings to advance expertise around the world, as well as outreach and education to inspire the community to understand and take care of their hearts.

## MHIF Key Accomplishments

- MHIF reached an important research milestone with U.S. FDA approval of the TriClip™ (Abbott), a non-surgical, transcatheter edge-to-edge repair system. MHIF was the top enroller – enrolling the first and largest number of patients of all 68 clinical sites participating in the TRILUMINATE™ Pivotal trial in the U.S., Canada and Europe, led by Paul Sorajja, MD, the Roger L. and Lynn C. Headrick Family Chair of the MHIF Valve Science Center and global principal investigator for the pivotal trial. The MHIF Imaging Core Lab, led by João Cavalcante, MD, director of the MHIF Cardiovascular Imaging Research Center, provided advanced cardiac imaging analysis for the pivotal trial.
- MHIF initiated first enrollments in the Precise Procedural and PCI Plan (P4) Research Trial evaluating the potential for advanced cardiovascular imaging to enhance patient care. Patients receive CT imaging with state-of-the-art 3D modeling provided by the trial

as part of pre-procedure planning to guide the PCI used to open a blockage in the heart. The P4 research trial is a global, multicenter, randomized trial sponsored by CoreAalst BV to compare novel coronary CT-guided PCI and standard IVUS-guided PCI. The first U.S. procedure for the P4 trial was performed by Drs. Yader Sandoval & Emmanouil Brilakis, in collaboration with Drs. John Lesser and João Cavalcante, all study investigators at MHIF.

- MHIF expertise brings leadership opportunities across research, including first-in-world opportunities with new technologies: MHIF principal investigator Dr. John Zakaib was among the first to enroll patients and remains the top enroller in the LEADR Clinical Study evaluating novel conduction system pacing with investigational OmniaSecure™ defibrillation lead (Medtronic). MHIF team with Drs. Paul Sorajja, Vinayak Bapat and Nadira Hamid enrolled the first patient in the U.S. VISTA early feasibility study for a new transcatheter tricuspid valve technology (VDYNE). MHIF principal investigator Dr. Jay Traverse enrolled the first patient in the Super-Saturated Oxygen Comprehensive Observational Registry to provide efficacy evidence for SSO2 Therapy (Zoll) to reduce heart failure and mortality after left anterior descending ST-elevation myocardial infarction (LAD STEMI) heart attacks.
- MHIF was recognized as one of the 2024 CRF® Scientific Excellence Top 10 (SET-10) for outstanding research and groundbreaking contributions to interventional cardiovascular medicine, presented at TCT® 2024. This prestigious recognition reflects the relentless dedication, innovation, and hard work of MHIF physicians and scientists, whose research exemplifies the significant advancements they are driving in the field of cardiovascular medicine.
- MHIF had 270 publications in leading medical journals in 2024. A complete listing of MHIF publications in 2024 is available at [mplsheart.org/2024publications](https://mplsheart.org/2024publications)



PHARMACY  
KEY PERFORMANCE  
INDICATORS

33  
active studies

150  
active enrollments

7  
publications

13  
presentations  
and abstracts

1  
active grant

Pharmacy Research

Pharmacy research strives to ensure optimal medication use in both inpatient and outpatient care settings. This involves evaluating the appropriateness and safety of medication therapy, as well as considering interventions to improve medication-related outcomes. These efforts often encompass collaboration with other healthcare disciplines to ensure optimal patient care. In addition, pharmacy supports medication procurement, storage, and preparation for research in other service lines.

Pharmacy Key Accomplishments

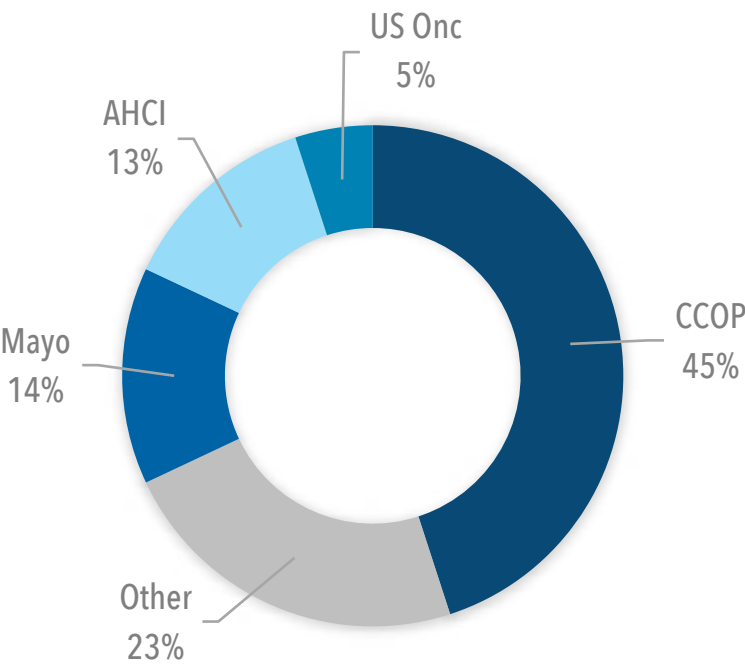
- Research efforts covered a broad array of medication and medication-related process improvements including transitions of care, optimal antimicrobial use, anticoagulation outcomes, optimal IVIG and albumin use, chemotherapy treatment and reaction mitigation assessments, TPN use optimization, risk assessment of oral hypoglycemics, antipsychotic use in ED, cannabis drug interaction assessment, dispensing technology optimization, and standardization of medication distribution in disaster management.
- Pharmacy residents play in integral role in pharmacy research work and work closely pharmacist investigators and advisors. At least 10 of these endeavors were presented on local and national platforms.
- Pharmacy is in the unique position of supporting the research efforts of other departments while conducting their own research and quality improvement work. Pharmacy supported 56 studies across multiple service lines including cancer, heart, neuroscience, and mother baby.

Laboratory Research

In 2024, Allina Health Laboratory supported 95 new and ongoing research studies through processing and distributing biospecimens collected or held at the laboratory. These new studies included 20 Allina cooperative studies and 75 non-Allina studies through which patients were seen and/or treated at Allina Health hospitals and clinics.

The efforts included the disbursement of patient slides and/or tissue blocks for 165 studies at institutions across the country. Agreements with these institutions guarantee safe and protected research compliance. Most samples were sent for National Institutes of Health Community Clinical Oncology Program (CCOP) studies. Additional patient samples were sent for clinical trials originating from AHCI, Mayo Clinic, and other national medical institutions.

SENDOUT SLIDES/BLOCKS  
BY STUDY RESEARCH GROUP





TC SPINE  
KEY PERFORMANCE  
INDICATORS

26  
active studies

23  
publications

6  
presentations  
and abstracts

27  
media and other  
presentations

1  
active grants



# Twin Cities Spine Center® Research

Twin Cities Spine Center's (TC Spine) 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 find our roots in the pioneering work of John H. Moe, MD, a founder of modern scoliosis research and treatment. His work led to the development of the Scoliosis Research Society and the first comprehensive textbook on spinal deformities. TC Spine's surgeons and research staff carry on his legacy. Our research studies explore and substantiate operative and nonoperative treatments, diagnostic methods, and the natural history of spine problems, specifically related to clinical and surgical outcomes.

## TC Spine Key Accomplishments

- In 2024, TC Spine had 23 peer-reviewed papers published and presented 4 abstracts.
- We received a grant from the Medtronic Giving Connection Program for a Robotic Spine Surgery Fellowship.
- We conducted 22 retrospective research studies and 4 prospective research studies.
- We implemented a new third-party software ("OBERD") to move from paper-based to fully electronic outcomes data collection on surgical patients by the end of 2025.

# Allina Health Research Strategic Success

## People

We partnered with intramural departments and extramural research organizations to leverage our research efforts and enhance Allina Health's compassionate care in the communities we serve.

## Quality and Experience

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

## Safety and Accreditation

As an Association for Accreditation of Human Research Protection Programs, Inc. (AAHRPP) accredited organization, Allina Health shares innovative research practices and collects data to help establish benchmarks and assess quality improvement. AAHRPP compiles and distributes these data to aid organizations, sponsors, government agencies, and participants in identifying and promoting high-quality practices.

## Financial Health

We pursued financially balanced research portfolios and staffing practices that resulted in revenue equivalent to 70% of our expenses, including revenue growth in externally funded awards through industry and government sponsors. We maintained our high standard of fiscal and programmatic standards, as evidenced by our sixth consecutive Single Audit with no findings.

## Allina Health Research Network Participation

We collaborate with and are supported in part by several respected regional and national research networks. The partnerships facilitate the exchange of ideas, information, and resources, promoting the dissemination of scientific and process improvement data from the research outputs. Allina Health Research is currently a member of the following networks:

- Academic and Community Cancer Research United (ACCRU)
- The Greater Plains Collaborative (GPC), a PCORnet Clinical Research Network
- The Guardian Network (GRN)
- Metro Minnesota Community Oncology Research Consortium (MMCORC)
- Minnesota Electronic Health Records Consortium (MNEHRC)
- Minnesota Regional Spinal Cord Injury Model System (MN Regional SCIMS)
- NIH-NIDA Clinical Trials Network (National Institute on Drug Abuse), NorthStar Node
- NIH StrokeNet Clinical Trials Network, part of University of Minnesota Regional Coordinating Center



# 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 and Contracts, Research Finance, Research Grants, Research Integrity, and Clinical Research Informatics & Analytics.

**Research Billing** manages the billing compliance, research pricing review process, and Epic Research Functionality 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 Grants** provide 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 Contracts** provide 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 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 and those of Allina Health’s employees, facilities, patients, and data.

**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, all while ensuring billing and grant rules and regulations are followed.

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

# Research Support Services



## BY THE NUMBERS

### Research Contracts & Agreements

**292** agreements reviewed  
**60** clinical trial agreements

### Research Billing

**120** new study reviews  
**162** studies with billing activity  
**3,563** patient encounters linked to Research in Excellian  
**653** total unique patients  
**\$1.1M** revenue to AH facilities for clinical research services

### Research Grants & Finance

**0** findings on the Federal Single Audit for the sixth consecutive year  
**\$5.75M** total revenue in FY2024, covering 70% of total expenses  
**14** new industry awards opened in FY2023  
**22** new grants awarded from the Allina Health Foundation as well as federal or state government  
**4** system-wide non-research Federal and State grants supported

### Institutional Review Boards

**715** Allina Health IRB submissions reviewed  
**959** designated external IRB submissions processed

### Research Compliance

**48** studies reviewed/ site visits  
**25** IRB internal reviews  
**40** site consults

### Research Conflict of Interest

**665** conflict of Interest disclosures submitted  
**140** individuals with positive disclosures identified  
**66** conflict of interest management plans executed

### Median turnaround days from Complete Submission to Review

**11** expedited  
**10** convened board

### Median turnaround days from Complete Submission to Approval

**17** expedited  
**44** convened board  
**13** days from submission to exemption determination



# Research Day 2024

On September 24, Allina Health Research hosted our first Research Day since the pandemic. The event celebrated the resilience and steadfast dedication of our research community. We were thrilled to witness the innovation and collaboration that continues to drive our mission.

One hundred researchers, providers, presenters, and others from the Allina Health research community gathered at The Whitney and Elizabeth MacMillan Community and Education Center for scientific research presentations, a judged poster session, awards ceremony, and many vital discussions. Together, we celebrated the strides we’ve made in advancing health care through research and innovation.

## SPEAKERS



**Keynote speaker, Ryan Armbruster, MHA**, Senior Fellow and Director of Executive Program, School of Public Health, University of Minnesota.  
  
Keynote presentation: *Innovation in Motion: The Key to Successful Care Delivery Innovation Programs and Their Future.*



**Sean Boley, MD**  
  
Research Study Presentation: *Racial Differences in Stigmatizing Positive Language in Emergency Medine Notes.*



**Natalie Covington, PhD and Scott Friedman, PhD**  
  
Research Study Presentation: *Provider Communication in Rehabilitation Open Patient Encounter Notes (ReOPEN): Application to Neurorehabilitation for Traumatic Brain Injury.*

## Thank you, Allina Health Foundation!

Research Day was made possible by a grant from Allina Health Foundation and its generous Allina Health donors.

## POSTER SESSIONS, JUDGING & NETWORKING



## AWARD WINNERS



### Research Day Award Winners

With Dr. Badrinath Konety, left to right: Distinguished Investigator Awardee, Maggie Weightman, PT, PhD; Research Support Awardee, Jennie Schletty, MBA; New Investigator Awardee, Charlene Fares, MD; Research Champion Awardee, Ganesh Asaithambi, MD; Research Support Awardee, Sophie Hanks, BS; Research Support Awardee, Anna Schulte, MPH; Research Champion Awardee, Brian LeLoup, PT, DPT (not pictured); Research Impact Awardee, Frank Rhame, MD (not pictured)



### Best Poster Award Winners

Left to right: Stephanie Edmonds, PhD, MPH, RN; Sandra Castro-Pearson, PhD, Heidi Menard, MA, RN, NE-BC; Nate Dahle, MSN, MBA, RN, CRRN; Dana Gray, BSN, RN, CCRN; Anna Schulte, MPH and Whitney Wunderlich, MA



# New Staff in 2024



**Caroline Alessi**  
Financial Analyst,  
Research Finance



**Amy Almquist, MPH**  
Research Project Specialist,  
Care Delivery Research



**Madalyn Jacobs, RN, BSN**  
Nurse Researcher,  
Allina Health Cancer Institute



**Meaghan Keohane, BS**  
Research Project Specialist,  
Allina Health Cancer Institute



**Jenna Primus, RN, BSN, OCN, PHN**  
Research Nurse,  
Allina Health Cancer Institute



**Shraddha Srivastava, PhD, PT**  
Senior Scientific Advisor,  
Courage Kenny Research Institute

## Allina Health Research, Partner\* and Affiliate Publications



Publications are ordered in reverse chronological order by month, as available.

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