Provincial Health Services Authority

PHSA RESEARCH AND STUDENT EDUCATION

RESEARCH METRICS SUPPLEMENTARY REPORT

FY 2024 – 2025

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PHSA RESEARCH METRICS
FISCAL YEAR SUMMARY – PHSA OVERALL

Indicator		Key Measure Description	FY 2022-23	FY 2023-24	FY 2024-25
Producing & Advancing Knowledge	1a	**Total Annual Grant Awards***	**$190,089,694**	**$218,873,616**	**$276,905,847**
		Salary Awards	$16,573,879	$19,781,724	$26,609,930
		Infrastructure Awards	$6,316,173	$16,998,023	$78,153,411
		Operating Grants	$163,514,856	$181,890,928	$171,977,755
		Other	$3,684,786	$202,942	$164,751
		COVID-19 Research Funding (included in above categories)	$7,057,997	$11,026,956	$3,632,086
	1b	**Total Annual Grant Awards*** (by RISe Sector)			
		Government	$85,150,160	$102,028,986	$137,706,432
		Non-Profit	$83,475,718	$92,417,844	$111,964,763
		Industry	$21,463,815	$24,426,786	$27,234,653
	1c	**CIHR Annual Grant Application Success Rate** (PHSA Overall/National in %)			
		2024 Fall Project Grant	45/25	27.8/17.5	22.4/17.2
		2025 Spring Project Grant	25/22.4	20.0/15.3	23.3/15.5
	1d	**Total # of Publications**	4,022	3,802	3,954
Building Research Capacity	2a	**Total # of Research Trainees**	3,120	2,982	3,164
	2c	**Total # of Researchers** (excluding Affiliate Investigator)	963	1,049.5	1084
	2e	**Research Support Fund Grants** (Tri-Council only)	$4,134,441	$4,036,502	$3,840,697
Achieving Economic Benefits & Innovation	3a	**# of Invention Disclosures**	31	25	29
		# of Provisional Patent Applications Filed	15	10	2
		# of PCT Applications Filed	5	6	5
		# of Patents Filed/Issued	15/42	17/36	17/24
	3b	**# of Active License Agreements**	133	134	139
		# of Spin-off Companies	20	21	23
		IP Related Revenue – Realized Revenue	$1,767,596	$1,385,147	$2,308,971
Advancing Health & Policy Benefits	4a	**Clinical Trials** (including non-PHSA PIs utilizing PHSA facilities and resources)			
		# of Active Trials at end of FY	706	712	743
		Cumulative Subject Enrollment at end of FY	37,266	31,855	35,402
	4b	**Registries as Research Resources**			
		# of Research Requests/Approvals	223/165	266/255	283/260

** Includes Major CFI Infrastructure Grants*

PHSA AGGREGATE ANALYSIS

Provincial Health Services Authority

Producing and Advancing Knowledge

In FY 2024-25, researchers affiliated with PHSA were awarded a total of $276,905,847, an increase of 26.5% from FY 2023-24.

Operating grants continue to make up the largest portion (62.1%) of total funding received. Operating grants support specific, time-limited research projects. While operating grants are the foundation of research grants, salary awards are important to provide researchers with the protected time to successfully compete for operating grants and represent 9.2% of total awards for the past three fiscal years. A breakdown of funding types and subtypes by fiscal year can be found in Figure 1. For FY 2024-25, the subtype of Operating Grants garnered the largest portion of research funding.

See Table 1 for a breakdown of COVID-19 related research funding for FY 2024-25 by program. Award totals decreased from FY 2023-24 due to COVID-19 related projects ending.

FIGURE 1 Total PHSA Research Funding by Funding Type and Subtype by Fiscal Year

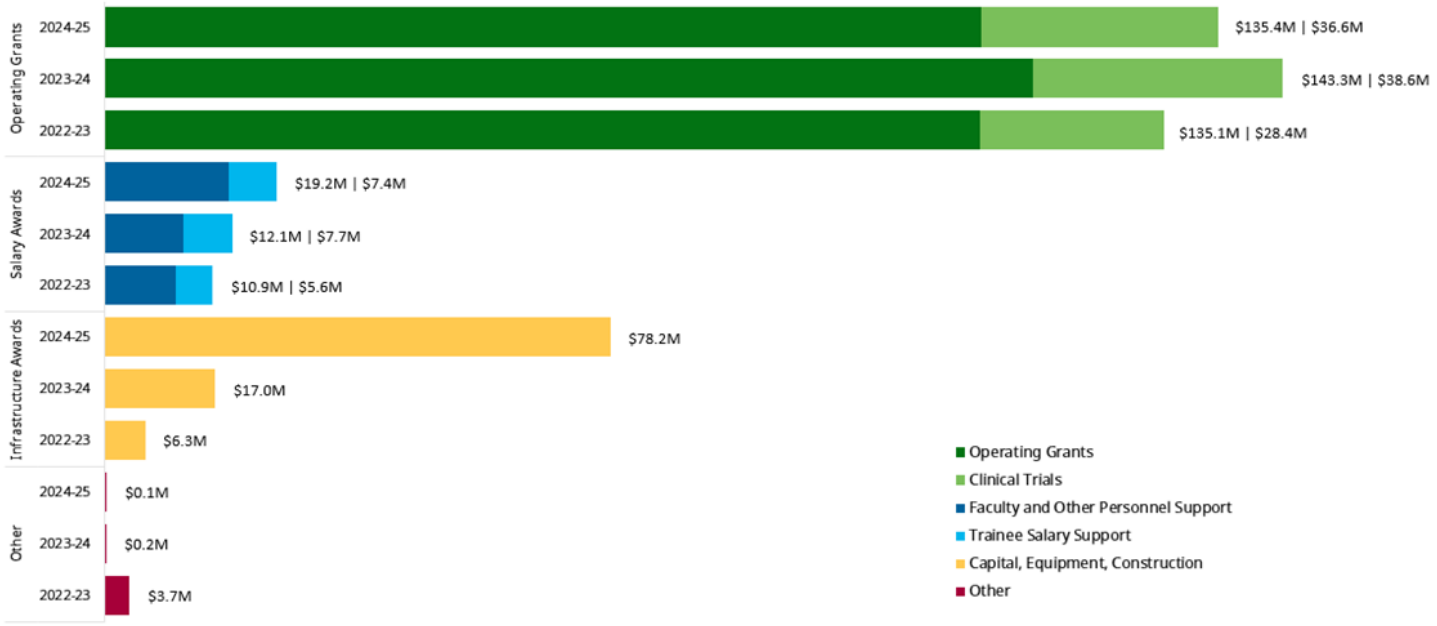


TABLE 1 COVID-19 Research Funding – FY 2024-25

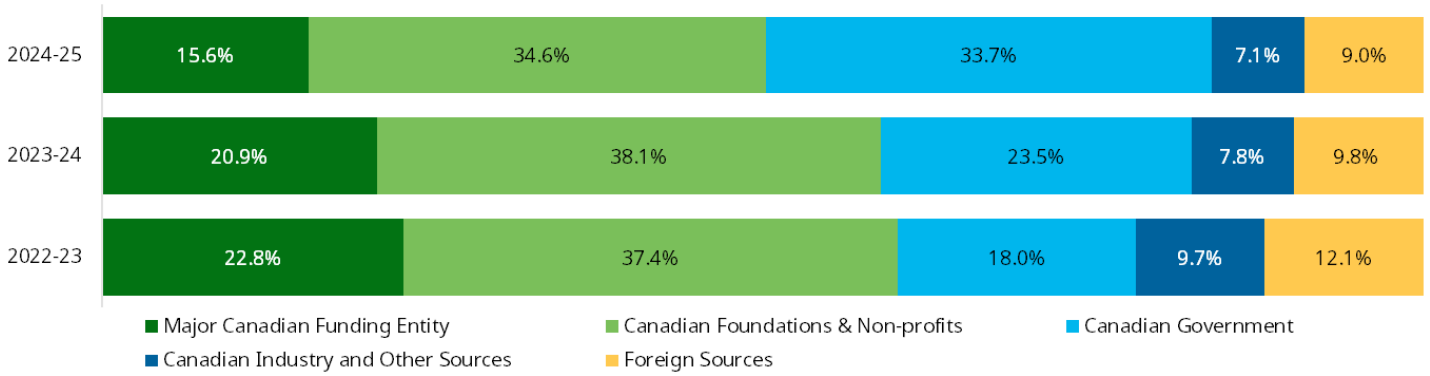
Research Institute	Total
BCCHR	$2,646,705
WHRI	$21,250
BCCDC	$964,131
Grand Total	**$3,632,086**

Research Support Fund grants total $3,840,697, representing funding to support the indirect costs of research for tri-council awards, but is not included in total research funding or the figures below. As research support is a shared expense between UBC and PHSA research programs, PHSA has negotiated to receive 66% of the applicable UBC Research Support grant. Figure 2 shows Total Research Funding by Fiscal Year and Type for the past three fiscal years.

FIGURE 2 Total PHSA Research Funding by Fiscal Year and Type

A comparison of funding source by source category over the past three fiscal years can be found in Figure 3. This figure highlights the extent to which primary sources of funding vary from year to year. This year, Canadian Foundations & Non-profits and Canadian Government sources represent 68.3% of the total funding. Canadian Foundations & Non-profits have continuously had the largest share of funding in the last three years. Canadian Industry and Other Sources and Foreign Sources remain fairly stable, while Canadian Government funding is at its highest level in three years.

FIGURE 3 Percentage of PHSA Research Funding by Funding Source Category by Fiscal Year



In addition to the above, Figures 4 and 5 show the same award data by RISe Sector, (see Glossary – Appendix 1, page. 68 for UBC RISe Sector definition) both by fiscal year and by program for the past three fiscal years.

FIGURE 4 Percentage of PHSA Research Funding by RISe Sector and Fiscal Year

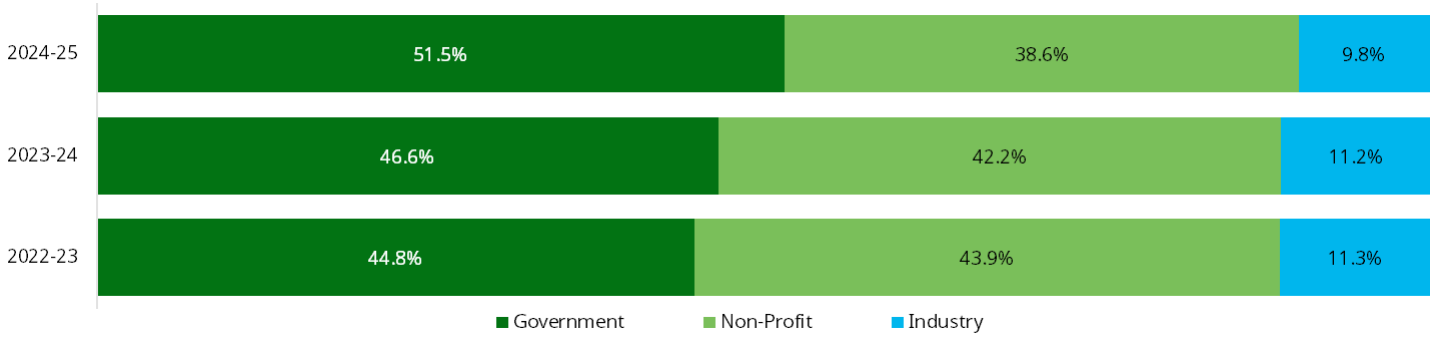
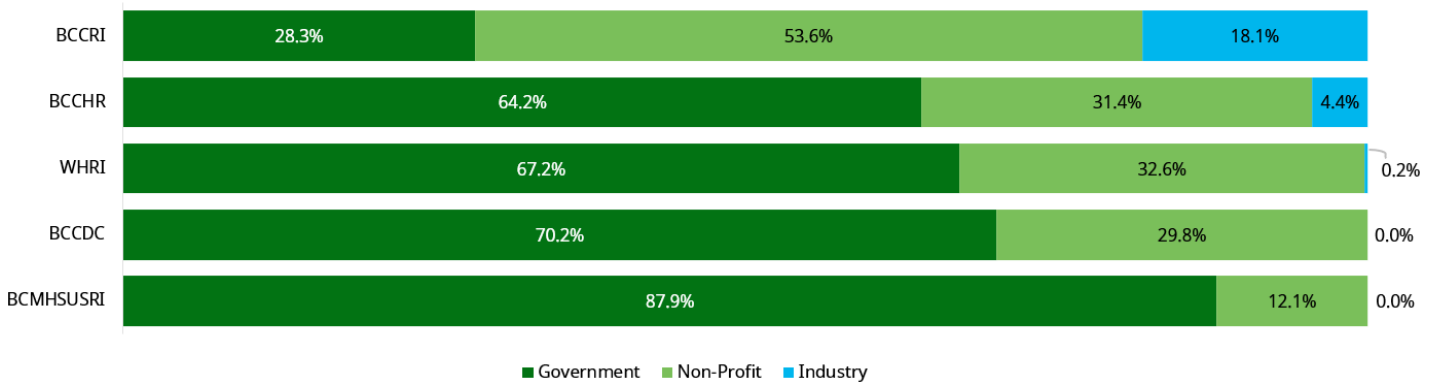


Figure 5 shows the percentage of funding by RISe Sector and PHSA Program for FY 2024-25. This graph reflects the variations in funding sources for all PHSA research institutes, as WHRI, BCCDC, and BCMHSUSRI are primarily supported through government funding.

FIGURE 5 Percentage of PHSA Research Funding by RISe Sector and Program



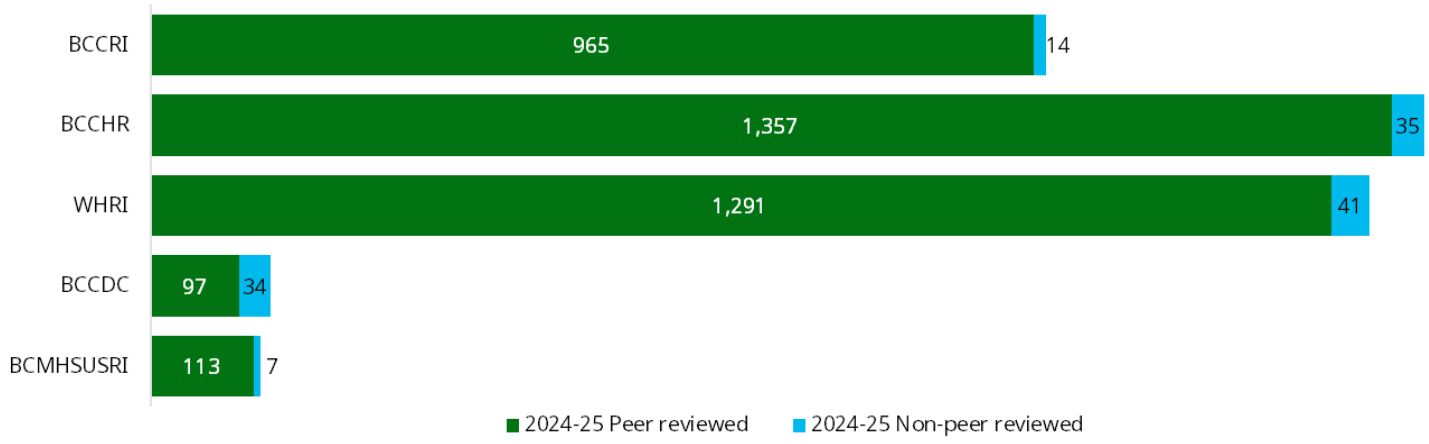
The application success rate is reported for the Fall 2024 and Spring 2025 CIHR project grant competitions. Results (see Table 2) are shown for National and PHSA research institutes combined. PHSA enjoyed success in both Project Grant programs and was above the national averages, resulting in 32 awards.

TABLE 2 PHSA Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	PHSA Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	22.4% (15/67)
2025-03 Project Grant	15.5% (435/2814)	23.3% (17/73)

Statistics for publications were collected through SciVal. Publications were compiled in the categories of books, book chapters, peer-reviewed publications inclusive of published journal articles, case reports, essays, literature reviews, and reports produced for government. Refer to Figure 6 for a breakdown of total publications by program and category. Totals are reported by calendar year for all programs. A breakdown by types is shown in the program specific sections due to low sample size.

FIGURE 6 Total Number of Publications by Program and Category



Building Research Capacity

PHSA research institutes identified 1,084 researchers in FY 2024-25, up 34.5 from FY 2023-24 (see Figure 7). This total does not include Affiliate Investigators, who are defined as researchers with a primary affiliation with a research or academic institution external to PHSA, but who wish to remain collaborators with PHSA researchers. PHSA does not track affiliate investigators funding, publications, or trainees, however affiliate investigators are included in the researcher totals found in each program section. To avoid duplication, efforts were made to count each researcher only once by attributing each researcher to the entity where the majority of their salary and/or research support was received.

FIGURE 7 Total Number of PHSA Researchers by Fiscal Year

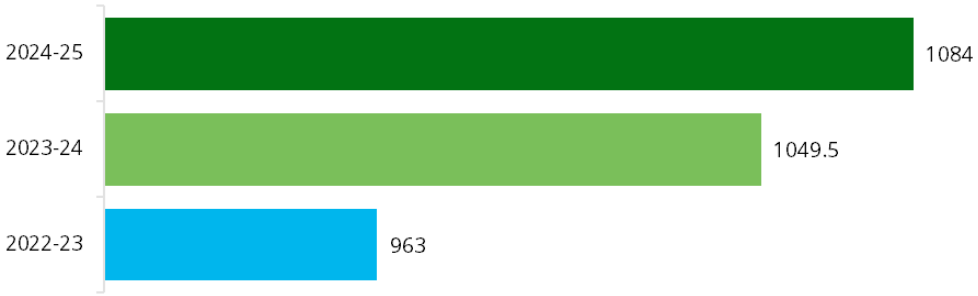


Table 3 provides summary statistics by program at the Principal Investigator (PI) level. PHSA received funding for 500 Principal Investigators collaborating with 1,574 UBC co-investigators for 1,601 unique studies in FY 2024-25. This excludes Salary and Other award types, as these are not designated for specific studies and the number of co-investigators from other academic institutions.

TABLE 3 Number of Funded Studies, PI's, UBC Co-PI's and Award Amount by Program

Research Institute	# Unique Studies	# Unique Pis	# UBC Co-PIs	Total Award Amount
BCCRI	652	205	574	$110,098,736
BCCHR	67	210	85	$6,971,567
WHRI	772	44	690	$128,264,270
BCCDC	25	31	17	$1,863,492
BCMHSUSRI	85	10	208	$2,933,100
Grand Total	**1,601**	**500**	**1,574**	**$250,131,166**

During FY 2024-25, PHSA researchers provided training and supervision to a total of 3,164 research trainees, an increase of 182 from FY 2023-24. This is a key metric because the training of post-doctoral fellows, doctoral, and masters Trainees in particular is a major indicator of the degree to which PHSA and its research institutes are supporting their academic mandate and ensuring the next generation of highly qualified research personnel. In addition, post-doctoral fellows and doctoral trainees contribute significantly to the conduct of research under the supervision of principal investigators. Figures 8 and 9 present the number of trainees by type and fiscal year for PHSA overall.

FIGURE 8 Total Number of PHSA Trainees by Fiscal Year

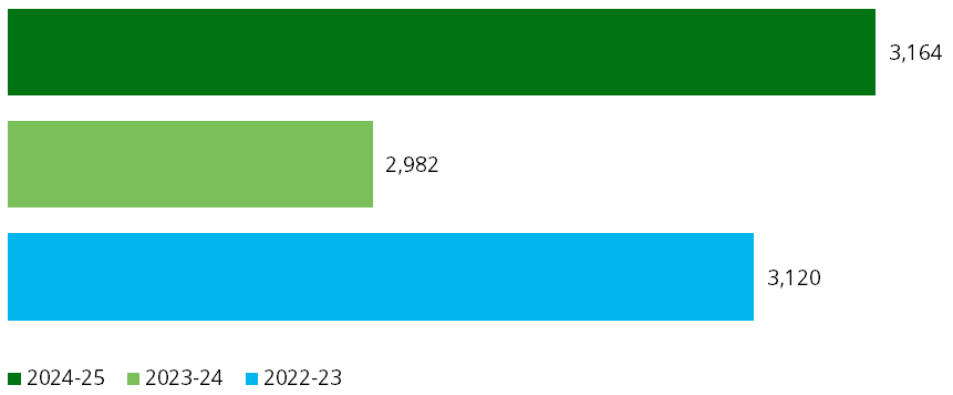
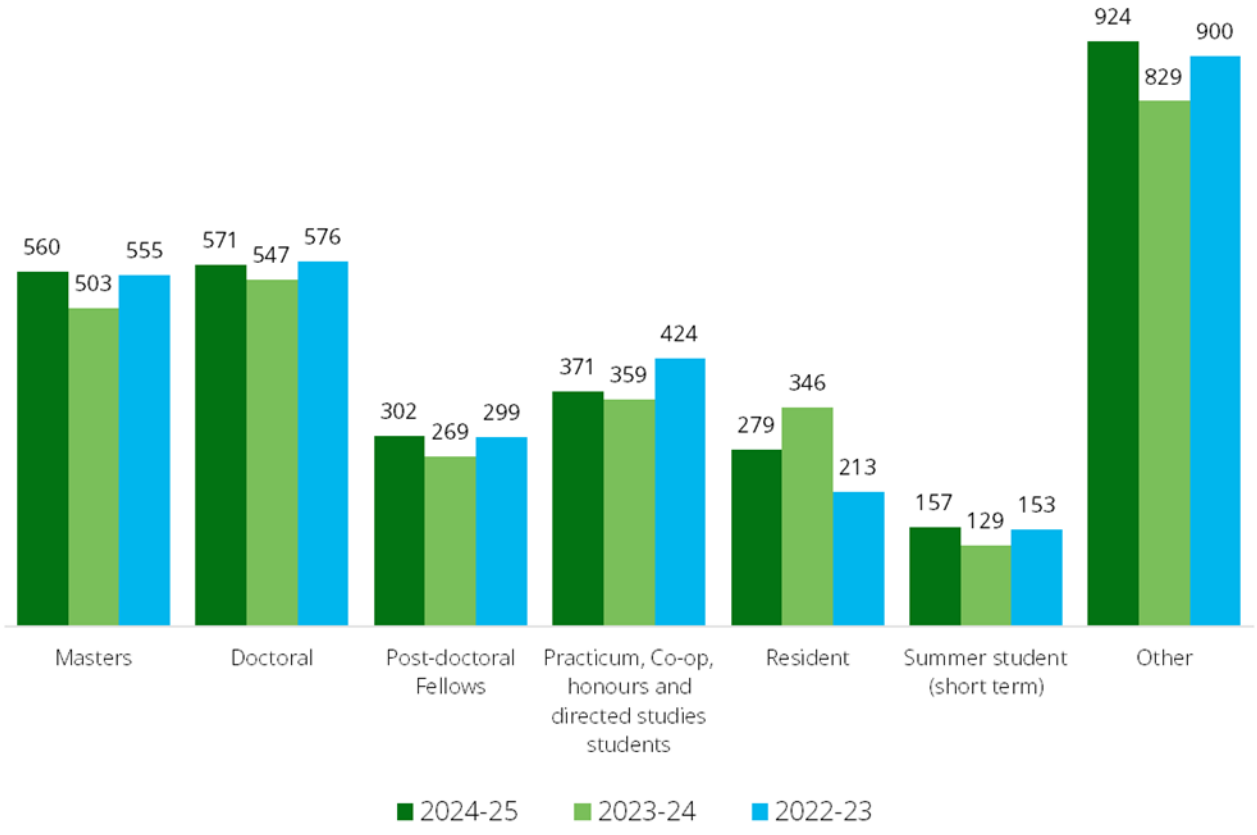


FIGURE 9 Total Number of PHSA Trainees by Type by Fiscal Year

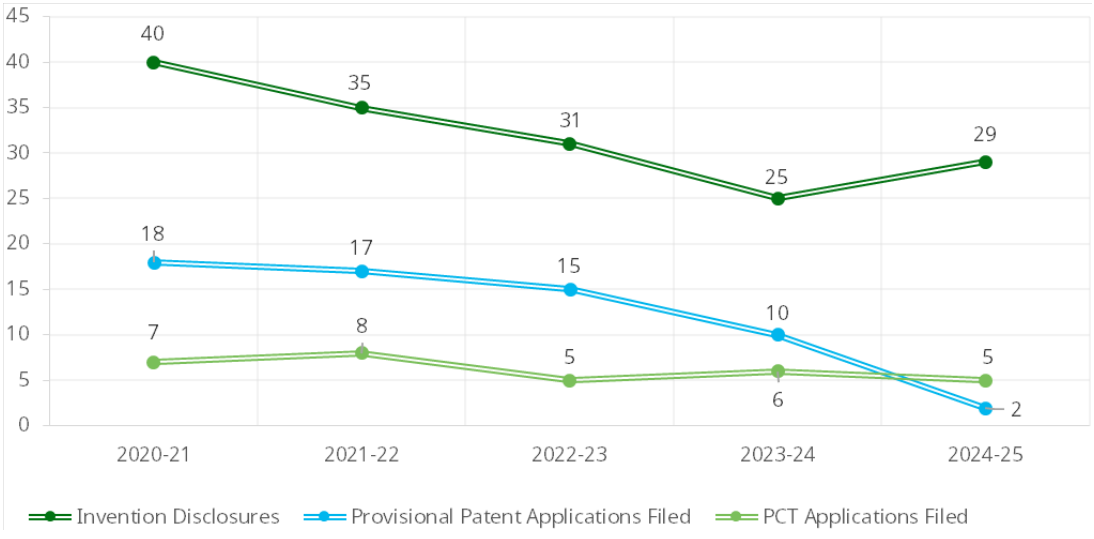


Achieving Economic Benefits and Innovation

The patent process, along with data on licensing and spin-off companies, is provided to measure the commercialization of discoveries, and other economic benefits resulting from these discoveries. Data are included for BCCRI (through the TDO), and BCCHR (through UILO). Program specific IP-related revenue data are provided in program sections.

Figure 10 demonstrates the total number of invention disclosure, provisional patent, and Patent Cooperative Treaties (PCT) applications filed by fiscal year. Invention disclosures are primarily internal documents, filed with TDO to inform the decision of whether or not to proceed with the patent process. The next stage in the patent process is to file provisional patent applications followed by PCTs, which act as a gateway to world-wide patents, each step involving greater specificity.

FIGURE 10 Total Number of Invention Disclosures, Provisional Patent and PCT Applications Filed by Fiscal Year



Refer to Figure 11 for the number of national provisional patent applications filed and issued. Applications filed in a given year represent different applications than those which are approved in that same year.

FIGURE 11 Total Number of National Provisional Patent Applications Filed and Issued by Fiscal Year

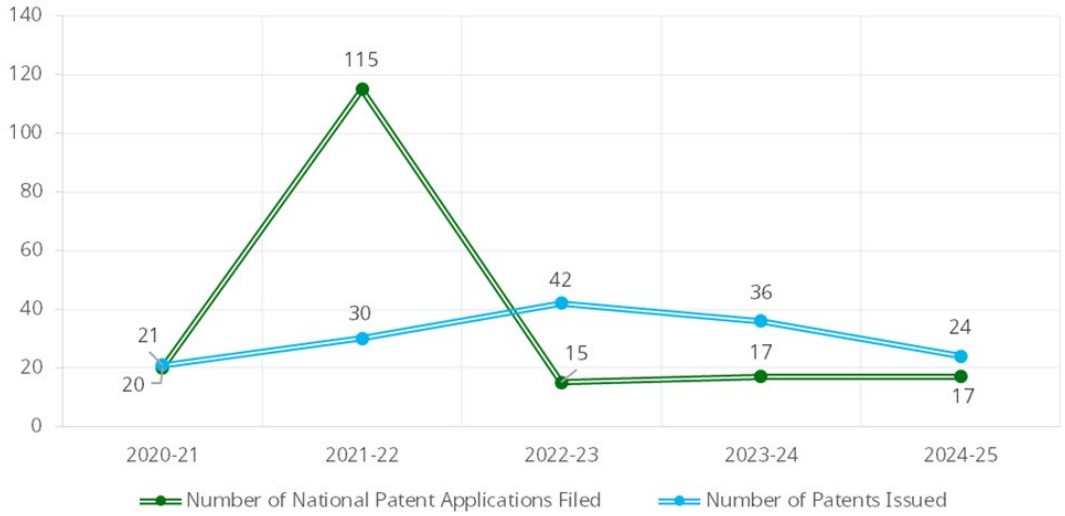
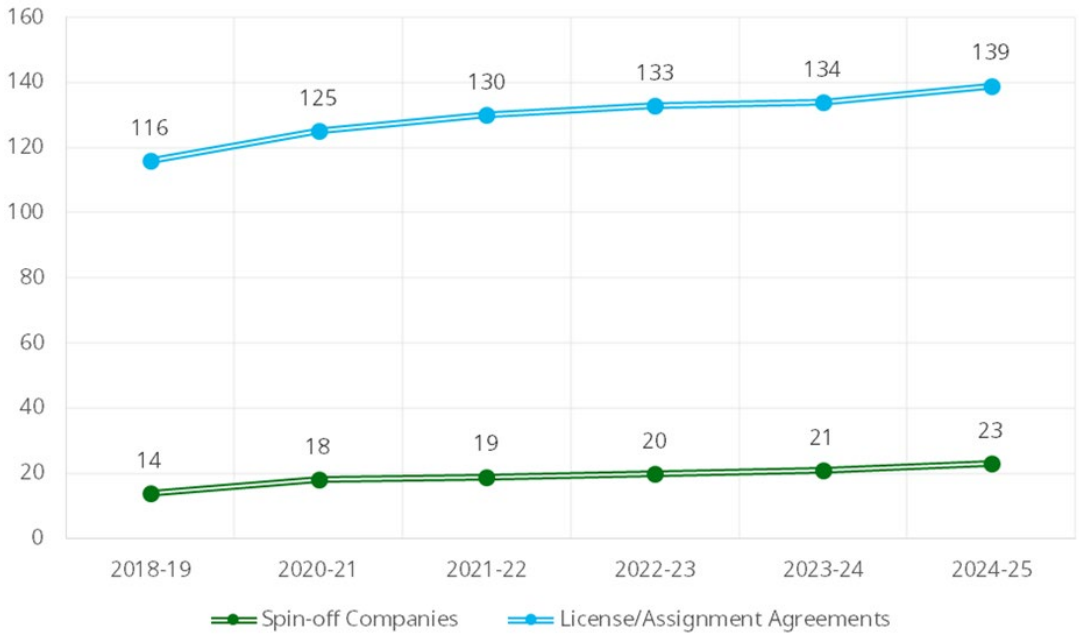


Figure 12 shows all licensing/assignment agreements and spin-off companies for PHSA Overall, combined for the past twelve years. Data are collected from PHSA's Technology Development Office (TDO) and through UBC's University-Industry Liaison Office (UILO) which includes activities from BCCRI and BCCHR researchers. Program specific numbers can be found in the BCCRI and BCCHR program sections. Two new spin-offs were established: Ascinta Technologies and Immfinity Biotechnologies (BCCRI).

FIGURE 12 License/Assignment Agreements and Spin-Off Companies by Fiscal Year

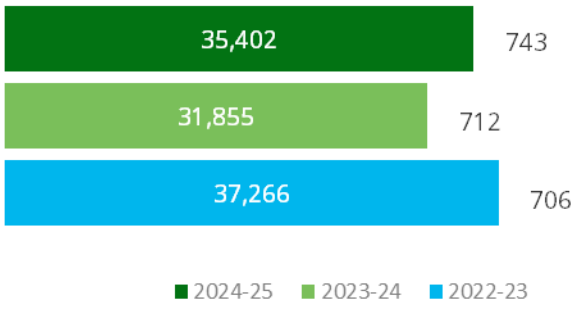


Advancing Health and Policy Benefits

For FY 2024-25, the number of clinical trials increased by 31 over FY 2023-24. See Figure 13 for number of clinical trials and total cumulative subject enrollment by fiscal year.

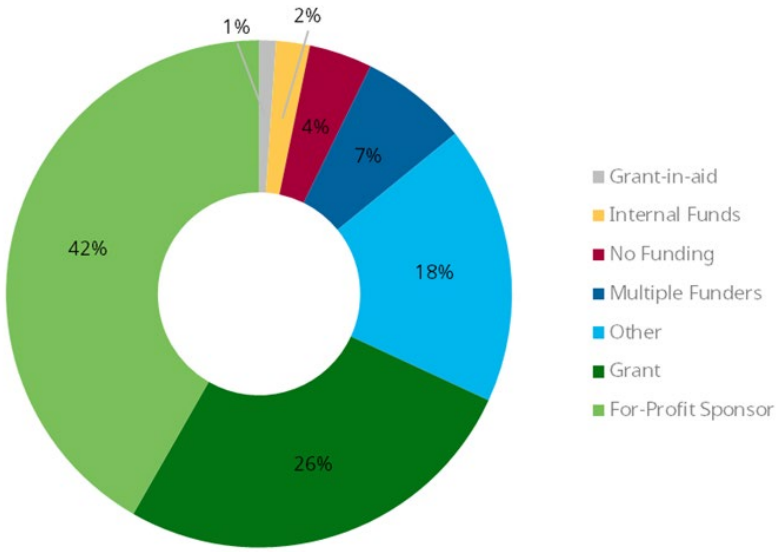
The opportunity to participate in clinical trials is an important metric because it offers patients the opportunity to participate in clinical evaluation of new drugs, many of which achieve therapeutic benefits beyond those offered by standard of care treatment. Clinical trials also represent the final step in the translational research continuum, which begins with basic or discovery research, includes development of products, and culminates with the testing of those products in rigorous trials.

FIGURE 13 Total Cumulative Subject Enrollment and Number of Clinical Trials by Fiscal Year



Grant funding type for clinical trials is sourced from the Research Ethics Board (REB) file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 69 for definitions of clinical trial funding types). The percentage of trials that are industry sponsored (for-profit sponsor) was 42% in FY 2024-25, slightly increased from 40% in FY 2023-24. The Other category includes clinical trials with no funding type or with funding types that cannot be classified into one of the other categories. See Figure 14 for a breakdown of trials by funding type percentage by category.

FIGURE 14 PHSA Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the Fiscal Year



In FY 2024-25, each program identified up to ten impacts that represent the breadth of research activity at their respective research institute over the fiscal year, driven by PHSA researchers, or in which PHSA researchers were key participants. Program specific outcomes can be found in each program section. Below is a list of the classification of benefits realized through research. Note that each outcome may have more than one benefit attributed to it. Patient and System benefits are outlined in the detailed outcomes tables of each program section.

Patient Benefit:	Delay of disease progression/survival Access to new treatment/technology Protocols and guidelines Improvements in timely access to care Other
System Benefit:	Process of care-standardization Process of care-protocol implementation Efficiency, cost/benefits or sustainability Knowledge dissemination-new policy Resource improvements-workforce Other

BC CANCER RESEARCH INSTITUTE (BCCRI)

Producing and Advancing Knowledge

In FY 2024-25, researchers affiliated with BCCRI were awarded a total of $115,094,831 in research funding which represents a 1.2% increase over FY 2023-24. Operating Grants represent 85.4% of total awards. A breakdown of funding types and subtypes can be found in Figures 15.

BCCRI's FY2024-25 Research Support Fund grant allocation of $1,156,945 is excluded from total research funding and related figures below.

FIGURE 15 Total BCCRI Research Funding by Funding Type and Sub-Type by Fiscal Year

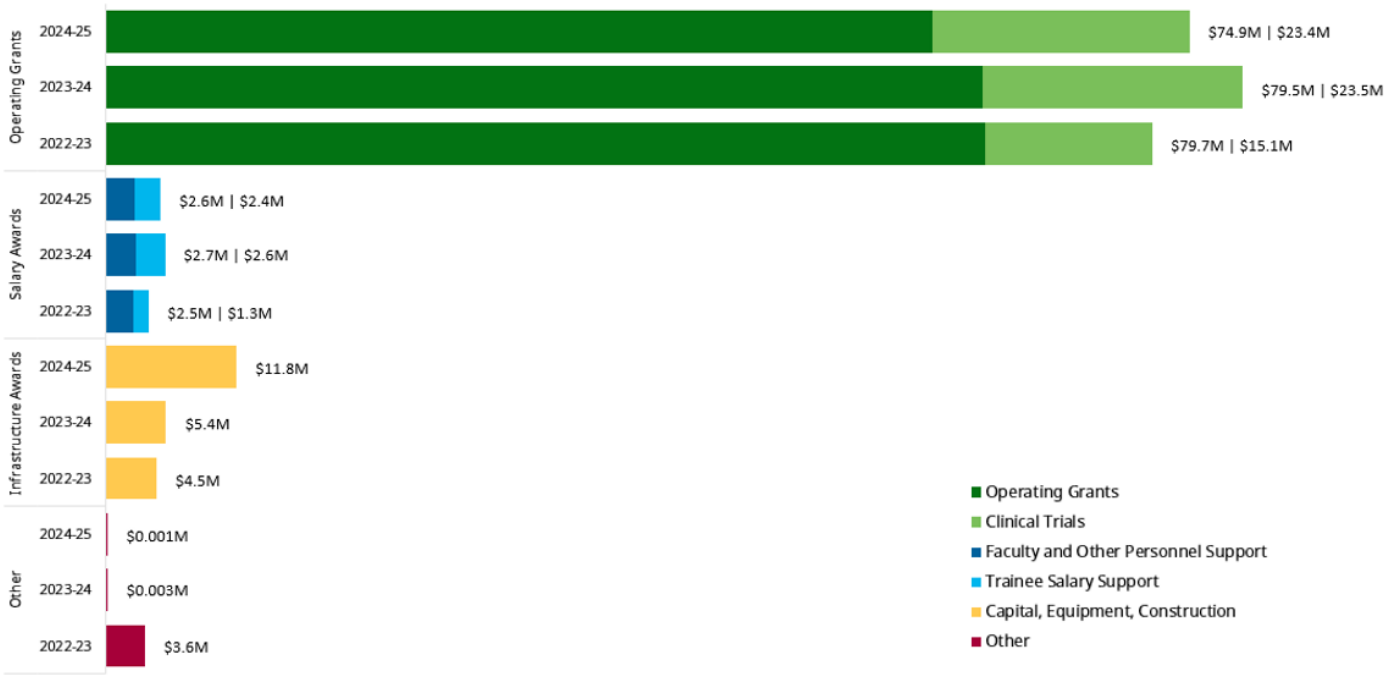
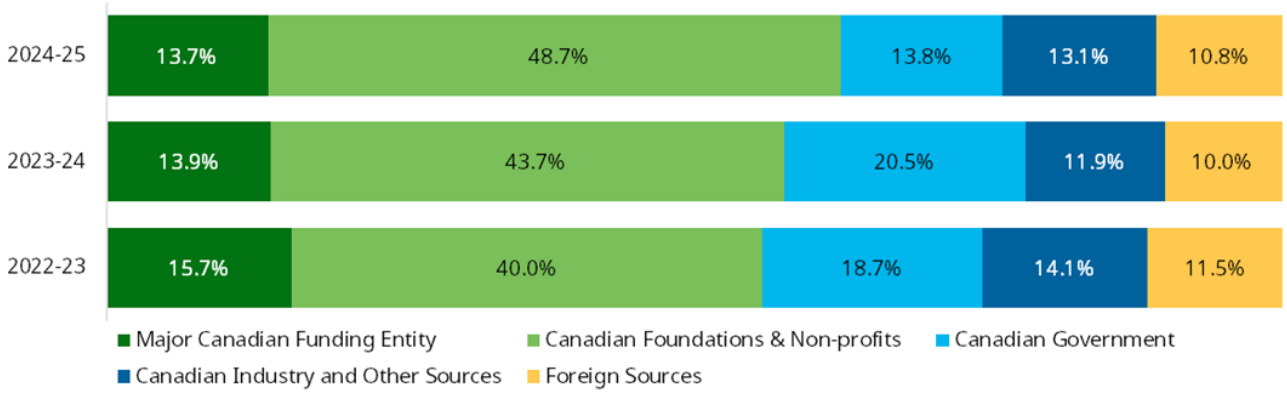


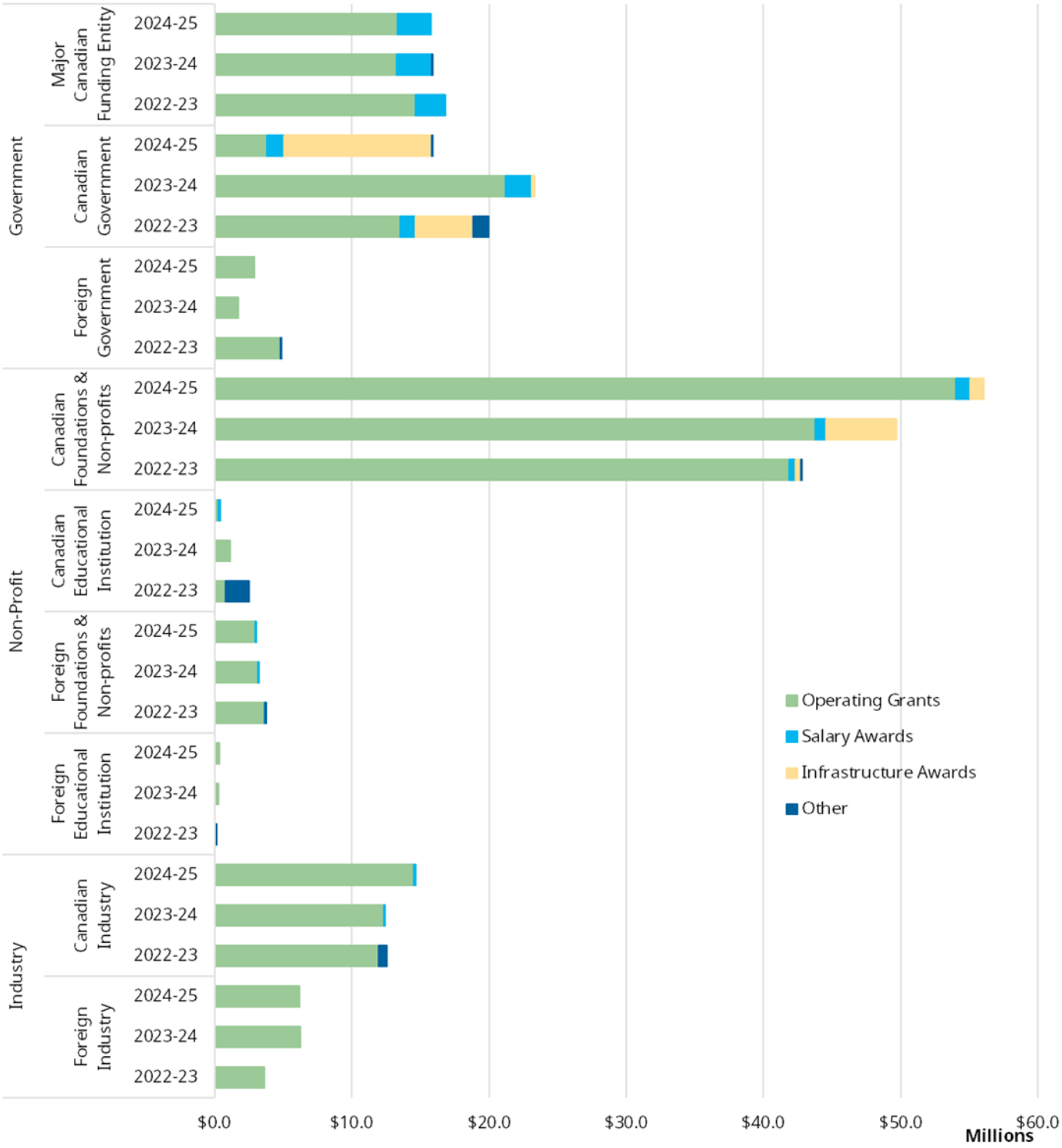
Figure 16 shows the percentage of funding by funding source category for the past three fiscal years. The Major Canadian Funding Entity category includes Canadian Institutes of Health Research (CIHR), Genome Canada and Genome British Columbia, Michael Smith Health Research BC (MSHRBC), and the Natural Sciences & Engineering Research Council (NSERC). While there have been fluctuation between categories, Canadian sources of funding have remained approximately 90% of total funding each year. Canadian Foundations & Non-profits saw the largest percentage increase from the previous fiscal year.

FIGURE 16 Percentage of BCCRI Research Funding by Funding Source Category by Fiscal Year



BCCRI's Total Award Funding is shown by RISe sector, Funding Source Category and Funding Type. In FY 2024-25, the top funding sources are Canadian Foundations & Non-profits (48.7%), Canadian Government (13.8%), and Major Canadian Funding Entities (13.7%). Figure 17 details the funding categories by RISe sector, funding source category and funding type.

FIGURE 17 BCCRI Research Funding by RISe Sector, Funding Source Category and Type by Fiscal Year



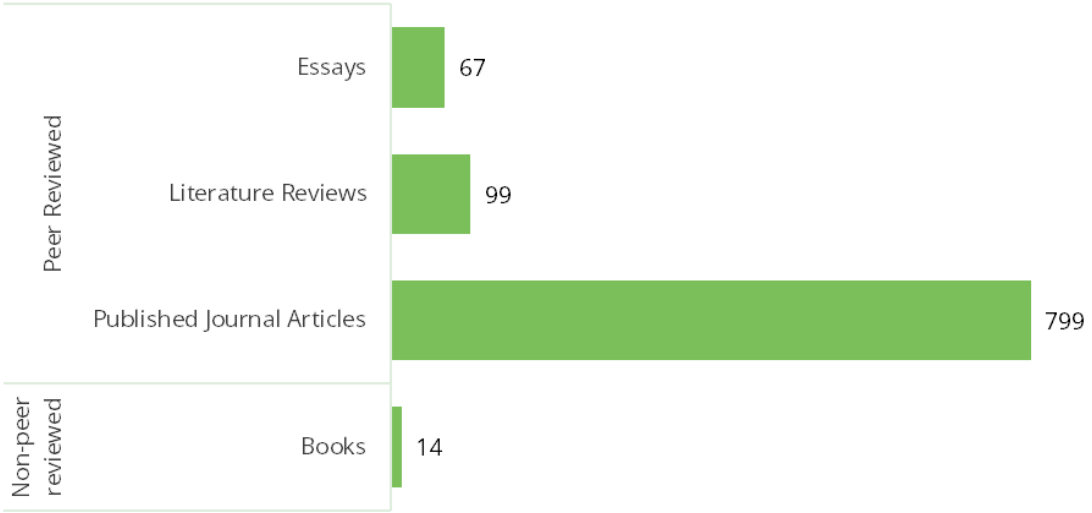
The application success rate is reported for the Fall 2024 and Spring 2025 CIHR grant competitions. Results (see Table 4) are shown for National and BCCRI. BCCRI was successful in both competitions, for a total of 9 awards from 54 applications.

TABLE 4 BCCRI Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	BCCRI Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	12.5% (3/24)
2025-03 Project Grant	15.5% (435/2814)	20.0% (6/30)

Total number of publications by type and category of peer vs. non-peer review is seen in Figure 18. BCCRI had a total of 979 publications, with a majority (799) of published journal articles.

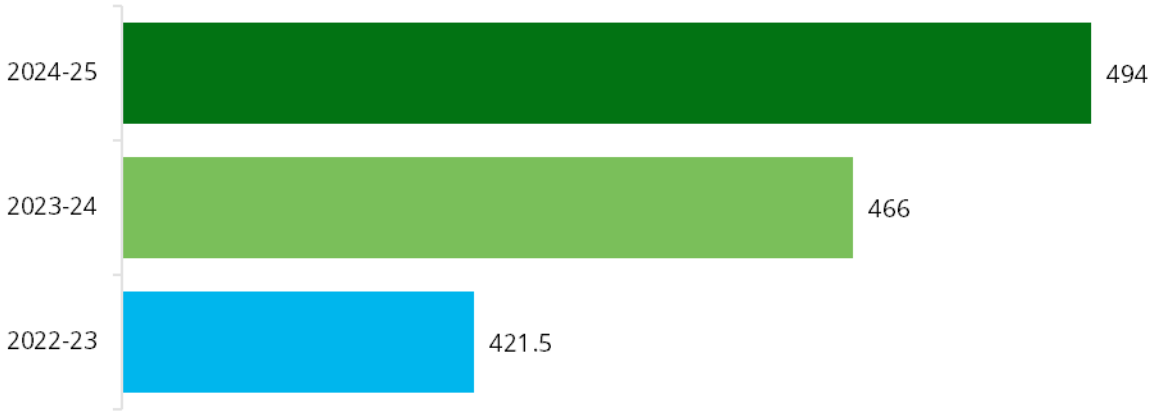
FIGURE 18 Total Number of BCCRI Publications by Type and Category



Building Research Capacity

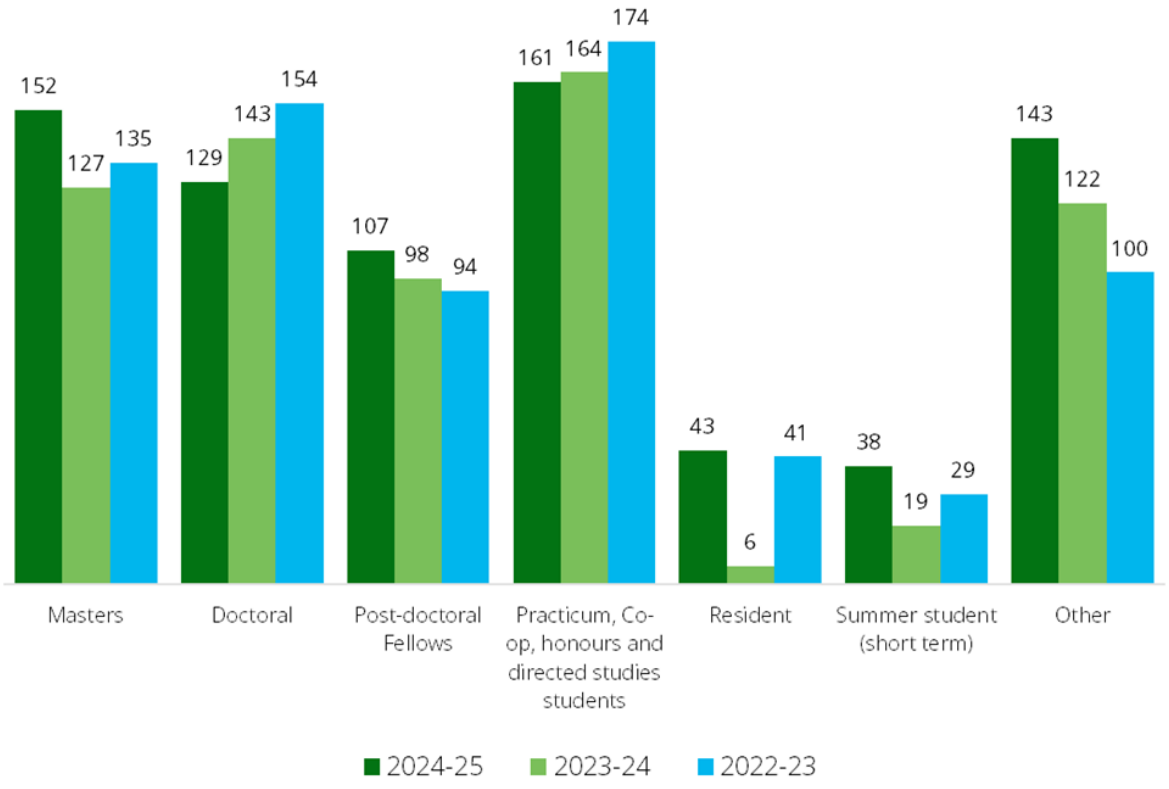
BCCRI had a total of 494 researchers in FY 2024-25, an increase of 28 from FY 2023-24. As in past year's reports, researchers whose funding is officially split 50/50 between research institutes are classified as 0.5. See Figure 19 for the number of BCCRI researchers by fiscal year, including affiliate investigators.

FIGURE 19 Total Number of BCCRI Researchers by Fiscal Year



During FY 2024-25, BCCRI researchers provided training and supervision to a total of 773 trainees, an increase of 94 from FY 2023-24. See Figure 20 for the number of trainees by type. Factors influencing the number of trainees include but are not limited to, operating grant success rates, whether trainees can obtain fellowships to secure their own funding, how often trainee competitions are held, and the envelope of funding. Senior researchers with established reputations and/or larger research portfolios have the capacity to mentor more trainees as compared to early-career researchers who are building their programs.

FIGURE 20 Total Number of BCCRI Trainees by Type and Fiscal Year



Achieving Economic Benefits and Innovation

Patent activity has remained relatively stable over the last five fiscal years (see Figures 21 & 22). Invention disclosures are primarily internal BCCRI documents, filed with the Technology Development Office (TDO) to inform the decision of whether to proceed with the patent process. The next stage in the patent process is to file provisional patent applications followed by patent cooperative treaties, or PCTs, which act as a gateway to world-wide patents. National patent applications are then filed with each step involving greater specificity.

FIGURE 21 BCCRI Invention Disclosures, Provisional Patent and PCT Applications by Fiscal Year

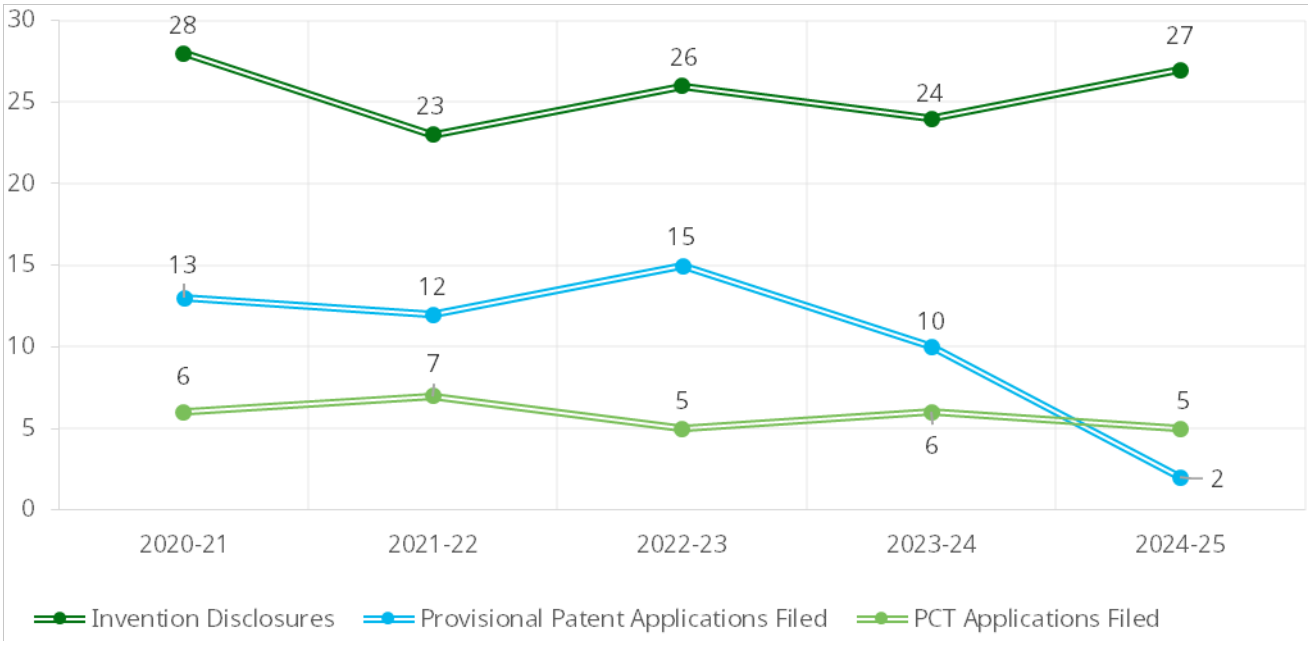
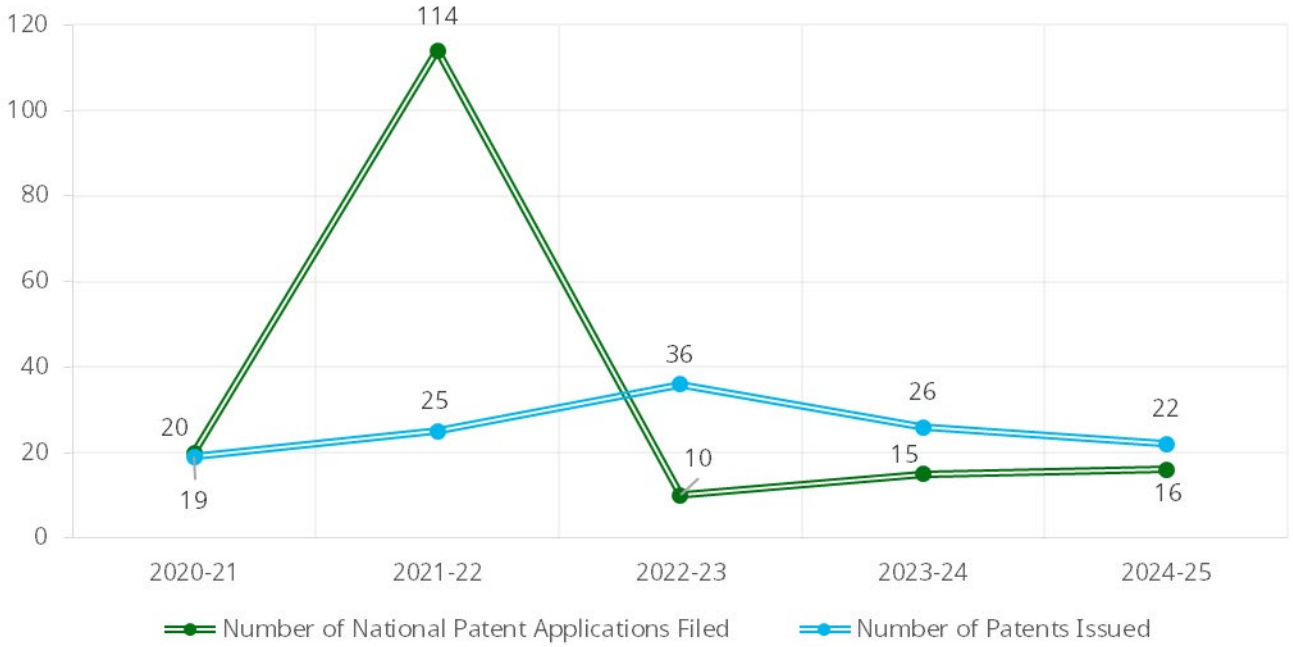


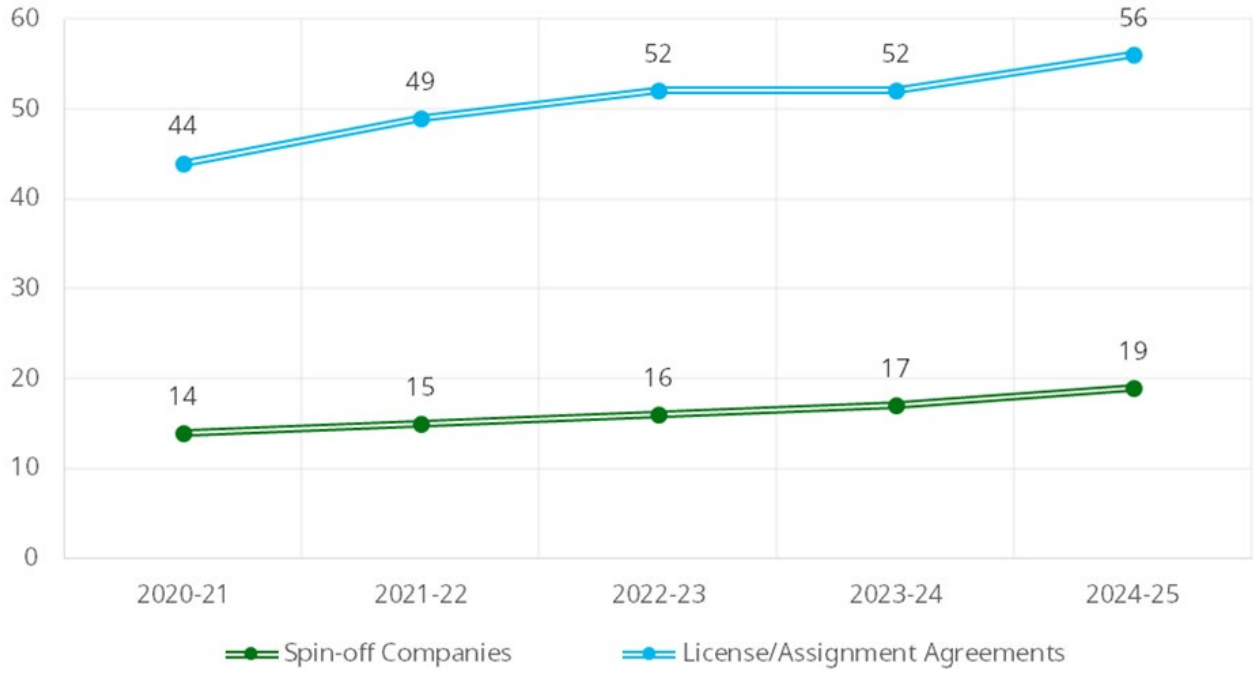
FIGURE 22 BCCRI National Provisional Patent Applications Filed and Issued by Fiscal Year



In FY 2024-25, there were 56 active license agreements (see Figure 23), including four new licenses/assignment agreements. There were two new spin-off companies created: Ascinta Technologies and Immfinity Biotechnologies. Ascinta Technologies develops solutions to enable personalized and accessible radiopharmaceutical therapies, and Immfinity Biotechnologies' platform supports the development of immunotherapies to achieve clinical success.

Other active spin-off companies include Alpha9 Theranostics, Innovakine Therapeutics, Incisive Genetics, Amphoraxe Life Sciences, Overture Therapeutics, Arrowsmith Genetics, and more.

FIGURE 23 BCCRI License Agreements and Spin-Off Companies by Fiscal Year



Intellectual Property (IP) related revenue, in accordance with UBC University Industry Liaison Office (UILO) definitions (see Glossary – Appendix 1, page 68) is reported in Table 5. Expenses related to patenting, license IP and legal costs totalled $384,122.56 in FY 2024-25. Realized licensing revenue per the distribution agreements totalled $504,526.18 with $336,328.98 to PHSA and $168,197.20 to BC Cancer departments. While distribution agreements vary, typically the inventor receives 50% of the net licensing revenue, with the remainder split between PHSA, BC Cancer departments, and UBC for those researchers with a UBC affiliation.

TABLE 5 TDO IP Related Revenue

IP RELATED REVENUE	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Royalties	$1,701,269.06	$1,136,802.24	$833,316.63	$1,025,409.71	$1,139,126.27
Equity Liquidated	$123,470.15	$1,722,742.51	-	$38,750.00	$2,403,253.09
License Fees	$956,452.72	$90,371.75	$1,105,445.56	$326,229.00	$281,425.91
License Management	$217,182.20	$214,581.56	$281,283.99		$13,837.08
Option Fees	-	-	-	-	-
Technology Assignment	-	-	-		-
GROSS LICENSING REVENUE (TOTAL)	**$2,998,374.13**	**$3,164,498.06**	**$2,220,046.18**	**$1,390,388.71**	**$3,837,642.35**

Advancing Health and Policy Benefits

See Table 6 for a detailed breakdown of BCCRI clinical trial activity by fiscal year.

TABLE 6 BCCRI Clinical Trials

	FY 2022-23	FY 2023-24	FY 2024-25
Total Number of Clinical Trials Active during the FY	378	388	447
Status of the Trial at the end of the FY:			
Total Number of Approved Trials	288	286	342
Total Number of Trials that closed during the FY	90	102	105
Enrollment Numbers:			
Expected Local Subject Enrollment for the study term	27,062	23,784	32,965
Total Cumulative Subject Enrollment at the end of the FY	8,821	8,762	11,945

Grant funding type is reported for clinical trials in Figure 24. This information is sourced from the REB file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 69 for definitions of clinical trial funding types). This information is used to trend the percentage of trials that are industry sponsored. 50% of BCCRI Clinical Trials are industry funded.

FIGURE 24 BCCRI Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the Fiscal Year

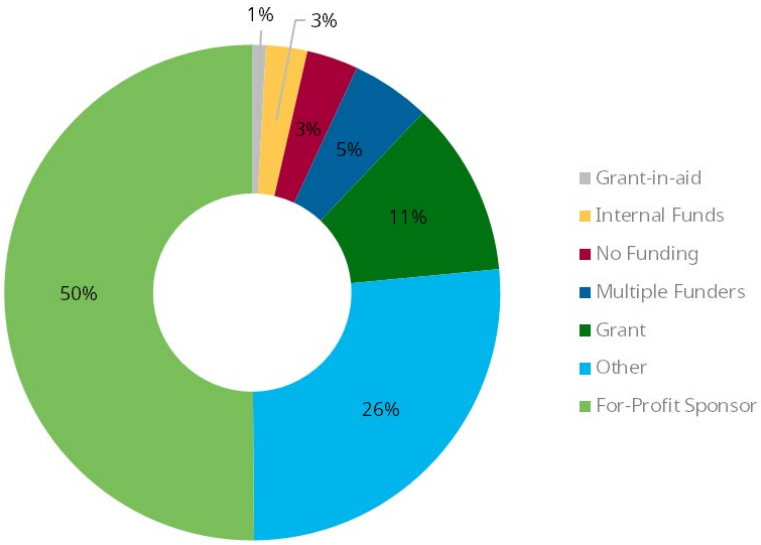


Table 7 reflects BCCRI's highlighted impacts that represent the breadth of research activity over the FY 2024-25 timeframe (Apil 1, 2024 – March 31, 2025).

TABLE 7 BCCRI Research Outcomes

BC Cancer Research Institute (BCCRI) – Research Outcomes
First systemic therapy patient enrolled in a clinical trial in Prince George **Classification:** Patient – Access to new treatment/technology The clinical trials unit at BC Cancer – Prince George opened a new clinical trial called CIRCULATE-NORTH-AMERICA, or CRC10, which marked the first time a systemic therapy clinical trial had been offered in northern BC to people with cancer. CRC10 uses a blood test to examine the presence of circulating tumour DNA (ctDNA), which is fragmented DNA shed from cancer cells into the bloodstream, after surgery for stage II and III colon cancer. In the trial, ctDNA detection determines if a patient receives further treatment with chemotherapy or starts observation with close monitoring. CRC10 was first offered in BC to patients in Vancouver and expanded to Prince George through a decentralized clinical trial model. Victoria has also started enrolling patients in CRC10 as part of their clinical trials portfolio.
First Indigenous Cultural Safety lead for clinical trials in BC **Classification:** System – Resource improvements-workforce The first Indigenous Cultural Safety Lead for clinical trials in BC was hired in Prince George in 2024 to begin to address the need for Indigenous cultural safety in cancer clinical trials and to build trust with Indigenous communities in northern BC. The Indigenous Cultural Safety Lead has engaged two leadership circles, representing several communities in the northwest coast and north central regions of BC, to start building meaningful relationships with local Indigenous communities. Ongoing elements of this work include leading a multi-phased Indigenous cultural safety and research strategy involving an environmental scan, content analysis and community engagement approach to address accessibility and other barriers to receiving care; developing a framework for Indigenous cultural safety in clinical trials and supporting staff to begin engaging with Indigenous communities; and leading workshops on the safety and accessibility of clinical trials, as well as supporting staff with follow-up resources and certifications.
The establishment of the BC Cancer BioCancer Program as a harmonized provincial biospecimen consenting, collection, processing, storage and distribution platform **Classification:** System – Efficiency, cost/benefits or sustainability The BC Cancer BioCancer Program was established as a centralized, province-wide biospecimen research framework to support clinicians and researchers across the province to collect and use biological samples – such as blood, urine, cerebrospinal fluid and tissue – to advance cancer research. The program bridges the gap between clinical and translational research, aligning with BC's 10-year Cancer Action Plan to improve cancer detection, prevention and personalized medicine in BC. The platform benefits research through enabling the acquisition of high-quality biospecimens from eligible patients within the research context. A core element of the program is the Clinical Acquisition and Sample Administration (CASA) lab with supporting freezer infrastructure. These facilities provide researchers with centralized support for the collection, sample processing and storage. By establishing this seamless infrastructure, the program confirms to the highest ethical standards to support the advancement of population-based, translational research through high-quality biospecimens from BC Cancer patients.

Strengthening clinical nursing leadership: A provincial policy framework for clinical nurse specialist (CNS) integration

Classification:
Patient – Access to new treatment/technology

Amid growing health workforce strain and uneven access to advanced nursing leadership, a BC Cancer-led research initiative produced the first province-wide, evidence-based policy framework to guide clinical nurse specialist (CNS) integration in British Columbia.

Led by a BC Cancer clinical nurse scientist in collaboration with UBC and funded by CIHR, the study generated BC-specific evidence to inform strategic workforce planning and policy development. The resulting recommendations were co-developed with and endorsed by all BC health authority Chief Nursing Officers and the Ministry of Health. The recommendations now guide role alignment, onboarding, and evaluation across the system.

This work has gained national attention as a reference model for other provinces with invitations to present to federal advisory bodies and health ministries across Canada.

Predicting which patients with cancer will see a psychiatrist or counsellor from their initial oncology consultation document using natural language processing

Classification:
Patient – Improvements in timely access to care

Patients with cancer often need support for their mental health. Early detection of who requires referral to a counsellor or psychiatrist may improve their care.

A BC Cancer-led study trained a type of artificial intelligence (AI) called natural language processing (NLP) to read the consultation report an oncologist writes after they first see a patient to predict which patients will see a counsellor or psychiatrist. The AI predicted this with performance similar to other uses of AI in mental health, and used different words and phrases to predict who would see a psychiatrist compared to seeing a counsellor.

This is believed to be the first use of AI to predict mental health outcomes from medical documents written by clinicians outside of mental health. This study suggests this type of AI can predict the mental health needs of patients with cancer from this widely-available document.

Study shows HPV primary screening to be key in eliminating cervical cancer

Classification:
Patient – Delay of disease progression/survival

A modelling study led by BC Cancer researchers found that HPV-based screening at current vaccination, participation and follow-up rates can eliminate cervical cancer by 2034. The study showed that increasing on-time screening and follow-up compliance could achieve the target by 2031.

The research team found that screening for high-risk HPV infection is more effective than cytology screening (Pap testing) to identify cervical pre-cancer, as HPV primary screening has a lower false negative rate than cytology and detects cervical pre-cancer earlier and better than cytology.

The paper's findings coincided with the rollout in BC of HPV primary screening for cervical cancer, featuring the option for self-screening at home – the first such program in Canada.

The findings underscore the need for comprehensive strategies that prioritize access to screening and early detection, noting that adopting HPV primary screening can potentially increase uptake in under-screened or never-screened populations through vaginal self-collection of samples.

The development of a roadmap for individualized malignant prostate cancer care

Classification:
Patient – Access to new treatment/technology

BC Cancer researchers were the first to identify that the complexity of cancer cells within the prostate itself may play a greater role in tumour spread than previously understood – especially in patients with de novo metastatic prostate cancer, where the disease has already reached distant parts of the body when diagnosed.

By analyzing tissue and blood samples, the team uncovered a diverse pool of cancer cells within individual prostates. This complexity can fuel multiple waves of cancer that spreads throughout the body. These findings also point to potential sources of resistance to treatment.

The research analyzed full prostates, providing an unprecedented opportunity to trace how prostate cancer evolves and spreads. The result is a detailed roadmap of cancer progression that could inform the development of more personalized treatment strategies for prostate cancer and other aggressive cancers.

These insights mark an important step toward more precise, individualized cancer care.

The discovery of a promising drug that could prevent the spread of childhood bone cancer

Classification:
Patient – Access to new treatment/technology

BC Cancer researchers have identified a promising drug that could significantly reduce the metastatic spread of osteosarcoma, the most common bone cancer in children and teenagers.

The researchers demonstrated that a new drug, CR-1-31B, can reduce lung metastasis in mice by over 90 per cent, while also shrinking the primary tumour site. The drug, known as an eIF4A1 inhibitor, blocks the ability of osteosarcoma cells to protect themselves and survive when they are exposed to the lung's harsh microenvironment.

As part of the study, the researchers found that a subpopulation of osteosarcoma cells are able to survive within the lung by producing a protein, NRF2, that acts as a protective antioxidant. Notably, a second eIF4A1 inhibitor drug, called Zotatifin, also proved successful in halting lung metastasis and has already shown promise in early clinical trials for other conditions.

A new class of biomarker could better predict treatment outcomes for Hodgkin lymphoma

Classification:
Patient – Access to new treatment/technology

A study led by BC Cancer researchers identified a way to better predict treatment outcomes in patients with relapsed and treatment-resistant, classic Hodgkin lymphoma. The researchers discovered a new class of "spatial biomarkers" providing prognostic information about treatments used at the time point of cancer recurrence, after the initial treatment has failed. This new biomarker is significant as it sheds light on the unique interactions between cancer cells and the tumour microenvironment, which includes surrounding cells.

The team performed imaging mass cytometry on primary diagnostic and relapse biopsies to generate detailed analyses of each cell, before measuring the distance of the nearest cells to the cancer cells and used this spatial information in their prognostic models to predict patient outcomes.

The research team hopes this work will ultimately lead to the ability to profile a patient's tumour and recommend a suitable treatment based on this profile.

Using AI to target radiation more precisely in curative prostate patients with stereotactic ablative radiotherapy, a high-precision radiation therapy

Classification:
Patient – Access to new treatment/technology

Researchers at BC Cancer – Victoria and BC Cancer – Surrey collaborated on the cutting-edge ADAPT-25 clinical trial, which uses AI to test the efficacy of two doses of stereotactic ablative radiotherapy (SABR) on curative prostate patients, rather than the current five doses.

SABR is the standard of care for curative prostate patients in BC, delivering high doses of radiation to the tumour site while limiting radiation exposure to healthy tissues. This has resulted in a highly effective treatment with fewer side effects.

The custom AI algorithm used by the ADAPT-25 clinical trial helps target radiation even more precisely, allowing radiation technicians to adapt the treatment each day to match daily changes in the body.

The introduction of shorter, more effective radiation treatments combined with advanced imaging can increase patient access to care, reduce treatment burdens, and create more capacity within the health care system for timely prostate cancer treatment across BC.

BC CHILDREN'S HOSPITAL RESEARCH INSTITUTE (BCCHR)

Producing and Advancing Knowledge

In FY 2024-25, researchers affiliated with BCCHR were awarded a total of $147,665,932 in research funding, an increase of 93.0% from last fiscal year. Operating grants represent 42.2% of total funding received. A breakdown of funding types and subtypes can be found in Figure 25, and by funding source category in Figure 26.

BCCHR's FY 2024-25 portion of the Research Support Fund Program grant totalled $1,856,937, but is excluded from total research funding and figures below. Total COVID-19 related research funding was $2,646,705 and is included in the figures below.

FIGURE 25 Total BCCHR Research Funding by Funding Type and Sub-Type by Fiscal Year

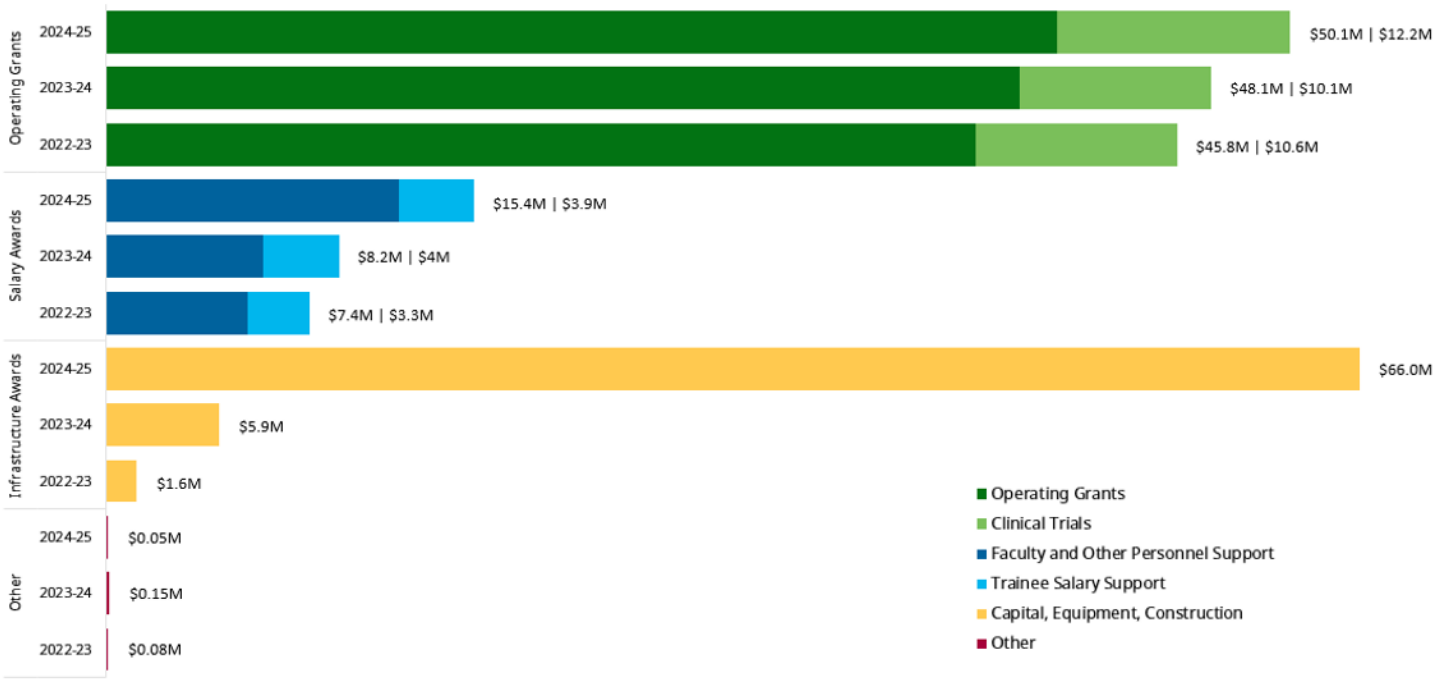
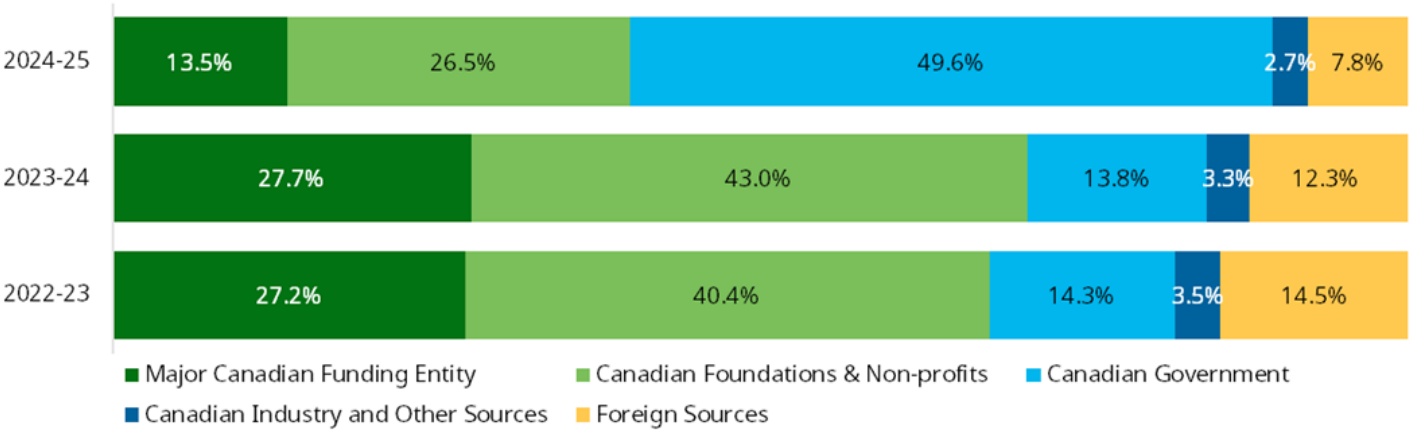
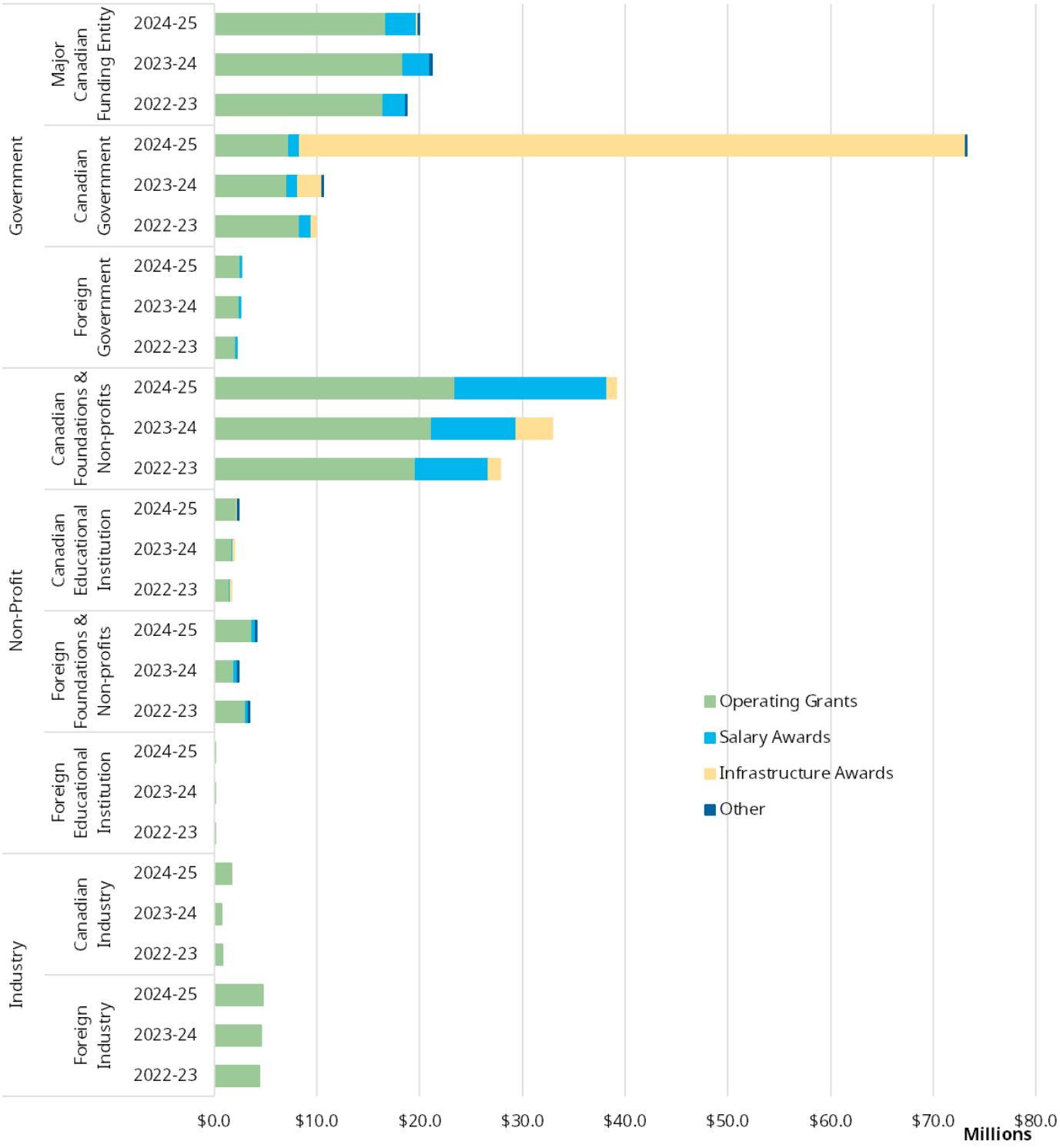


FIGURE 26 Percentage of BCCHR Research Funding by Funding Source Category by Fiscal Year



The top three funding categories are Canadian Government (49.6%), Canadian Foundations & Non-Profits (26.5%), and Major Canadian Funding Entity (13.5%). Figure 27 details the funding categories by RISe sector, funding source category and funding type.

FIGURE 27 BCCHR Research Funding by RISe Sector, Funding Source Category and Type by Fiscal Year



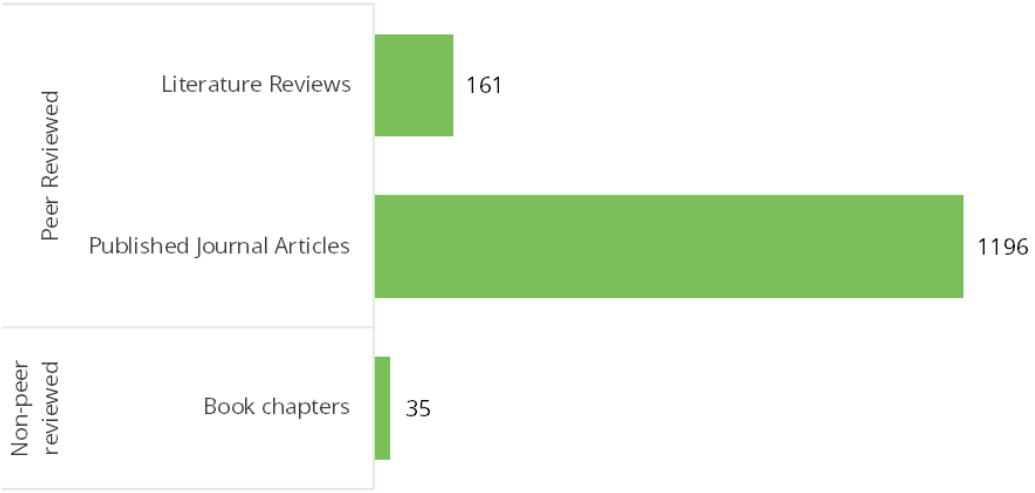
The application success rate is reported for the Fall 2024 and Spring 2025 CIHR grant competitions. Results are shown for National and BCCHR in Table 8. BCCHR was successful in both project grant competitions for a total of 18 awards out of 62 applications, exceeding the national average in both Project competitions.

TABLE 8 BCCHR Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	BCCHR Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	32.4% (11/34)
2025-03 Project Grant	15.5% (435/2814)	25.0% (7/28)

BCCHR had 1,392 publications in calendar year 2024, with 97.5% of them being peer reviewed. Total number of publications by type and category of peer vs. non-peer reviewed, is seen in Figure 28. Peer review represents the gold standard for scientific credibility. The program total represents the number of publications where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

FIGURE 28 Total Number of BCCHR Publications by Type and Category

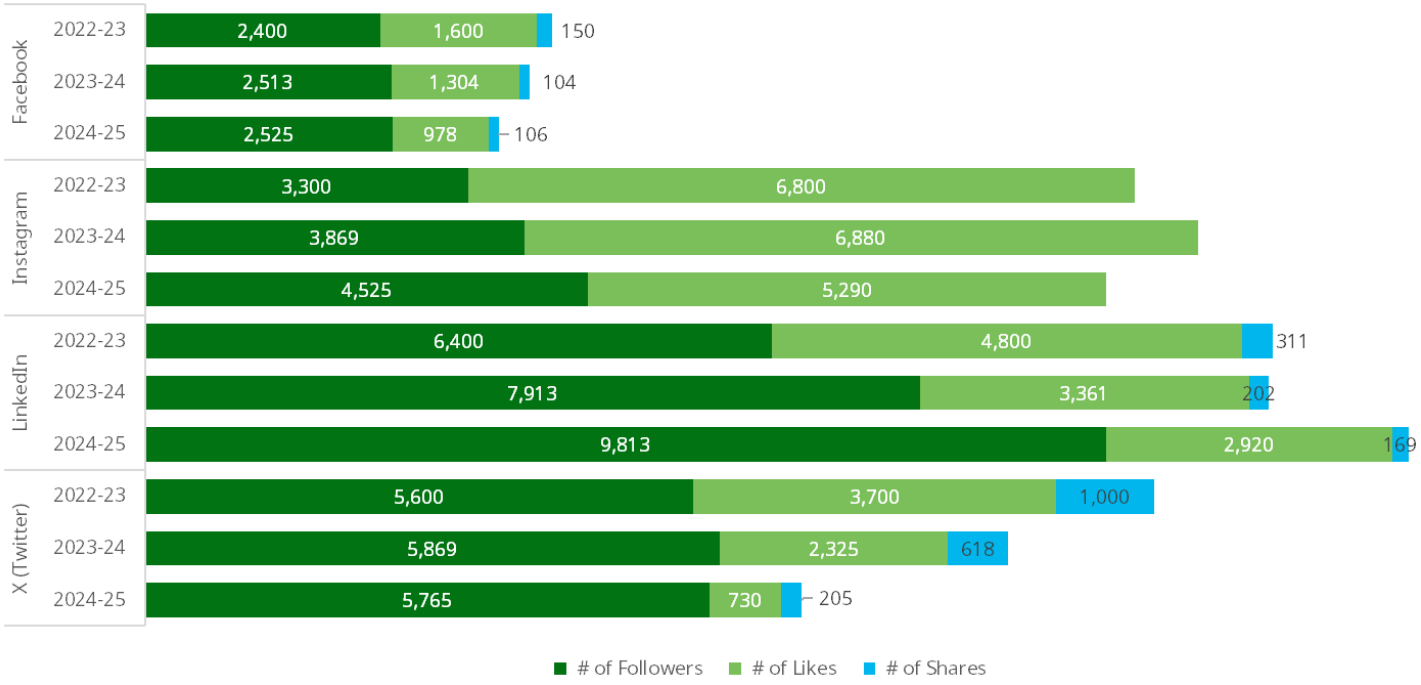


Three fiscal years' worth of data is provided for BCCHR's four research specific social media channels in Figure 29; Facebook (member since July 2011); X, formerly known as Twitter (member from March 2009 – January 2025); Instagram (member since January 2018); and LinkedIn (member since 2015). Tracking and reporting of this data is a measure of knowledge translation, in addition to meeting the following goals with regard to BCCHR research activities:

- To increase online visibility of and traffic to the BCCHR website
- To have the BCCHR audience complete a specific ask, such as sign up for newsletters, request information about a study, donate to research
- To further disseminate knowledge that's produced at BCCHR to the public, to BCCHR PIs and trainees, and to colleagues at BCCHF, BCCH and PHSA
- To engage and connect internal audiences, including researchers and students

These metrics are a measure of reach and engagement and provide an indication of the volume of activity. In addition to the below activity, many BCCHR researchers maintain their own professional accounts to engage peers, funders, and patients, but this information is not tracked.

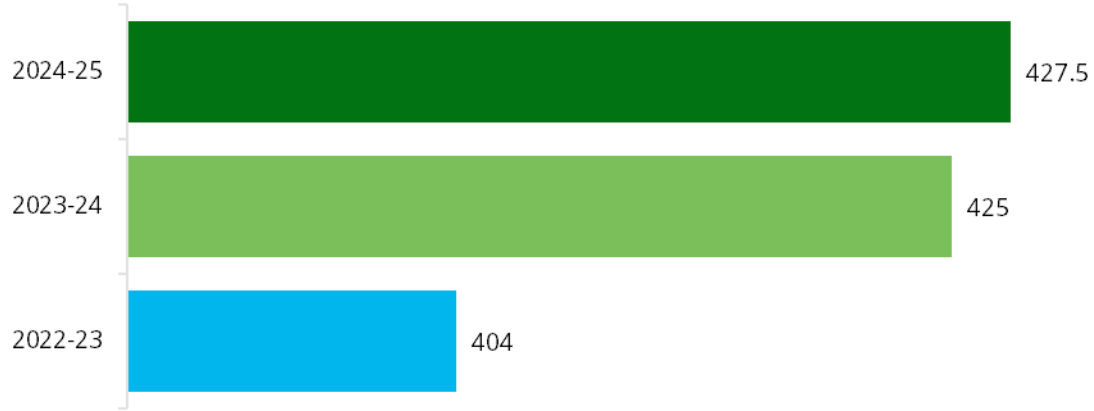
FIGURE 29 BCCHR Social Media Statistics



Building Research Capacity

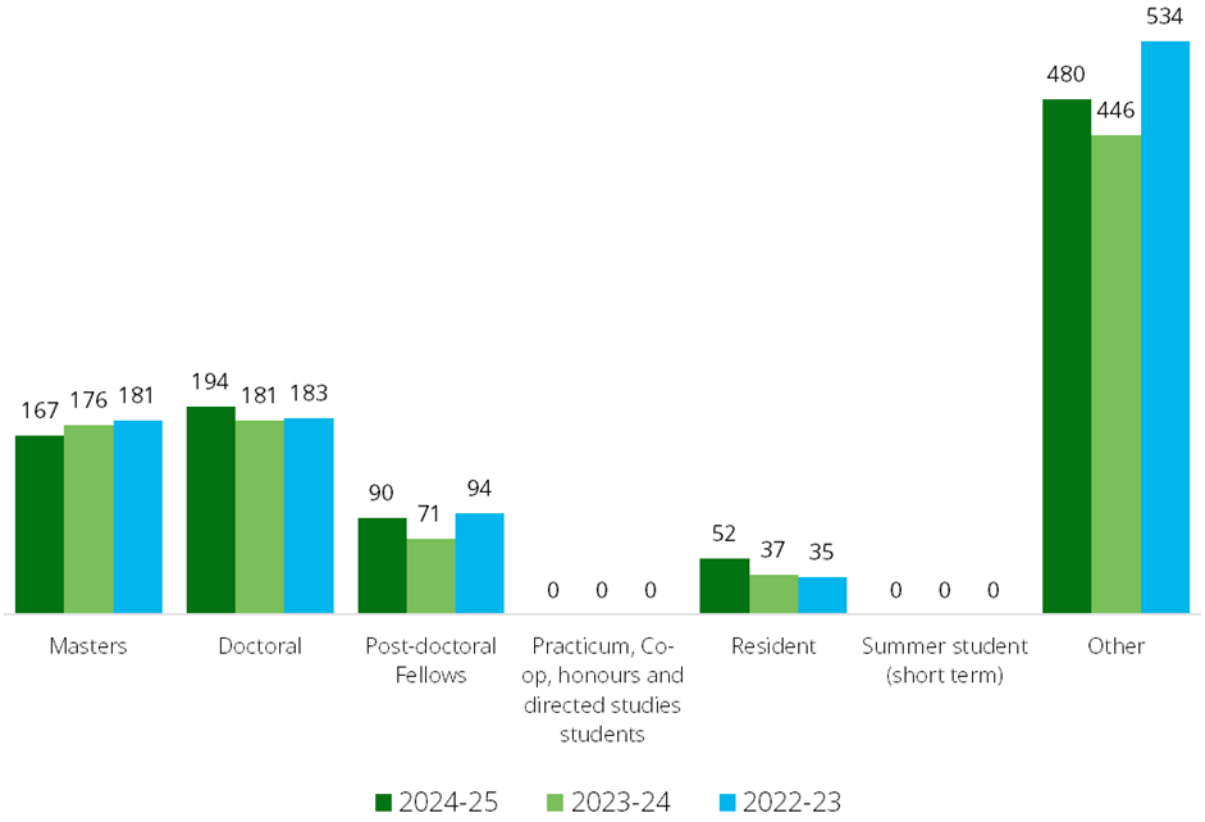
BCCHR had a total of 427.5 researchers in FY 2024-25. These researchers include those primarily based on the Children's & Women's Oak Street campus, as well as affiliate investigators that are not based on site, but who collaborate with BCCHR members and are affiliated with a Research Theme. These numbers exclude emeritus/emerita investigators who have prior status as investigators with BCCHR. See Figure 30 for the number of BCCHR researchers by fiscal year.

FIGURE 30 Total Number of BCCHR Researchers by Fiscal Year



During FY 2024-25, BCCHR researchers provided training and supervision to a total of 983 trainees, an increase of 72 trainees from FY 2023-24. See Figure 31 for number of trainees by type. BCCHR currently tracks full-time research trainees (masters, doctoral and post-doctoral fellows) and undergraduate students undertaking their training at BCCHR.

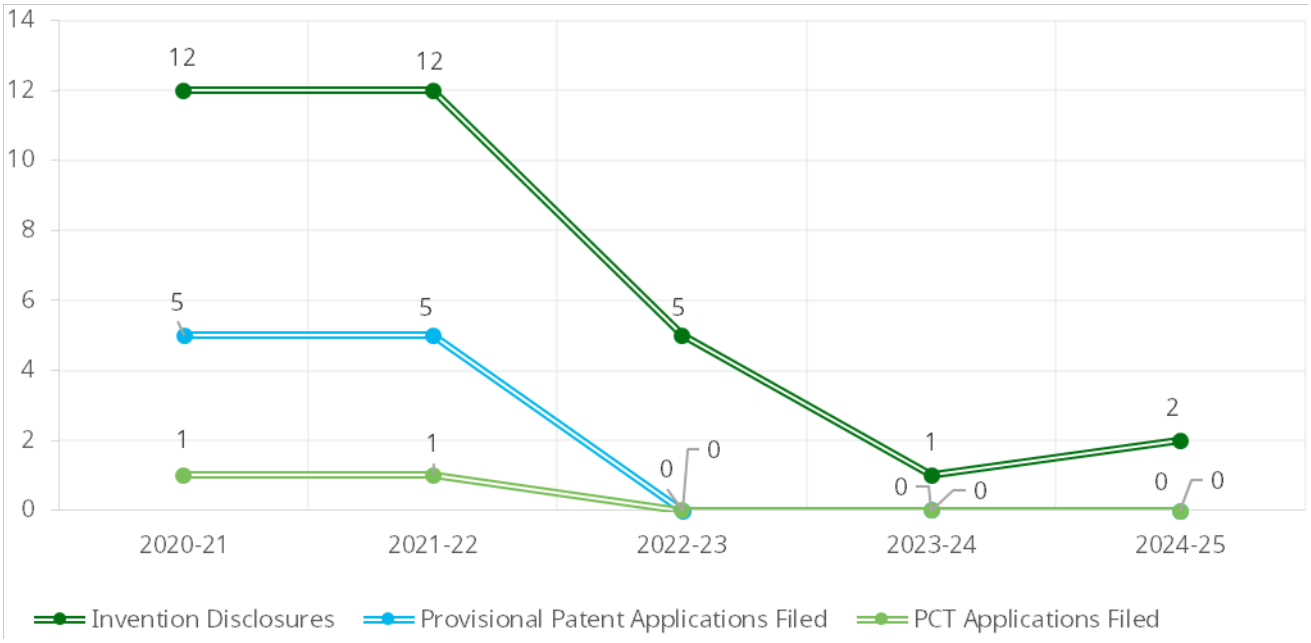
FIGURE 31 Total Number of BCCHR Trainees by Type and Fiscal Year



Achieving Economic Benefits and Innovation

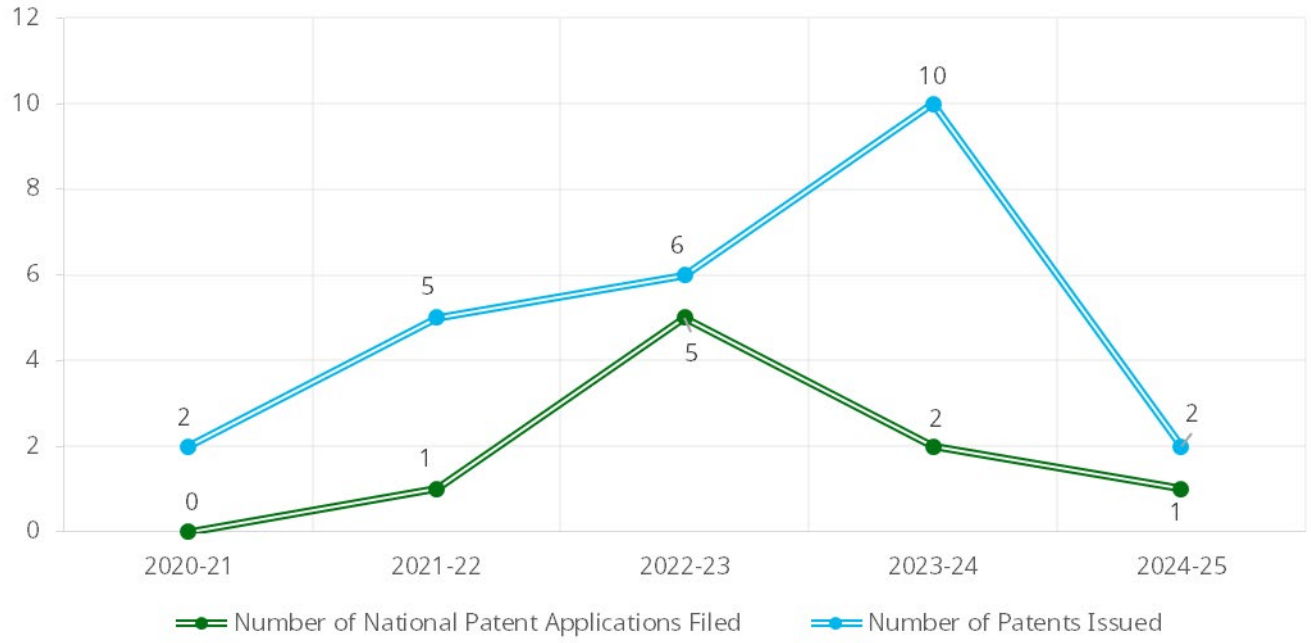
The number of invention disclosures, provisional patent and PCT applications filed by fiscal year are shown in Figure 32.

FIGURE 32 BCCHR Invention Disclosures, Provisional Patent and PCT Applications by Fiscal Year



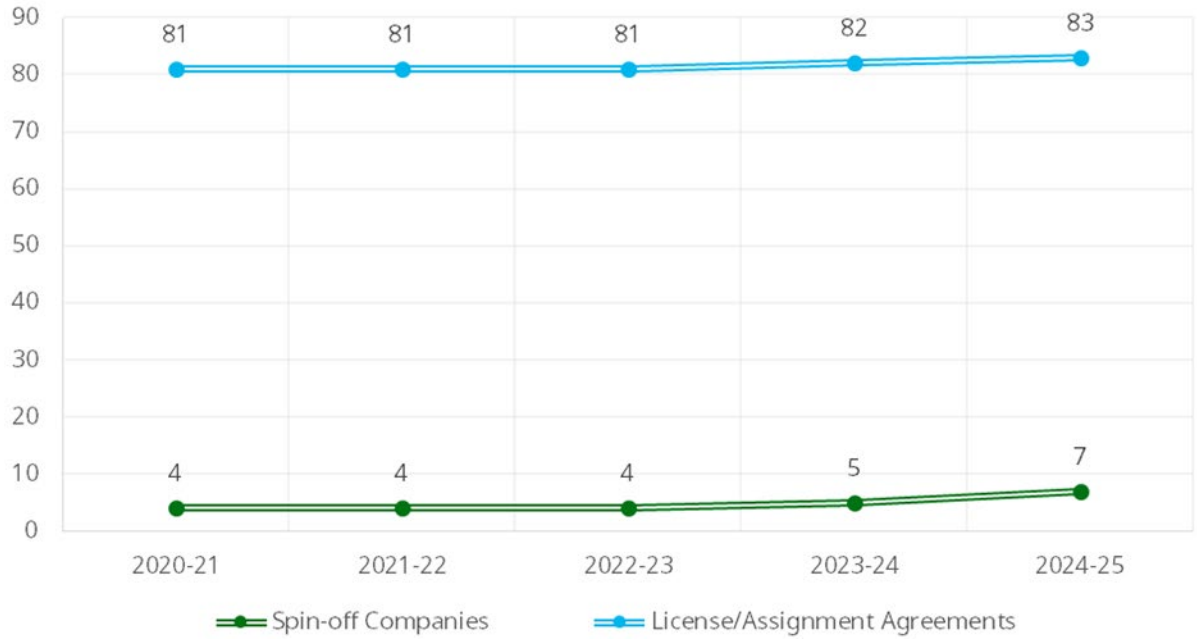
Patent activity is reported in Figure 33 below. Applications filed in a given year represent different applications than those which are approved in that same year and are typically the result of applications in previous years. Data is collected and reported by UBC University Industry Liaison Office (UILO).

FIGURE 33 BCCHR National Provisional Patent Applications Filed and Issued by Fiscal Year



In FY 2024-25, there were 83 active license/assignment agreements in place (See Figure 34). Two new spin-off company were attributed to BCCHR in FY 2024-25: Arrowsmith Genetics, and Amphoraxe Life Sciences. BCCHR holds shares in: Incisive Genetics, Lions Gate Technologies, ME Therapeutics, and more.

FIGURE 34 BCCHR License Agreements and Spin-Off Companies by Fiscal Year



IP related line-item revenue data for FY 2024-25 is shown below in Table 9. Expenses related to patenting, license IP and legal costs totalled $1,962.91 in FY 2024-25. Realized licensing revenue per the distribution agreements totalled $1,804,445.24 with $271,897.89 to PHSA.

TABLE 9 BCCHR IP Related Revenue

IP RELATED REVENUE	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Royalties	$727,424.30	$837,237.00	$283,716.00	$223,456.72	$931,165.41
Equity Liquidated	-	$331,104.00	-	-	-
License Fees	-	$101,705.00	$630,466.00	$781,476.43	$896,489.39
License Management	-	-	-	-	-
Option Fees	-	-	-	-	-
Technology Assignment	-	-	-	-	-
GROSS LICENSING REVENUE (TOTAL)	**$727,424.30**	**$1,270,046.00**	**$914,182.00**	**$1,004,933.15**	**$1,827,654.80**

Advancing Health and Policy Benefits

See Table 10 for a detailed breakdown of clinical trial activity by fiscal year.

TABLE 10 BCCHR Clinical Trials

	FY 2022-23	FY 2023-24	FY 2024-25
Total Number of Clinical Trials Active during the FY	248	243	235
Status of the Trial at the end of the FY:			
Total Number of Approved Trials	186	184	175
Total Number of Trials that closed during the FY	62	59	60
Enrollment Numbers:			
Expected Local Subject Enrollment for the study term	21,814	31,548	23,432
Total Cumulative Subject Enrollment at the end of the FY	17,667	13,980	11,981

Grant funding type is reported for clinical trials in Figure 35. 33% of BCCHR's clinical trials in FY 2024-25 were industry funded.

FIGURE 35 BCCHR Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the Fiscal Year

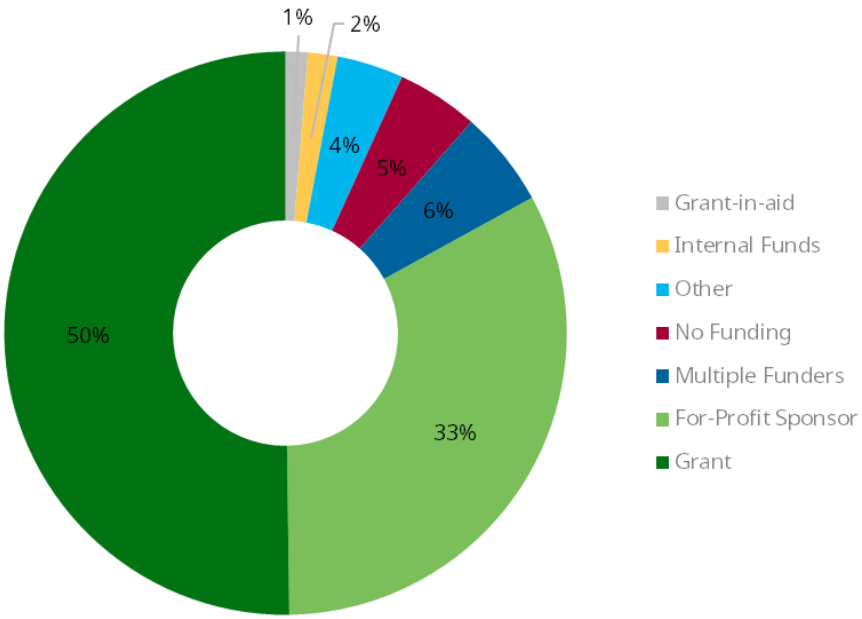


Table 11 reflects BCCHR's highlighted impacts that represent the breadth of research activity over the FY 2024-25 timeframe (Apil 1, 2024 – March 31, 2025).

TABLE 11 BCCHR Research Outcomes

BC Children's Hospital Research Institute (BCCHR) – Research Outcomes
Matching young cancer patients to the best treatments **Classification:** Patient – Delay of disease progression/survival BCCHR researchers with the Michael Cuccione Childhood Cancer Research Program and the BRAvE (Better Responses through Avatars and Evidence) Initiative developed a quick method to find personalized treatments for young cancer patients. The method goes beyond looking at the tumour's genes by also analyzing the proteins and then evaluating drug responses to the patient's cancer that has been grown on a fertilized chicken egg. For the first time earlier this year, this proteomics guided approach identified a treatment for a young cancer patient at BC Children's Hospital quickly enough to inform the patient's care.
Targeted treatment for inflammatory bowel diseases receives patent **Classification:** Patient – Access to new treatment/technology BCCHR researchers have developed a new drug delivery mechanism called GlycoCaging for treating inflammatory bowel diseases. The technology couples the drugs to a sugar "cage" that can only be broken down by bacteria in the lower gastrointestinal tract, allowing for more precise delivery of IBD drugs. Researchers have found that this method can reduce the dosage of drugs by 90 per cent while still achieving the same treatment results and eliminating off-target effects. A recent high-profile paper, demonstrated the effectiveness of the technique in animal models and the technology has received a patent.
A patient-driven tool to empower families to assess penicillin allergy risk **Classification:** System – Efficiency, cost/benefits or sustainability Dr. Tiffany Wong, Dr. John Jacob, and their team developed a patient-friendly tool to help families assess whether a reported penicillin allergy is likely to be true. Since most people who think they're allergic to penicillin are not, the team saw a need for an easy-to-use version of existing clinical tools that families could complete themselves. They tested the tool with children and pregnant people referred to the Allergy Clinics at BC Children's Hospital. In over two-thirds of cases, the patient tool matched allergist assessments, especially for those considered low risk — suggesting it is both safe and reasonably accurate. In most of the remaining cases, the tool was more cautious than the allergist. By supporting early self-assessment, the tool has the potential to empower patients to assess their risk and advocate for their care. It also allows families to have early education about penicillin allergies and may also increase the efficiency of health-care visits, reduce wait times for specialist assessments, and minimize the impact of personal bias in clinical decision-making. The latest version of the tool incorporates AI-powered video screening in English, Punjabi, and Mandarin to improve accessibility for diverse communities.
BCCHR mobile app could save lives around the world **Classification:** Patient – Improvements in timely access to care The Institute for Global Health (IGH) has developed the RRate app — a mobile application that measures breathing rate. Recent research investigated if health-care workers would obtain the same results if they repeatedly measured a child's breathing rate in a busy environment by using the app. Evidence shows that RRate is a better solution than other available devices.

Assessing risk of post-discharge mortality in Uganda: Using prediction models to save children's lives

Classification:
Patient – Protocols and guidelines

Researchers at BC Children's Hospital aimed to improve care for children with suspected sepsis by creating and testing tools to predict which patients are at high risk of dying after leaving the hospital. In many low-income countries, more than five per cent of children die after hospital discharge, but there is a lack of tools to help identify which children are most at risk.

The team developed several prediction tools using a wide range of patient information, making sure the models would be practical even in low-resource settings. These tools successfully identified high-risk children, allowing health-care providers to plan better care after discharge, such as follow-up visits or home support. By spotting at-risk children early, the models help guide more focused, life-saving care and improve outcomes for children in poorer settings.

Canada-wide study confirms safety of COVID-19 vaccines for children and adolescents

Classification:
System – Knowledge dissemination-new policy

BCCHR researchers conducted a large cohort study with the Canadian National Vaccine Safety Network (CANVAS) to investigate the short- and medium-term safety of mRNA COVID-19 vaccines in children and adolescents, with more than 1 million participants enrolled. The study aimed to profile adverse effects following each dose, and evaluate the link between vaccination and health-related events occurring within seven days.

The findings from this study contributed to a better understanding of mRNA COVID-19 vaccine safety in the pediatric population and provided critical evidence to inform policies and safety profiles of vaccines among children and adolescents. This research also offers valuable insights to patients, parents, and clinicians so that they know what to expect following vaccination and can make informed decisions by balancing the benefits and risks, particularly among adolescents. Continuous monitoring of vaccine safety, with separate evaluations for different age groups, is key.

New guidelines for young children receiving bone marrow transplants

Classification:
System – Process of care-standardization

To provide children who have signs of lung chronic graft-versus-host disease (cGvHD) with proper diagnosis and treatment, the 2014 National Institutes of Health (NIH) guidelines recommend a lung biopsy or a breathing test called spirometry, which measures how much and how fast kids can breathe in and out of their lungs. Spirometry requires a big forced breathing manoeuvre that is often hard for children, especially if they're feeling weak. BCCHR researchers investigated the utility of the multiple breath washout (MBW) test and addressed some of the limitations in the NIH guidelines. There's evidence that MBW is feasible, sensitive, and specific for the diagnosis of cGvHD in younger children, and this test is especially useful for kids who can't perform spirometry. The findings led to discussions with international experts in the field and played a part in integrating MBW into recent recommendations to screen for lung cGvHD**.**

New diagnostic and risk assessment tool for chronic graft vs host disease

Classification:
Patient – Access to new treatment/technology

To help diagnose and predict chronic Graft vs Host disease more accurately and more quickly, Dr. Kirk Schultz used a machine learning based model combined with data from pediatric patients to develop blood-based panels of biomarkers that can either diagnose cGVHD or determine the risk a patient has of developing cGVHD in the future. These panels of biomarkers can help minimize the impact of cGVHD. The risk assignment algorithm can identify high- or low-risk patients before the onset of the disease and is currently planned for use in the first biomarker-based pre-emptive trial ever done in children or adults. The diagnostic panel can help by providing a more definitive diagnosis, allowing for therapy to begin earlier and potentially avoiding irreversible damage.

WOMEN'S HEALTH RESEARCH INSTITUTE (WHRI)

WOMEN'S HEALTH RESEARCH INSTITUTE AT BC WOMEN'S

Producing and Advancing Knowledge

In FY 2024-25, researchers affiliated with WHRI were awarded a total of $3,977,293 in research funding, which represents a 62.1% decrease from last year. The amount awarded as Operating Grants makes up 73.8% of total awards. A breakdown of funding types and subtypes can be found in Figure 36, and by funding source category in Figure 37.

WHRI's portion of the Research Support Fund Program grant totalled $447,831 for FY 2024-25, but is excluded from total research funding and the figures below. WHRI shares investigators with a number of other health research institutes and universities, and benefits from additional external grant revenues linked to these investigators. Total COVID-19 related research funding was $21,250 and is included in the figures below.

FIGURE 36 Total WHRI Research Funding by Funding Type and Sub-Type by Fiscal Year

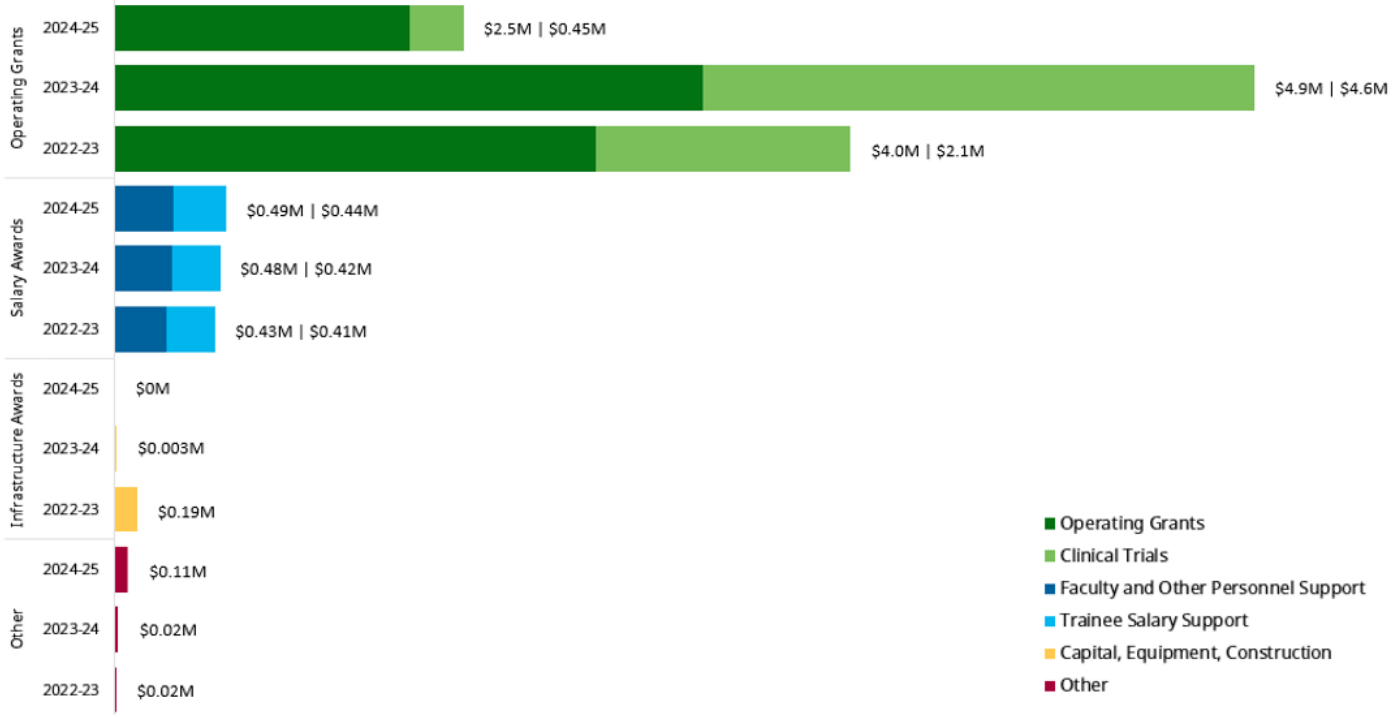
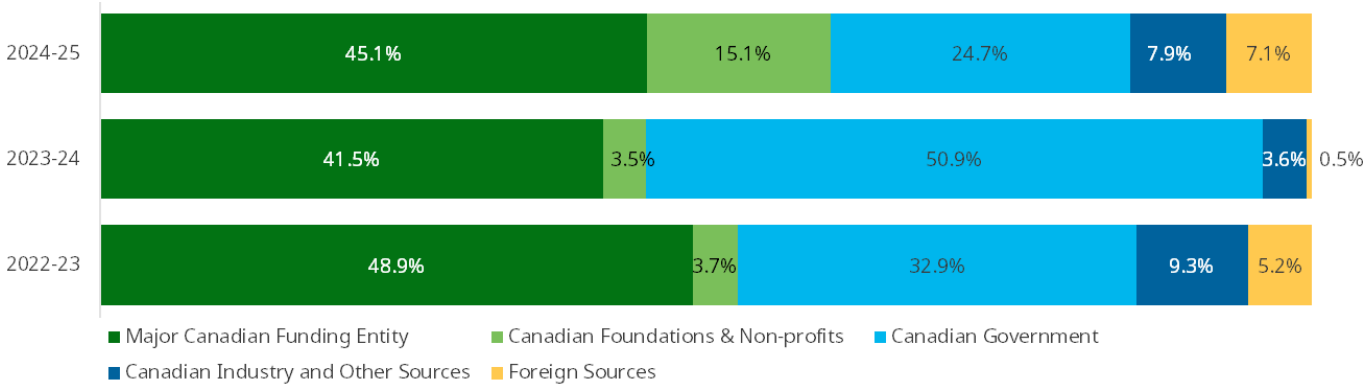
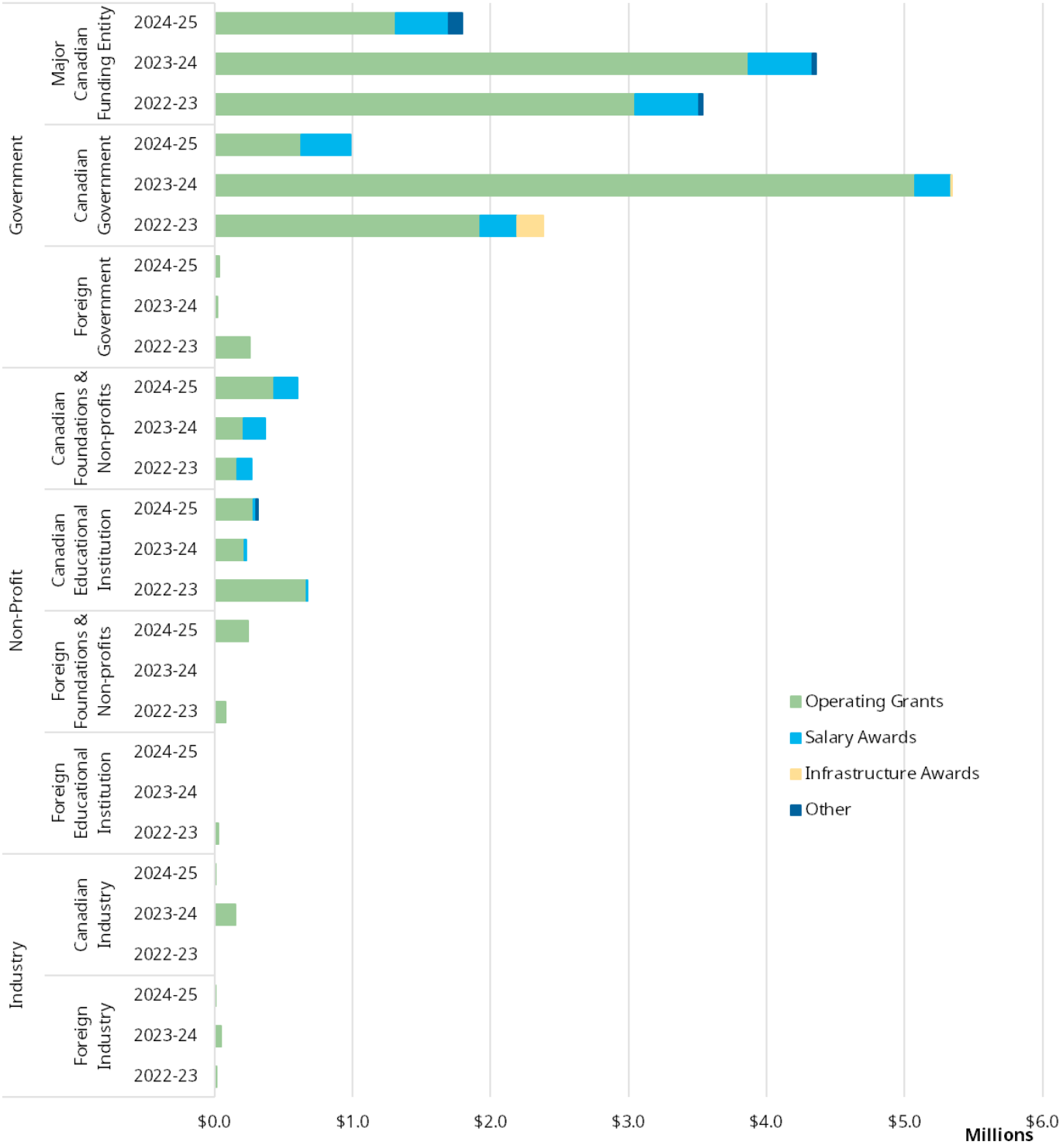


FIGURE 37 Percentage of WHRI Research Funding by Funding Source Category by Fiscal Year



In FY 2024-25, the top two funding categories are Major Canadian Funding Entities (45.1%) and Canadian Government (24.7%). Figure 38 details the major funding categories by RISe sector, funding source category and funding type.

FIGURE 38 WHRI Research Funding by RISe Sector, Funding Source Category and Type by Fiscal Year



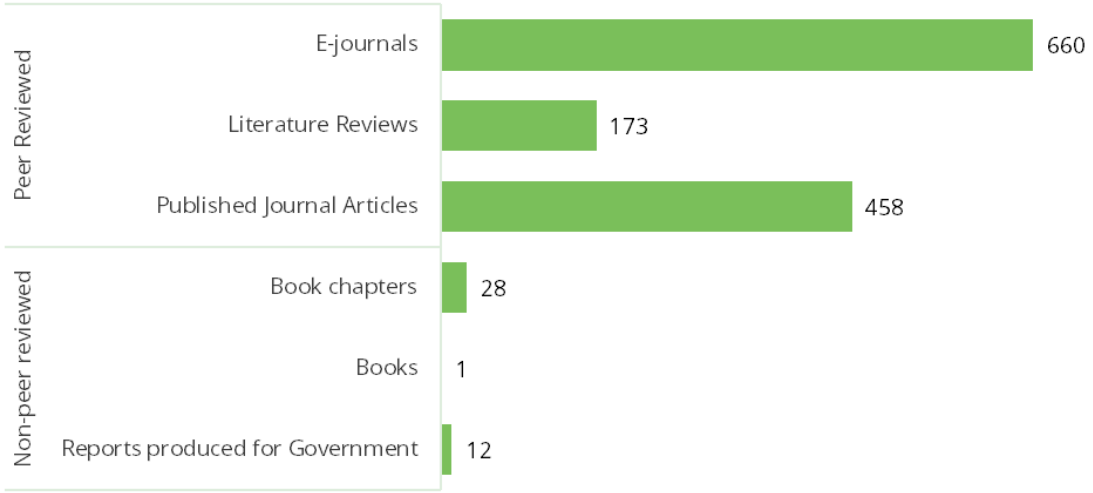
The application success rate is reported for the Fall 2024 and Spring 2025 CIHR grant competitions. Results (see Table 12) are shown for National and WHRI. WHRI was successful in the project grant competitions with a total of 4 awards from 18 submissions. WHRI investigators apply for grant competitions that are offered by a variety of granting agencies.

TABLE 12 WHRI Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	WHRI Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	0% (0/8)
2025-03 Project Grant	15.5% (435/2814)	40.0% (4/10)

WHRI had a total of 1,332 publications in calendar year 2024, of which 96.9% were peer reviewed. Total number of publications by type and category (peer vs. non-peer reviewed) is shown in Figure 39. Peer review represents the gold standard for scientific credibility. The program total represents the number of publications where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

FIGURE 39 Total Number of WHRI Publications by Type and Category



Three fiscal years' worth of data is provided for WHRI's four research specific social media channels; Facebook (member since Aug 2010); X, formerly known as Twitter (member from August 2010 – January 2025); Instagram (member since May 2018; and LinkedIn (member since June 2017). Strategic use of social media, combined with tracking and reporting of this data directly supports WHRI's strategic aim to Increase and Promote Research Translation, Implementation, and Communication. Social media use also aligns with several domains within the WHRI Strategic Framework for Knowledge Translation (KT) including:

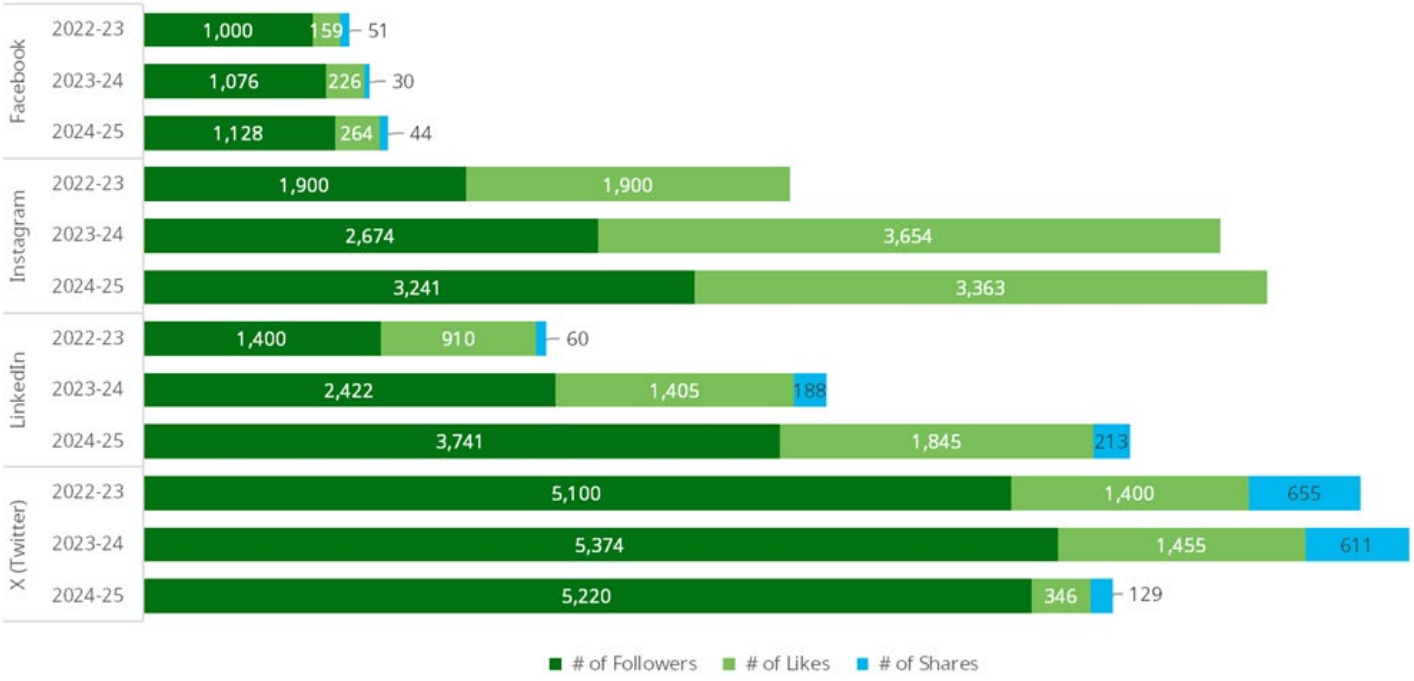
- Building KT Capacity: Promoting and hosting events to accelerate the dissemination of evidence to knowledge users.
- Advocating for a Culture of KT: Promoting KT activities and KT products.
- Manage KT Projects: Facilitating KT events and activities, including dissemination of research evidence to targeted knowledge users (e.g. patients, providers, prescribers, decision makers); and track the impact of dissemination campaigns that increase the use of KT products.

In addition to strategic alignment, social media is practically used to:

- Drive traffic to the WHRI website, which allows users to engage with services and supports.
- Enhance the profile of the WHRI as one of only 3 women's research institutes in Canada.
- Amplifying the successes and opportunities of the women's health research community, including investigators, trainees, and those across PHSA programs.
- Strengthen and track the impact of WHRI events and KT opportunities (e.g., WHRI Symposia, @WomensResearch Wellness Exchange (public event), @WomensResearch Podcast, BC Women's Research Rounds)

Figure 40 shows annual results of three fiscal years. These metrics are a measure of reach and engagement and provide an indication of the volume of activity. In addition to the below activity, many WHRI researchers maintain their own professional accounts to engage peers, funders and patients, but this information is not tracked.

FIGURE 40 WHRI Social Media Statistics

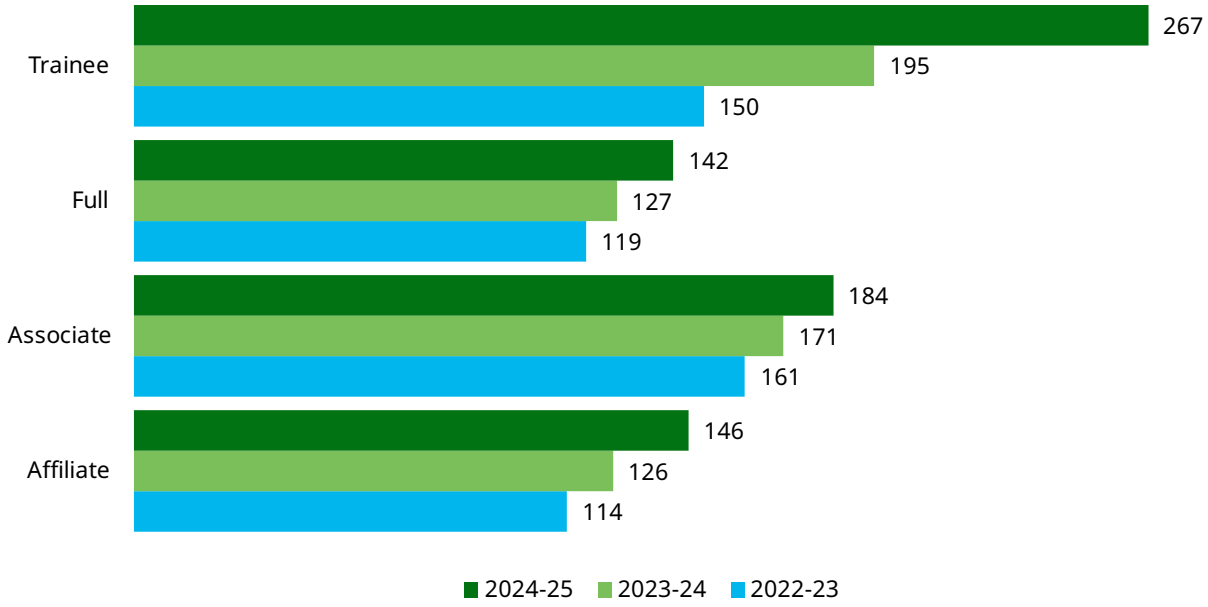


Building Research Capacity

In an effort to demonstrate WHRI's activities, their membership statistics are shown in Figure 41. In FY 2024-25, membership increased by 120 for a total of 739 members.

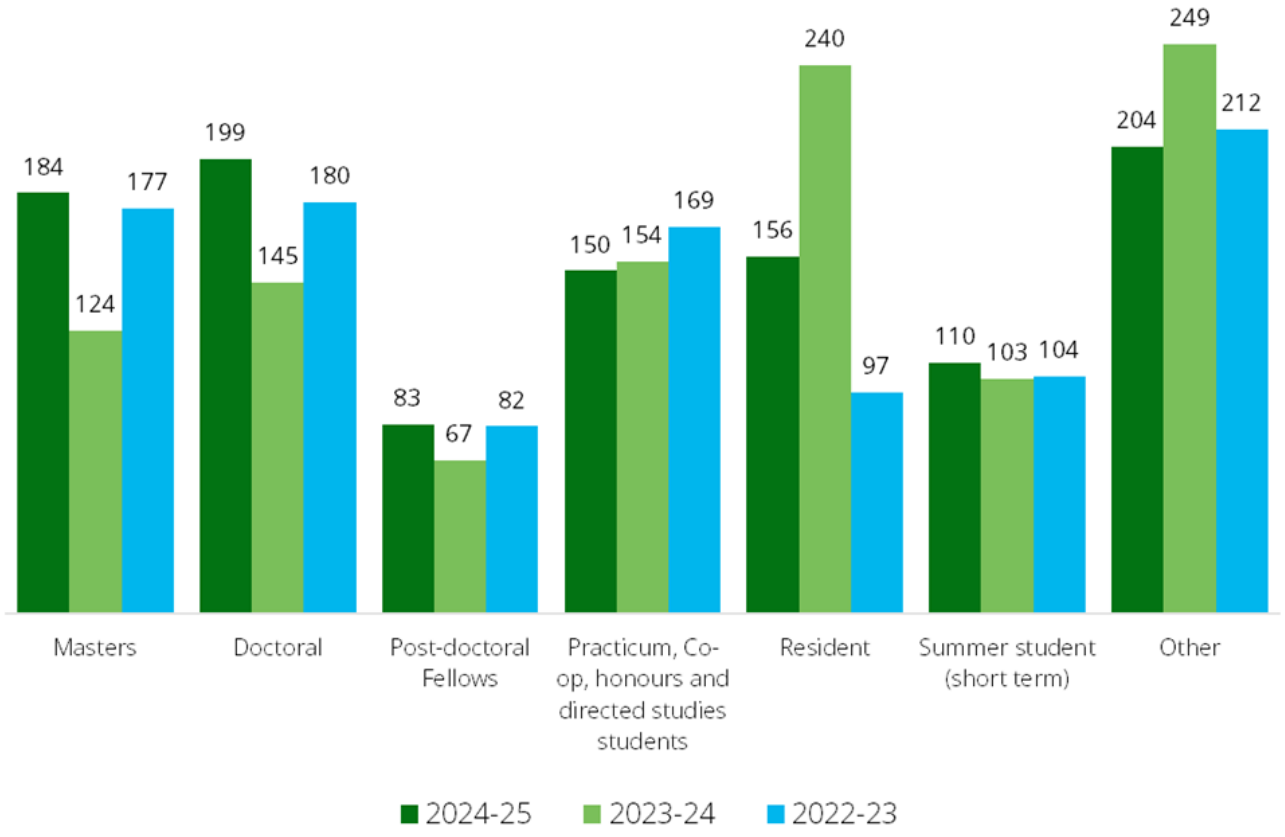
Full Member	Individuals involved in women's health research for which the WHRI would be the only research institute affiliation.
Associate Member	Individuals who are involved in women's health research, at least in part, but have a strong relationship with another research institute (e.g., BCCHR) that they wish to maintain; the result is a dual membership with the WHRI and their current affiliation.
Affiliate Member	Individuals who are extensively involved with another institute but may have projects that would overlap with WHRI.
Trainee Member	Individuals who are undergrads, grad students, medical students, research and clinical fellows, international students, and any person in a degree-granting program who is engaged in research.

FIGURE 41 Total WHRI Membership by Category and Fiscal Year



WHRI researchers provided training and supervision to a total of 1,086 trainees (see Figure 42), an increase of 4 over last fiscal year.

FIGURE 42 Total Number of WHRI Trainees by Type and Fiscal Year



Advancing Health and Policy Benefits

Clinical trial data from the REB (Research Ethics Board) is provided utilizing the same methodology as past years. See Table 13 for a detailed breakdown of clinical trial activity for WHRI by fiscal year.

TABLE 13 WHRI Clinical Trials

	FY 2022-23	FY 2023-24	FY 2024-25
Total Number of Clinical Trials Active during the FY	45	39	15
Status of the Trial at the end of the FY:			
Total Number of Approved Trials	35	29	12
Total Number of Trials that closed during the FY	10	10	3
Enrollment Numbers:			
Expected Local Subject Enrollment for the study term	11,120	8,273	6,625
Total Cumulative Subject Enrollment at the end of the FY	4,309	5,135	6,165

Grant funding type is reported for clinical trials in Figure 43. 60% of WHRI's clinical trials are grant funded.

FIGURE 43 WHRI Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the Fiscal Year

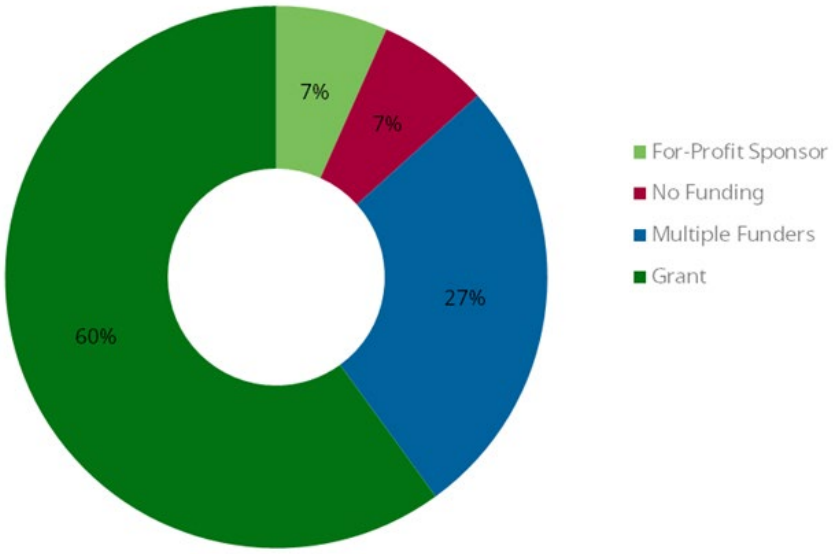


Table 14 reflects WHRI's highlighted impacts that represent the breadth of research activity over the FY 2024-25 timeframe (Apil 1, 2024 – March 31, 2025).

TABLE 14 WHRI Research Outcomes

Women's Health Research Institute (WHRI) – Research Outcomes
The WHRI released a report of the first provincial study conducted on the health and economic impacts of the menopause transition on women in BC **Classification:** System – Knowledge dissemination-new policy System – Other type (This initiative created a glossary of menopause terms and definitions to improve health literacy across audiences) The WHRI, in partnership with Pacific Blue Cross and the BC Women's Health Foundation, conducted the first provincial study of menopause. This 2024 study, Health and Economics Research on Midlife Women in British Columbia (HER-BC), engaged a wide geographic and demographic cross-section of 2,133 participants across BC to share their menopause-related health experiences, impacts on work and caregiving, as well as quality of life. This study was the first of its kind in B.C. to look at the complex impact of perimenopause, menopause and post-menopause on women's lives. The results from this initiative have formed the HER-BC Study Report, released November 2024 at the Greater Vancouver Board of Trade Health Care Forum. The report includes recommendations to better respond to and support women in midlife. The findings of the HER-BC Study Report have been featured by various media outlets, including CityNews, CBC and the Vancouver Sun.
The WHRI launched a national guidance document outlining methods for gender equitable health research for women, trans, and non-binary people: the Beyond the Binary in Canada Guide **Classification:** Patient – Protocols and guidelines System – Knowledge dissemination-new policy The WHRI continues to drive transformation of gender-equitable health research with an institute-led, community engaged initiative: Beyond the Binary. The project is anchored in person centered, trauma informed, justice oriented and integrated knowledge translation approaches. The first phase, which involved provincial collaboration between women's health researchers, community members with experience of gender-based inequities and support organizations, resulted in a provincial guide for incorporating gender equitable practices into health research. The second phase involved a national scale-up and French translation of the guide through a collaboration with the Partnership for Women's Health Research Canada and this national guide was released in November 2024. The Beyond the Binary in Canada guide is nationally relevant, was created via Pan-Canadian input from researchers, community members, and research administrators, and is available for free to support health researchers and institutions in their commitments to conducting gender equitable health research for women, trans, and non-binary people.
BC Women's launches research-driven website to support British Columbians with regionally relevant postpartum anxiety and postpartum depression resources. **Classification:** Patient – Access to new treatment/technology System – Process of care-standardization Catalyzed by a patient and provider identified knowledge gap and informed by findings from an integrated Knowledge Translation research project led by Dr. Lori Brotto, a new online platform, Postpartumcare.ca, was created to provide access to postpartum mental health care and information for postpartum individuals in British Columbia. This website was co-developed in partnership with postpartum care providers and patient partners. The research demonstrated the effectiveness and useability of a digital psychoeducational resource for postpartum depression and anxiety among participants and demonstrated that engagement with the platform significantly reduced symptoms of postpartum depression and anxiety compared to a control group. These findings also exposed a critical need: new parents need easy access to clear, reliable and region-specific support. The resulting website, postpartumcare.ca, launched in February 2025, provides postpartum individuals with expert guidance, local services, reassurance that what they are feeling is valid and was designed to make finding help simple.

Creation of a new Canadian clinical guideline for the diagnosis of Endometriosis

Classification:
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Three WHRI researchers (Catherine Allaire, Paul Yong and Kate Wahl) were co-authors of a national clinical practice guideline: Society for Obstetricians and Gynaecologists of Canada's Diagnosis and Impact of Endometriosis – A Canadian Guideline. Endometriosis, which affects up to 10% of Canadian women, is an inflammatory disease characterized by the growth of endometrial-like tissue outside the uterus that causes chronic pelvic pain, painful periods, painful sexual intercourse, bowel and bladder symptoms, and infertility. This guideline will support health care providers and policymakers involved in the care of those impacted by endometriosis and addresses the need for earlier recognition of endometriosis to facilitate timely access to care and support. Uptake of this guideline will result in increased awareness and education about the impact and approach to diagnosis and will support timely access to care for patients and families affected by endometriosis.

WHRI and BCCHR partner to launch the 2024 CW Digital Health Research Accelerator Grant competition to fund digital health innovations that benefit women, children and families

Classification:
System – Other type (Capacity building for clinical implementation)

In partnership with the BC Children's Research Institute, the WHRI launched the 2024 CW Digital Health Research Accelerator Grant competition. This funding competition aims to accelerate digital health solutions towards clinical or community implementation by supporting researchers to develop prototype solutions, test feasibility in the operational context, assemble the required partnerships and teams, develop clinical and/or operational evidence, and create a plan for sustainment and scale-up. For the first time in the history of this competition, two grants of $50,000 each were specifically available for women's and/or newborn health projects. The 2024 recipients of this dedicated funding were WHRI researchers Dr. Jessica Liauw, whose project examines a novel strategy to improve implementation of guidelines for Aspirin in early pregnancy to prevent preeclampsia, and Dr. Paul Yong, whose project is focused on a health equity and inclusive approach to virtual medical education using the development of pelvic exam videos for cyber-patients.

Creation of a new Canadian clinical guideline on the identification and treatment of perinatal mood and anxiety disorders

Classification:
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Research evidence from WHRI/BCCHR researchers, Nichole Fairbrother and Hamideh Bayramour, was used to inform a national clinical practice guideline: Society for Obstetricians and Gynaecologists of Canada's Identification and Treatment of Perinatal Mood and Anxiety Disorders. Hamideh Bayrampour was also a co-author of the guideline. Pregnant and postpartum individuals with untreated perinatal mental illness, including mood and anxiety disorders, may suffer devastating effects and their family may experience short- and long-term adverse outcomes. This guideline targets heath care providers who provide preconception counselling and/or care during pregnancy and the postpartum period and aims to help perinatal health care providers identify and assist pregnant and postpartum patients with perinatal mental illness, specifically perinatal mood and anxiety disorders. Use of this guideline will create open dialogue and evidence-informed care for perinatal mood and anxiety disorders, including competency for identification, screening, treatment, and referral, which will lead to improvements in patient care.

International guidelines recommend mindfulness-based therapy for sexual dysfunction in women based on research from WHRI investigator

Classification:
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Based on research evidence from a WHRI investigator, Dr. Lori Brotto, the International Consultation on Sexual Medicine recommendations for 2024 included the recommendation that mindfulness-based therapy be used in the treatment of sexual dysfunction in women. Sexual health concerns are common and significantly impact quality of life, but many people do not seek treatment due to embarrassment and other barriers. Recent research investigations have examined the effectiveness of psychological treatments for addressing sexual dysfunctions and have provided strong evidence of psychological treatment, increasing the need for primary care providers to become aware of such approaches and refer to specialists when appropriate. These international recommendations serve as a guide for primary care clinicians to understand the factors underlying sexual dysfunction and emphasize an evidence-based approach to managing sexual dysfunctions in primary care, allowing for timely interventions.

Creation of a new patient decision aid for choosing method of first trimester abortion

Classification:
Patient – Access to new treatment/technology

WHRI researcher, Sarah Munro, lead the development of an online interactive patient decision aid, It's My Choice, to help women choose between the two available options for abortion in early pregnancy, the abortion pill (medical abortion) or the abortion procedure (surgical abortion). This digital tool was co-created with researchers, patients and clinicians. This work was funded by Health Canada and the It's My Choice decision aid is now available on the Society for Obstetricians and Gynaecologists of Canada's Sex and U website (www.sexandu.ca/its-my-choice), which serves to provide the public with accurate, credible, and up-to-date information and education on topics related to sexual and reproductive health. The online decision aid is available in four languages for accessibility.

Creation of an online platform to provide the public evidence-based information about pelvic pain & endometriosis

Classification:
Patient – Other type (Knowledge dissemination)

WHRI researcher, Paul Yong, led a research project to develop an online platform, pelvicpainendo.ca, to raise public awareness of endometriosis-associated pelvic pain and painful sex. Endometriosis affects approximately 10% of women and is characterized by the growth of endometrial-like tissue outside the uterus that causes chronic pelvic pain, painful periods, painful sexual intercourse, bowel and bladder symptoms, and infertility. Funded by the Canadian Institutes of Health Research, this website provides evidence-based information about endometriosis, painful sex, treatment options, available supports and also features videos (digital stories) that contain first-hand accounts of living with endometriosis. The launch of the online platform was accompanied by a social media campaign (@pelvicpainendo). The aim of this initiative is to improve care and public awareness through the sharing evidence-based information.

Creation of a new Canadian clinical guideline for the care of pregnant women Living with HIV and the reduction of perinatal transmission

Classification:
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Two WHRI researchers (Deborah Money and Karen Tulloch) were co-authors of a national clinical practice guideline: Society for Obstetricians and Gynaecologists of Canada's Care of Pregnant Women Living with HIV and Interventions to Reduce Perinatal Transmission. The use of antiretroviral therapy in pregnancy has been shown to significantly reduce the risk of perinatal transmission. Despite this, in Canada, optimal access and adherence to antiretroviral therapy in pregnancy has not been universally achieved, leading to increasing rates of perinatal transmission, which have significant morbidity and mortality implications for the child. This guideline outlines best practice for perinatal management of pregnant women living with HIV and practices for the reduction of perinatal transmission of HIV toward a target of eradication of perinatal transmission. Uptake of this guideline will confer health benefits to both mother and child by optimizing maternal health and preventing perinatal HIV transmission.

BC CENTER FOR DISEASE CONTROL/UBC CDC (BCCDC)

BC Centre for Disease Control
Provincial Health Services Authority

Producing and Advancing Knowledge

In FY 2024-25, researchers affiliated with BCCDC were awarded a total of $8,060,842 in research funding, which represents a 53.2% decrease over last fiscal year. The amount awarded as Operating Grants makes up 82.0% of total awards. A breakdown of funding types and subtypes can be found in Figure 44, and by funding source category in Figure 45.

BCCDC's portion of the Research Support Fund Program grant totalled $307,910 for FY 2024-25 but is not included in total research funding or the figures below. Because of its public and population health mandate, research at BCCDC is very much embedded within its clinical mandate and, as such, is also supported by operating funding to a significant degree. Total COVID-19 related research funding was $964,131 and is included in the figures below.

FIGURE 44 Total BCCDC Research Funding by Funding Type and Sub-Type by Fiscal Year

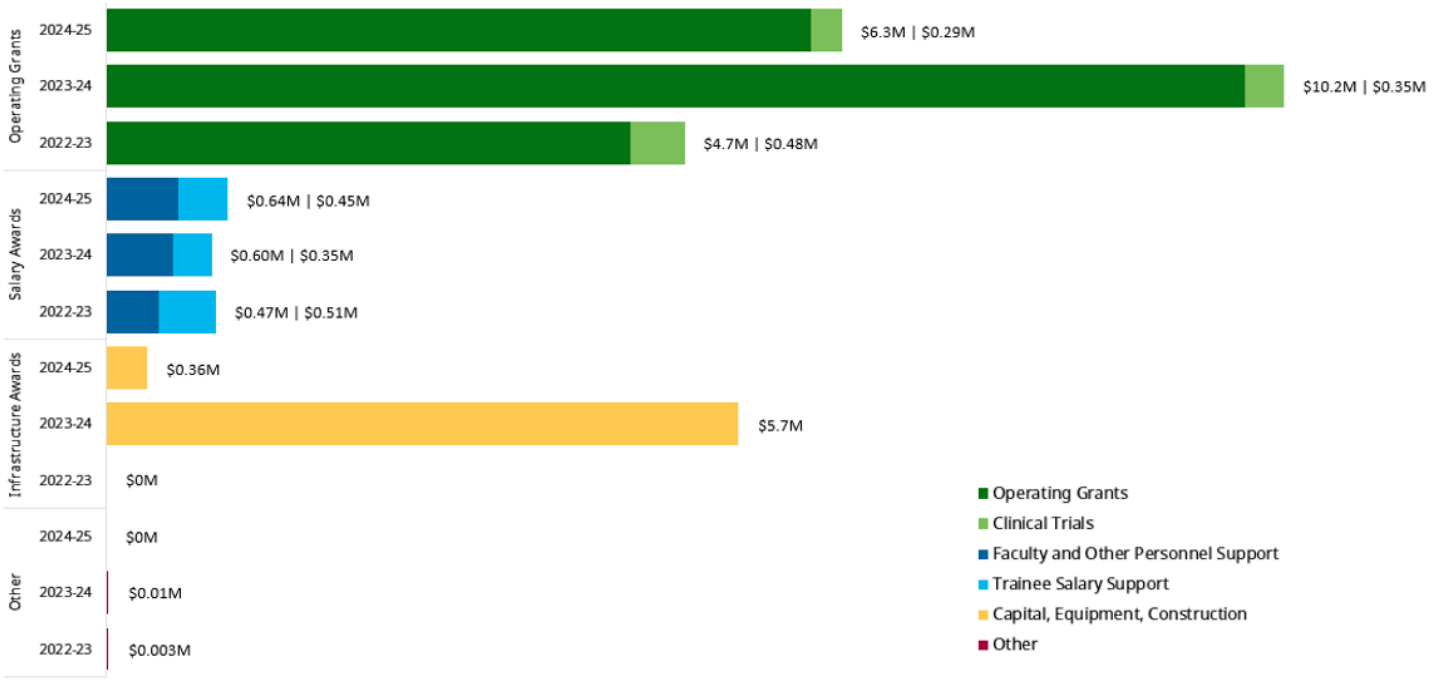
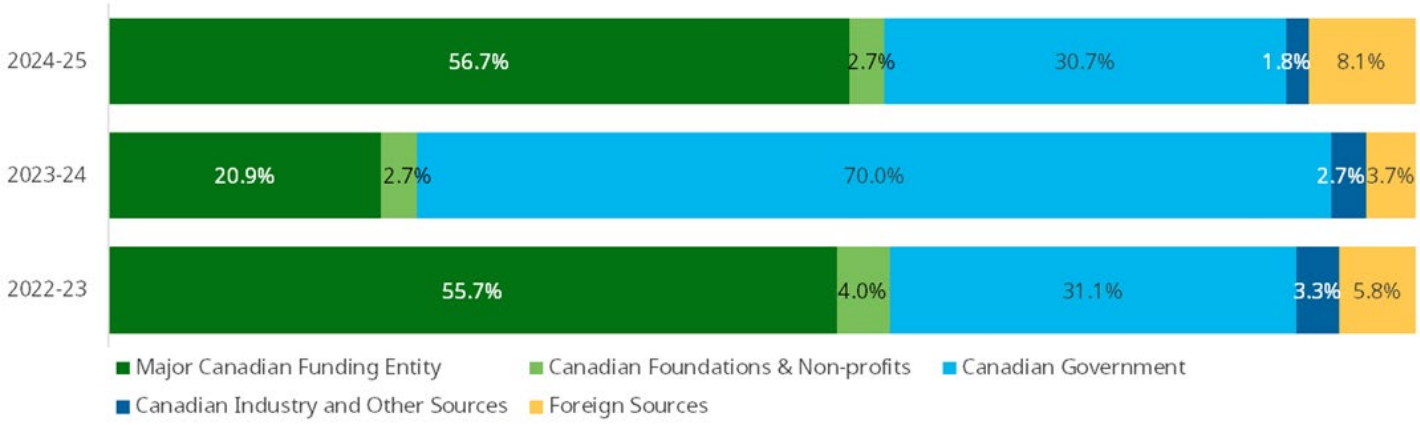
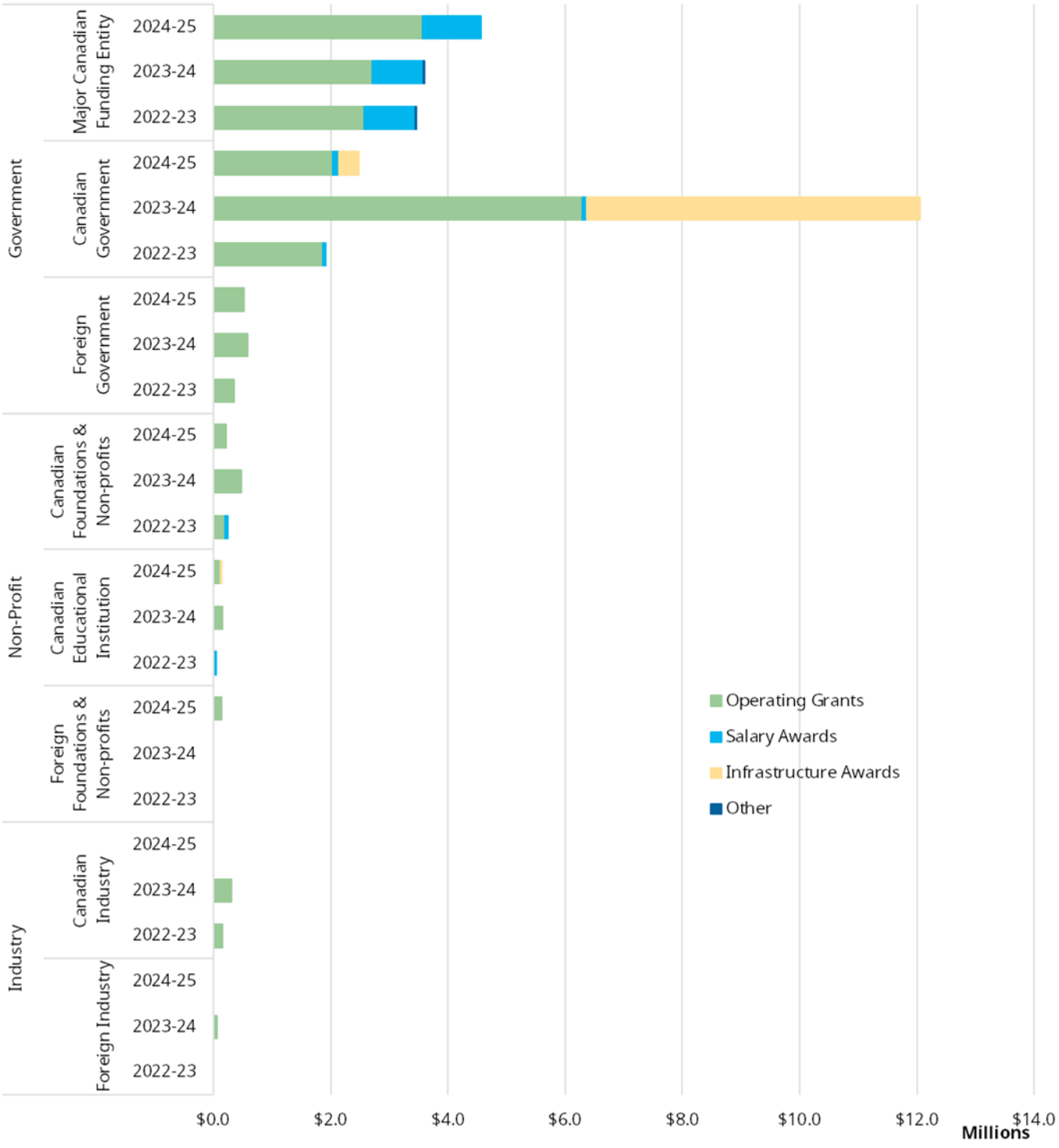


FIGURE 45 Percentage of BCCDC Research Funding by Funding Source Category by Fiscal Year



The top two funding categories in FY 2024-25 are Major Canadian Funding Entity (56.7%) and Canadian Government (30.7%). Figure 46 details the funding categories by RISe sector, funding source category and funding type.

FIGURE 46 BCCDC Research Funding by RISe Sector, Funding Source Category and Type by Fiscal Year



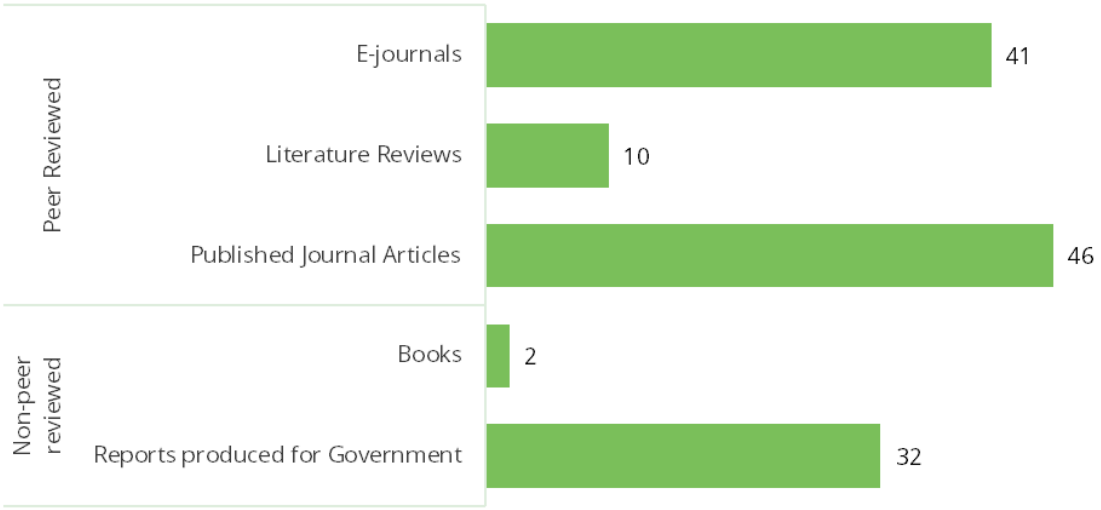
BCCDC application success rate is reported for the Fall 2024 and Spring 2025 CIHR grant competitions in Table 15. BCCDC was successful in the project grant competitions, with 1 award from 6 applications.

TABLE 15 BCCDC Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	BCCDC Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	100% (1/1)
2025-03 Project Grant	15.5% (435/2814)	0% (0/5)

BCCDC had a total of 131 publications of which 74.0% were peer reviewed. Total number of publications by type and category (peer vs. non-peer reviewed) is seen in Figure 47. The program total represents the number of publications where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program

FIGURE 47 Total Number of BCCDC Publications by Type and Category



Building Research Capacity

BCCDC defines a researcher as any principal investigator or co-investigator involved in BCCDC research projects. BCCDC had a total of 55.5 researchers meeting this definition in FY 2024-25, an increase of 2 from FY 2023-24, as seen in Figure 48. During FY 2024-25, BCCDC researchers provided training and supervision to a total of 159 trainees (see Figure 49), an increase of 30 from the previous fiscal year.

FIGURE 48 Total Number of BCCDC Researchers by Fiscal Year

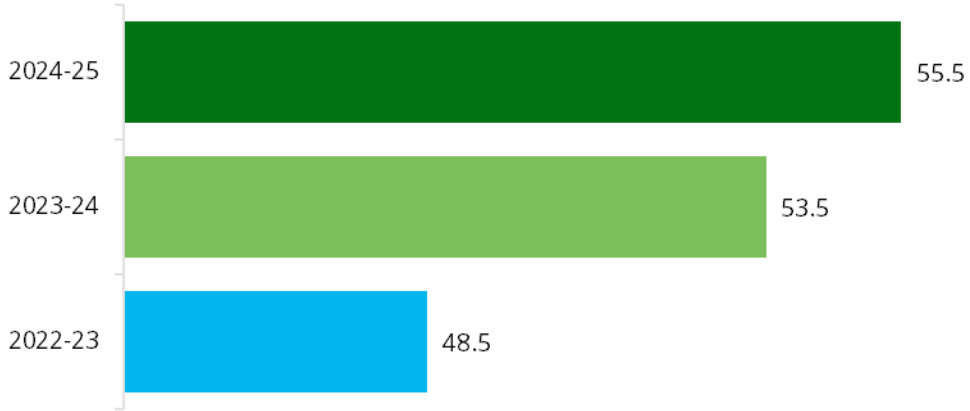
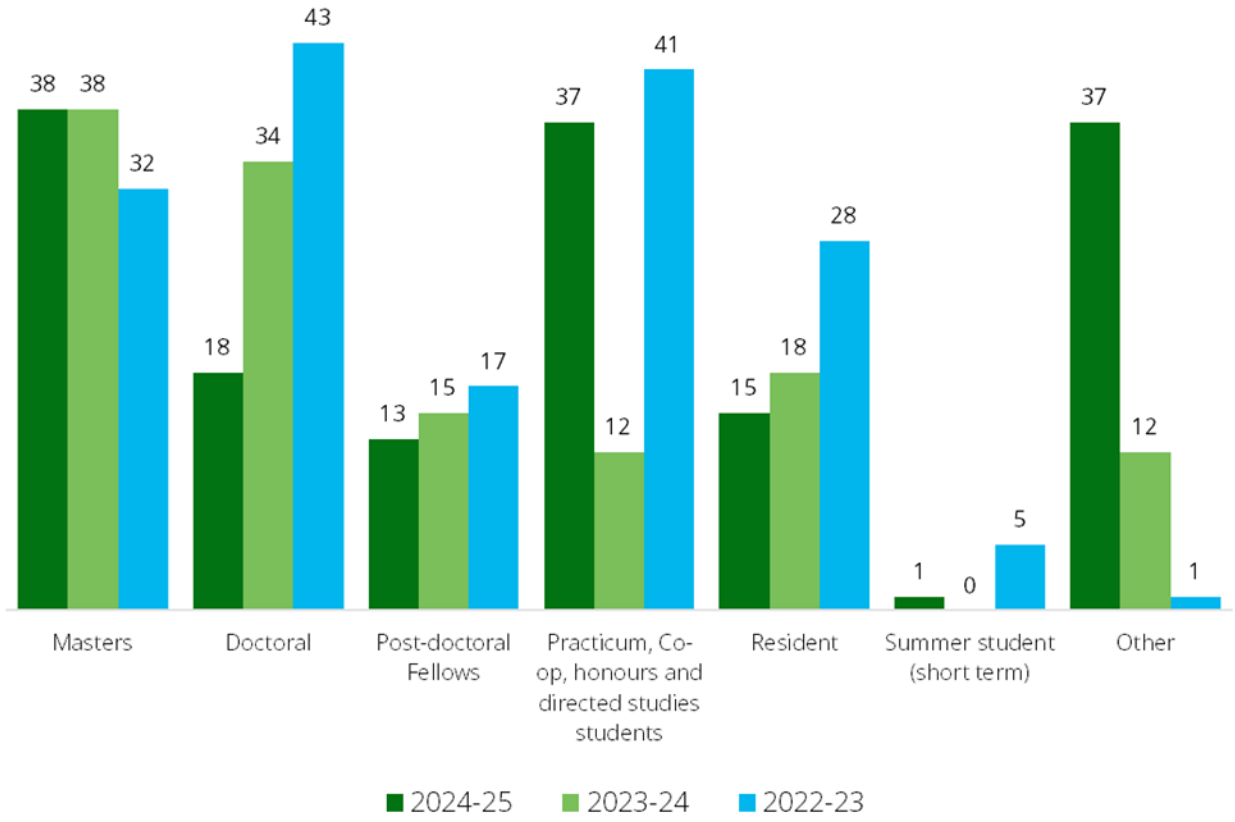


FIGURE 49 Total Number of BCCDC Trainees by Type and Fiscal Year



Advancing Health and Policy Benefits

See Table 16 for a detailed breakdown of BCCDC clinical trial activity by fiscal year.

TABLE 16 BCCDC Clinical Trials

	FY 2022-23	FY 2023-24	FY 2024-25
Total Number of Clinical Trials Active during the FY	15	12	13
Status of the Trial at the end of the FY:			
Total Number of Approved Trials	14	11	12
Total Number of Trials that closed during the FY	1	1	1
Enrollment Numbers:			
Expected Local Subject Enrollment for the study term	13,729	7,721	9,182
Total Cumulative Subject Enrollment at the end of the FY	5,233	2,111	4,445

46% of BCCDC's clinical trials are grant funded, 23% have multiple funders, 23% have other funding, and 8% have no funding.

Table 17 reflects BCCDC's highlighted impacts that represent the breadth of research activity over the FY 2024-25 timeframe (Apil 1, 2024 – March 31, 2025).

TABLE 17 BCCDC Research Outcomes

BC Centre for Disease Control / UBC CDC (BCCDC) – Research Outcomes
Early results from BCCDC research show a daily dose of antibiotics could prevent sexually transmitted infections (STIs) for individuals at high risk and help lower STI rates across BC and Canada. **Classification:** Patient – Access to new treatment/technology Patient – Other type (Prevention) System – Other type (Prevention) Rates of bacterial sexually transmitted infections (STIs) like syphilis, chlamydia, and gonorrhea are rising in Canada, highlighting the need for new prevention strategies, like the recent introduction of doxycycline post-exposure prophylaxis (doxyPEP). A pilot study led by Dr. Troy Grennan is showing promising early results for doxycycline pre-exposure prophylaxis (doxyPrEP)—a daily antibiotic taken to prevent STIs. Though a small sample size, this study has found that among gay, bisexual, and other men who have sex with men (GBM) living with HIV, doxyPrEP reduced chlamydia by 92%, syphilis by 79%, and gonorrhea by 68% when compared to those receiving placebo. These early findings led to a larger, Canada-wide clinical trial funded by the Canadian Institutes for Health Research. If proven effective in this larger trial, doxyPrEP could offer an additional accessible prevention option (along with doxyPEP) for individuals at high risk and help lower STI rates across BC and Canada.
The Chee Ooahut – Quet Nsayka Tillicum project: Designing a safer, more culturally meaningful, accessible STBBIs self collection kit. **Classification:** Patient – Improvements in timely access to care Chee Ooahut is an Indigenous-led research collaborative, bringing together First Nations and Métis voices, along with Indigenous and non-Indigenous organizational partners across BC. A major research outcome of this project was the identification of key design and delivery elements that could make sexually transmitted and blood-borne infections (STBBIs) self-collection kits safer, more culturally meaningful, accessible and easier to use for Indigenous community members, with a particular focus on rural, remote and Northern communities. The research team engaged with participants, Indigenous partners and communities for feedback on kit design and delivery. Building on the learnings, the team conducted a pilot implementation of these self-collection kits, which addressed persistent barriers such as stigma, privacy, logistical challenges, cultural safety, and lack of access to care. Chee Ooahut lays the groundwork for improving access to essential health services while affirming the right of Indigenous communities to shape their own health futures.

BCCDC created a new statistical model that will provide a more accurate way in evaluating the Take-home naloxone (THN) program.

Classification:
Patient – Improvements in timely access to care
System – Other type (New technology)

BCCDC Data and Analytics Services developed a new statistical model that provided a better evaluation of the impact of BCCDC's Take-Home Naloxone (THN) program. This model account for under-reporting of kit distribution and use, improving the ability to assess program effectiveness – results showed that actual usage of kits was approximately five times higher than reported. Through this model (manuscript under review), the research team also found correlation between distribution and usage, where kits are more likely to be used if distributed by overdose prevention sites and community sites. This analysis increased efficiency, informed prioritization and identified areas for improvement to increase accessibility and usage of THN kits. The developed framework is being used in work with FNHA and has also been shared with other jurisdictions to examine the reach & impact of their programs. A prior version of this model was used in resource allocation decisions by many US states.

BCCDC assessed sera samples for age-related variation in anti-N1 pre-immunity to avian influenza H5N1 and measles antibody level. The findings of the study have helped inform public health policy and immunization coverage.

Classification:
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Following a series of anonymous, residual serosurveys conducted throughout the COVID-19 pandemic, BCCDC conducted the most recent collection of sera in August 2024. Given outbreaks and current public health concerns, we assessed these sera for age-related variation in anti-N1 pre-immunity to avian influenza H5N1 and measles antibody levels in collaboration with Canada's National Microbiology Laboratory. Our methodology includes simultaneous sampling across the lifespan (from those <5- to >80-years old), with equal representation by sex and within a short timespan (<2-weeks). We showed high levels of COVID-19 hybrid immunity across all ages, including older adults, a high proportion of the population with cross-reactive antibodies to avian influenza H5N1 neuraminidase protein, varying by childhood human influenza imprinting epochs, and potential age groups for which measles vaccine coverage improvements may be needed for maintaining elimination. Findings have been presented both internally and externally to help inform public health policy, immunization coverage and advocacy.

Through the Sentinel Practitioner Surveillance Network, BCCDC researchers obtained important findings on COVID-19 and influenza in the 2024-25 respiratory season and presented the findings to WHO and federal decision makers.

Classification:
System – Knowledge dissemination-new policy

Since 2004, Dr. Danuta Skowronski has led the Canadian Sentinel Practitioner Surveillance Network (SPSN) – the longest running platform for community-based respiratory virus and vaccine effectiveness (VE) monitoring and a model of public health partnership between the provinces of BC, Alberta, Ontario, and Quebec as well as Canada's National Microbiology Laboratory.

Twenty years later, the SPSN continues to have substantial research impacts. In the 2024-25 respiratory season, SPSN findings include identification of emerging genetic variants, repeat vaccination effects, and imprinting effects for influenza, as well as VE estimation and variant monitoring for COVID-19. Findings were reported to the WHO via the Global Influenza Vaccine Effectiveness (GIVE) network, for consideration in influenza vaccine strain selection decisions. Other knowledge dissemination activities include presentations to federal decision-makers (e.g., National Advisory Committee on Immunizations) and other stakeholders (e.g., via PHAC Surveillance Expert Working Group, national and international conferences) and peer-reviewed publication and bulletins.

BCCDC research led to the discovery that people with heart disease who use illicit stimulants face a higher risk of drug toxicity death.

Classification:
Patient – Improvements in timely access to care

As simulants are increasingly detected among drug toxicity deaths, BCCDC researchers conducted a study to better understand stimulant toxicity. From this study, BCCDC researchers discovered a correlation between chronic disease and risk of drug toxicity deaths - people with heart disease who use illicit stimulants faces an elevated risk of drug toxicity deaths.

This study has been widely shared among clinicians to raise awareness of the need to screen people who use stimulants for heart disease and people with heart disease for stimulant use. The studying findings were also incorporated into clinical guidance for harm reduction clinical providers and will likely have additional influence on clinical practice. This study prompts the need to develop resources that will help raise awareness for people using stimulants and encourages future research on interventions that will help reduce drug toxicity deaths among people with medical comorbidities.

New project at BCCDC, H5N1 Unified Bioresponse (HUB), aims to build long-term preparedness and resilience against highly pathogenic avian influenza H5N1, to safeguard animal and human health in BC and beyond.

Classification:
Patient – Delay of disease progression/survival
Patient – Access to new treatment/technology
Patient – Protocols and guidelines

The HUB project is working to address specific gaps in the current public health and agricultural response mechanisms to highly pathogenic avian influenza (HPAI). These gaps fall outside the routine service provided by BC's government-mandated organizations and is a demonstration of a unified, cross-ministry collaboration that aims to build long-term preparedness and resilience against the growing number of OneHealth threats, such as HPAI H5N1 virus.

HUB is driven by the concern that the virus's adaptation to mammals could precipitate a future pandemic. If this threat is not addressed, BC faces potential social and economic impacts, including disruptions to food security, public health emergencies, and significant economic losses across multiple sectors.

HUB aims to help ensure a coordinated and comprehensive approach to mitigate the spread of H5N1 across species. The expected outcome is a robust, predictive, and responsive system that safeguards both animal and human health in British Columbia and beyond.

BCCDC researchers are conducting surveillance on mosquito species to monitor the risk of mosquito-borne infections and local transmission.

Classification:
Patient – Delay of disease progression/survival

Climate change can impact risk of mosquito-borne infections, including the California Serogroup viruses (CSV) by facilitating range expansion of endemic and invasive mosquito species. In September 2024, an unusual cluster of three locally-acquired pediatric cases of CSV viral encephalitis cases were reported in the Whistler region, indicating an emerging risk of local transmission. Recent modelling has shown the sea-to-sky region to be suitable habitat for a select invasive mosquito vector of the CSV. In partnership with Lil'Wat and Squamish First Nations, we are generating pilot data on mosquito species and the infections they carry along the sea-to-sky corridor to directly enable surveillance more broadly in this region, particularly important given the severity of the pediatric cases last year.

BCCDC researchers are studying the dynamics of British Columbia smallholder livestock systems and developing One Health strategies to prevent, detect and control highly pathogenic avian influenza.

Classification:
Patient – Delay of disease progression/survival
Patient – Protocols and guidelines
System – Knowledge dissemination-new policy

Highly pathogenic avian influenza (HPAI), particularly H5N1, is widely considered a contender for the cause of the next pandemic. The BC premises ID (PID) program was established to keep track of producers in the province and to mitigate emerging threats and support producers in emergency situations brought on by pathogens such as HPAI. Although registration for a PID is mandatory, smaller livestock operations in BC have the lowest participation rates, and potentially pose higher risk for intra- and inter-farm transmission given the various livestock and companion animal species co-existing on some smallholder farms. Understanding both registered and unregistered livestock owners' perceptions around the PID program, as well mapping connectivity and potential transmission pathways across participating farms, will inform best practice for animal and public health emergency preparedness and response. This information will be critical to improving policies and programming for monitoring and mitigating HPAI and other diseases.

BC MENTAL HEALTH & SUBSTANCE USE SERVICES RESEARCH INSTITUTE (BCMHSUSRI)

BC MENTAL HEALTH & SUBSTANCE USE SERVICES
Provincial Health Services Authority

Producing and Advancing Knowledge

In FY 2024-25, researchers associated with BCMHSUSRI were awarded a total of $2,106,095, representing an increase of 132.2% over last fiscal year. Operating Grants make up 88.5% of awards. A breakdown of funding types and subtypes can be found in Figure 50, and by funding source category in Figure 51.

BCMHSUSRI's portion of the Research Support Fund Program grant totalled $71,074 for FY 2024-25 but is not included in total research funding or the figures below.

FIGURE 50 Total BCMHSUSRI Research Funding by Funding Type and Sub-Type by Fiscal Year

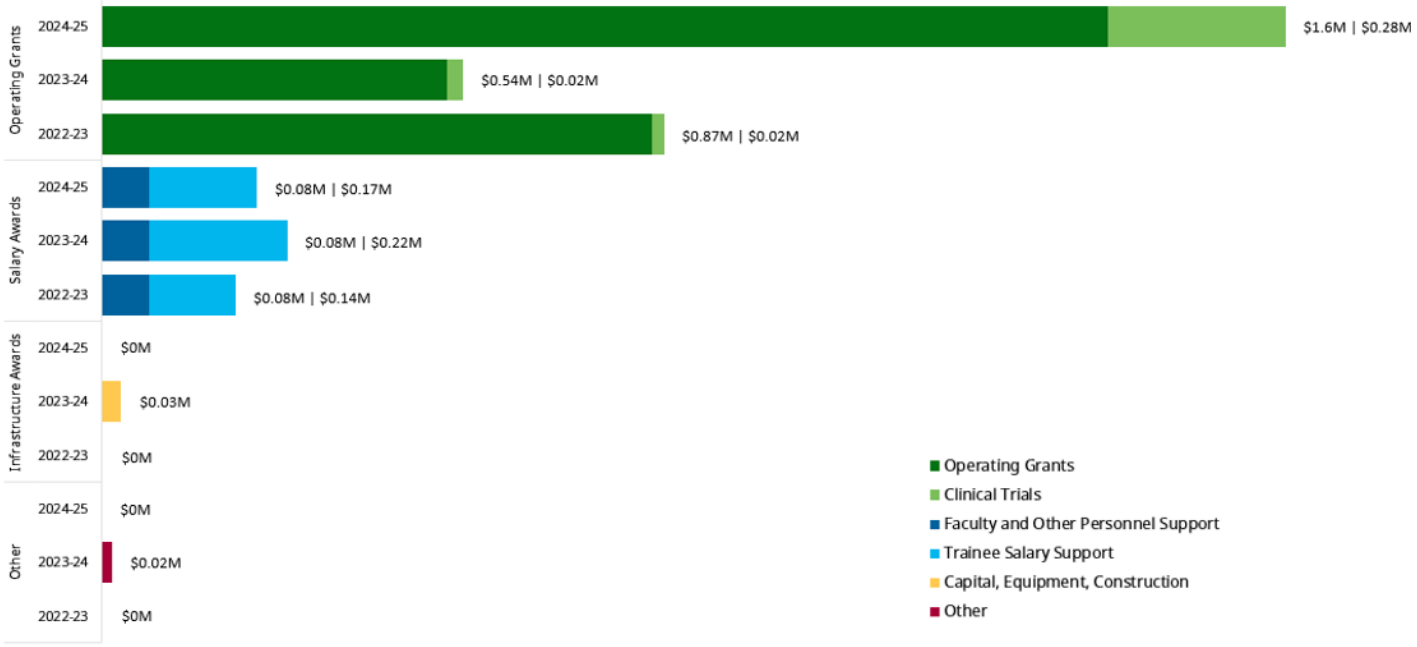
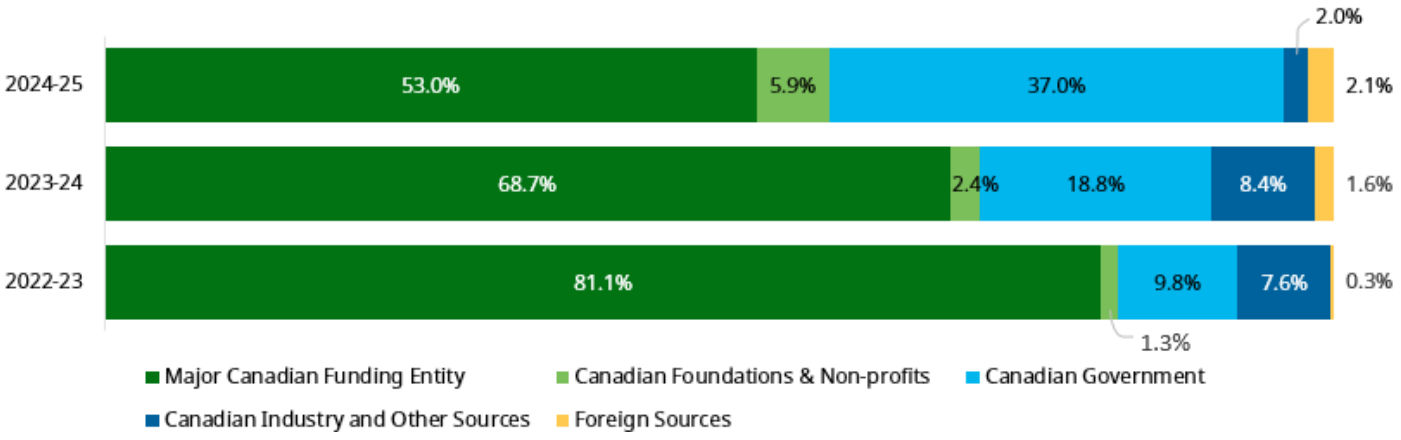
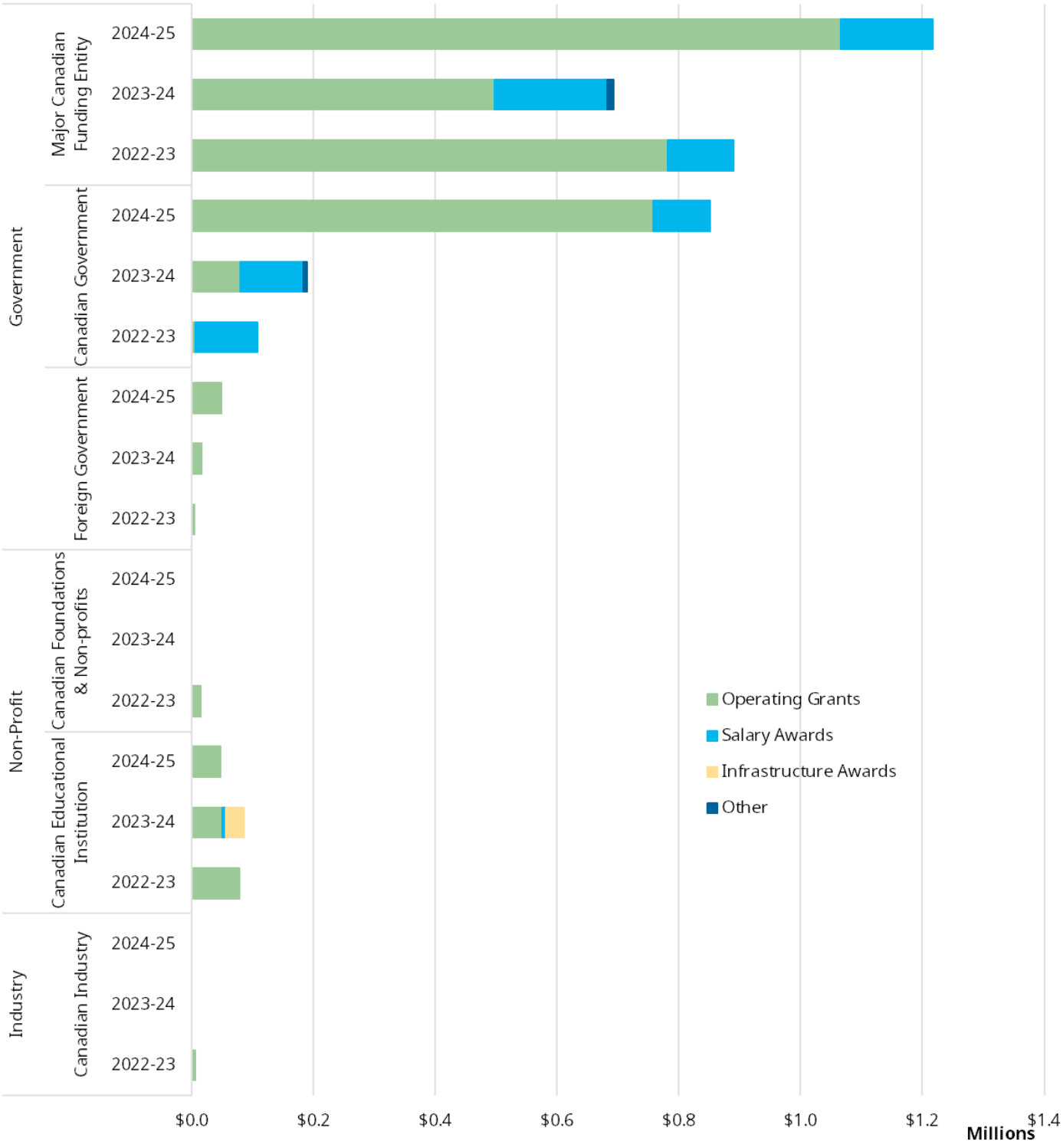


FIGURE 51 Percentage of BCMHSUSRI Research Funding by Funding Source Category by Fiscal Year



The top two funding categories continue to be Major Canadian Funding Entities (53.0%), and Canadian Government (37.0%). Due to the small number of awards, category percentages fluctuate year over year. Figure 52 details the funding categories by RISe sector, funding source category and funding type.

FIGURE 52 BCMHSUSRI Research Funding by RISe Sector, Funding Source Category and Type by Fiscal Year



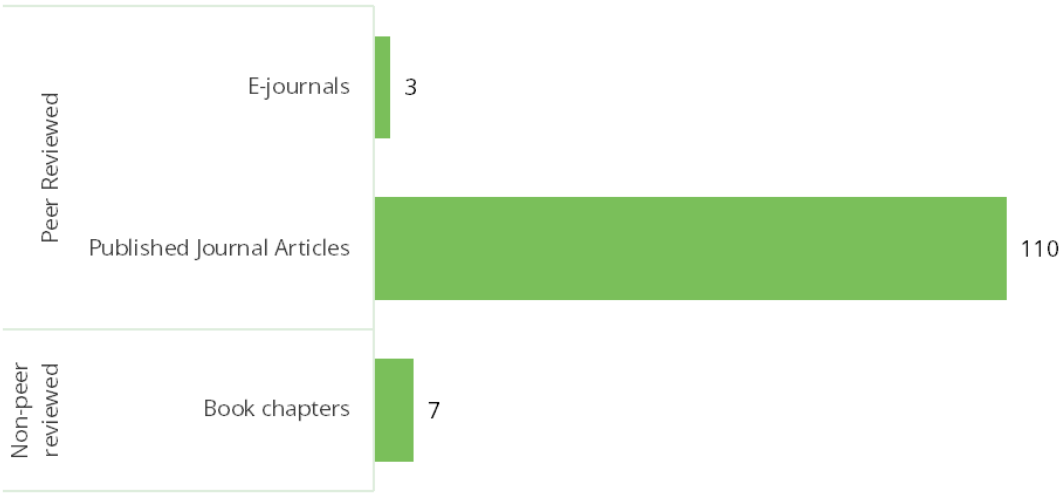
The national application success rate is reported for the Fall 2024 and Spring 2025 CIHR grant competitions. BCMHSUSRI did not participate in either project grant competitions.

TABLE 18 BCMHSUSRI Annual CIHR Grant Application Success Rate

CIHR Grant Funding Opportunity	National Overall Results % (Funded/Submitted)	BCMHSUS Results % (Funded/Submitted)
2024-09 Project Grant	17.2% (453/2631)	0% (0/0)
2025-03 Project Grant	15.5% (435/2814)	0% (0/0)

BCMHSUSRI had a total of 120 publications, of which 94.2% were peer reviewed. Total number of publications by type and category (peer vs. non-peer reviewed) is seen in Figure 53. The program total represents the number of publications where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

FIGURE 53 Total Number of BCMHSUSRI Publications by Type and Category



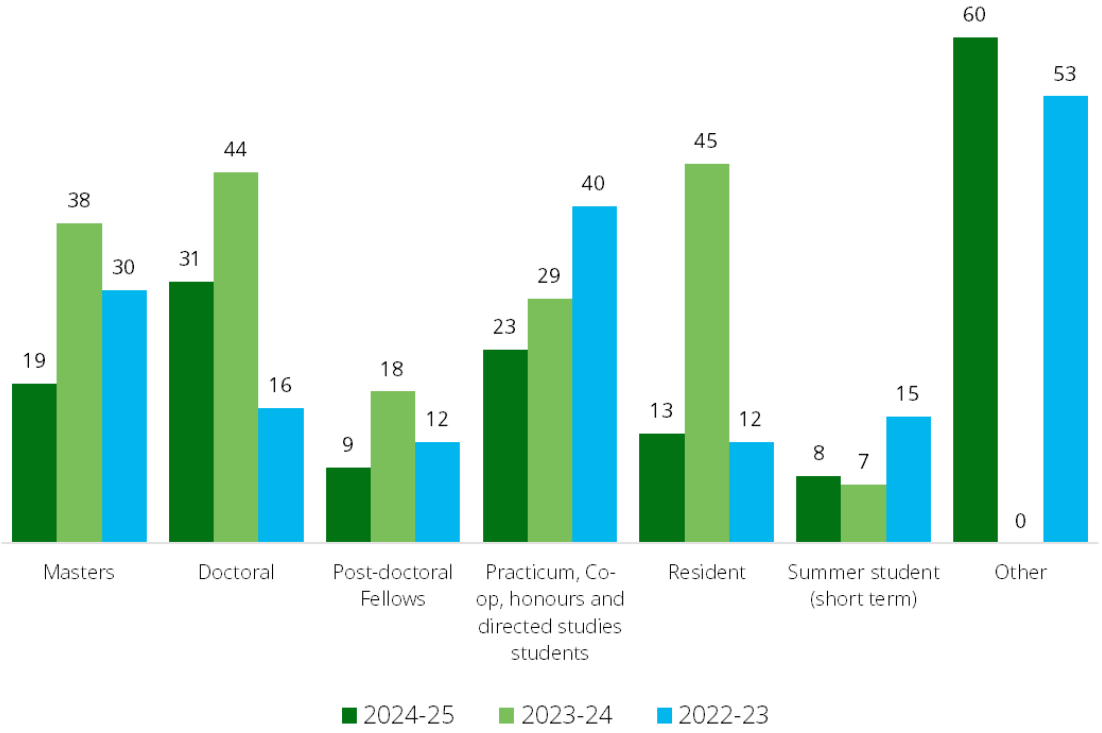
Building Research Capacity

BCMHSUSRI had a total of 14.5 researchers in FY 2024-25, a decrease in 2 from FY 2023-24. See Figure 54 for the number of BCMHSUSRI researchers by fiscal year, including affiliate investigators.

FIGURE 54 Total Number of BCMHSUSRI Researchers by Category and Fiscal Year

During FY 2024-25, BCMHSUSRI researchers provided training and supervision to a total of 163 trainees, a decrease of 18 over last fiscal year (see Figure 55).

FIGURE 55 Total Number of BCMHSUSRI Trainees by Type and Fiscal Year



Advancing Health and Policy Benefits

See Table 19 for a detailed breakdown of BCMHSUSRI clinical trial activity by fiscal year.

TABLE 19 BCMHSUSRI Clinical Trials

	FY 2022-23	FY 2023-24	FY 2024-25
Total Number of Clinical Trials Active during the FY	8	8	7
Status of the Trial at the end of the FY:			
Total Number of Approved Trials	7	6	3
Total Number of Trials that closed during the FY	1	2	4
Enrollment Numbers:			
Expected Local Subject Enrollment for the study term	882	894	974
Total Cumulative Subject Enrollment at the end of the FY	523	457	369

Grant funding type is reported for clinical trials in Figure 56. 57% of BCMHSUSRI's clinical trials are grant funded.

FIGURE 56 BCMHSUSRI Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the Fiscal Year

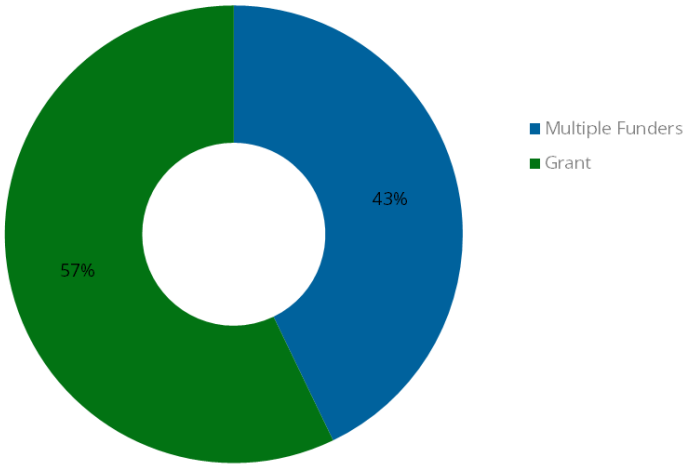


TABLE 20 BCMHSUSRI Research Outcomes

BC Mental Health & Substance Use Services Research Institute (BCMHSUS) – Research Outcomes
Understanding the relationship between Opioid Agonist Treatment and overdose among community populations and people who have been incarcerated in provincial correctional centres. Evidence to Inform Overdose Prevention. **Classification:** System – Other type (Access and equity in treatment delivery; evidence-based policy and prescribing practices) In 2024, three studies provided important evidence to guide overdose prevention efforts in both community and correctional settings. Findings show that access to opioid agonist treatment (OAT) during incarceration in British Columbia is linked to a significantly lower risk of nonfatal overdose after release—highlighting the need for sustained OAT access across the justice system. Additional research examined how OAT and co-prescribing practices, including risk mitigation guidance and stimulant medications, influence overdose risk. These studies underscore the value of evidence-based treatment and prescribing policies to reduce harm and improve outcomes for people at high risk of overdose, including those with recent incarceration histories.
Studies of the effects of mental and substance use disorders on healthcare utilization, and on risk of dementia in people living with HIV. **Classification:** Patient – Delay of disease progression/survival Patient – Improvements in timely access to care Three studies focus on the importance of mental and substance use disorders on healthcare utilization, and on risk of dementia in people living with HIV. These findings underscore the urgent need for integrated care models that address mental health, substance use, and HIV together. Strengthening support for these overlapping challenges can improve health outcomes and reduce long-term system costs.
Establishment of criteria for relapse of schizophrenia and related disorders **Classification:** Patient – Protocols and guidelines This paper from an international expert group establishes criteria for relapse of schizophrenia and related disorders. The criteria can be used in protocols for clinical trials, and in service evaluation. Researchers analyzed data from over 2,300 patients across seven clinical trials. They found that a 12-point or greater increase in the PANSS (Positive and Negative Syndrome Scale) reliably indicated relapse, as it corresponded with worsening overall illness and reduced daily functioning. This threshold had strong accuracy when compared to doctor assessments and hospitalizations. Including specific symptom changes (like hallucinations or disorganized thinking) further improved detection. The study advises against using percentage-based changes, as their meaning varies depending on a person's starting point. This new definition can help doctors and researchers better monitor patients and compare treatments.
Improved Cognitive Function through Research-based Cognitive Interventions and Access to Novel Therapies Via Research **Classification:** Patient – Delay of disease progression/survival Research-based cognitive interventions are improving the lives of individuals with psychosis. Specifically, a BCMHSUS researcher shares that his research extends the benefits of therapies like Cognitive Remediation Therapy (CRT), Metacognitive Training (MCT), and Cognitive Behavioural Therapy (CBT), equipping individuals with strategies to navigate cognitive challenges and biases. Furthermore, his work emphasizes how research studies facilitate access to novel cognitive therapies not yet widely available, reaching diverse populations which previously lacked such treatment. These initiatives also expand training for clinicians, thereby increasing the number of professionals capable of delivering these critical interventions within communities. Ultimately, these efforts aim to enhance cognitive function and potentially mitigate illness-related decline.

Psychostimulant Substitution Therapy for the Treatment of Stimulant Use Disorders in Patients with Schizophrenia or Schizoaffective Disorder: A Systematic Review

Classification:
Patient – Protocols and guidelines
System – Process of care-standardization

A first systematic review of an off-label treatment of patients suffering from concurrent primary psychotic disorders and stimulant use disorders. People with both schizophrenia or schizoaffective disorder (SSD) and stimulant addiction (StUD) often face serious challenges and poor health outcomes. Some research suggests that using prescription stimulants as a safer substitute might help those with stimulant addiction, but it's unclear if this works for people who also have SSD. This review searched several medical databases for studies on this topic. Only seven studies met the criteria, most of which were small and not high-quality. Results were mixed, and the one higher-level study showed little benefit. Overall, there isn't enough solid evidence to say whether this treatment is safe or effective for people with both SSD and StUD. More high-quality research is needed to guide future treatment decisions.

Enhancing Integrated Treatment Programs for Severe Concurrent Substance Use and Mental Disorders: Insights on Overdose from the ROAR CANADA Project

Classification:
System – Process of care-standardization

This study from the ROAR CANADA project looked at people with both severe mental illness and substance use disorders to understand what increases their risk of drug overdose. Researchers analyzed data from three Canadian treatment centres. They found that 65% of participants had overdosed at least once, with an average of about eight overdoses per person. While impulsivity and trauma were common, only a history of trauma—especially lifetime trauma—was clearly linked to higher overdose risk. The study highlights the need for trauma-informed care in treating this vulnerable group. Integrating trauma support into existing addiction and mental health programs may improve outcomes and help prevent overdoses, which is especially important during the ongoing overdose crisis.

The functional utility of the Advanced Clinical Solutions-Social Perception Affect Naming subtest in treatment-resistant psychosis

Classification:
Patient – Access to new treatment/technology

This BCMHSUS research team demonstrated that incorporating a novel measure of social cognitive ability—specifically, a facial affect naming test—into neuropsychological evaluations for individuals with treatment-resistant psychosis provides valuable clinical insights. Notably, the inclusion of this test enhances the ability to predict real-world functional outcomes, thereby informing more effective and individualized treatment recommendations. This work holds significant clinical relevance, as it contributes to evolving best practices in neuropsychological assessment for this complex patient population.

Impaired Insight in Concurrent Disorders: Identifying Patterns in Drug Seeking Behaviours

Classification:
Patient – Other type (Optimizing understanding of patient's perspective)

Impaired insight has a huge impact on treatment seeking. Understanding mechanism of "impaired insight" may be different for different disorder and it is important to understand the issue of impaired insight. The study helps us better understand how thinking problems, drug use, and self-awareness interact in people with these overlapping conditions. While it's tough to measure how aware these individuals are of their behavior, the findings suggest new treatment options—like helping them shift their attention away from drug cues, or using brain training to improve memory and decision-making. Future research should look at combining these brain-based treatments with talk therapy to improve recovery outcomes.

REGISTRIES & DATASETS

Provincial Health Services Authority

Advancing Health and Policy Benefits

For the twelfth year, data was collected from PHSA's registries and datasets to capture information around database users and how these datasets support research – all of which provide a clear picture of the benefits of using these datasets for research.

Data stewards for a total of 13 PHSA registries or datasets were invited to participate in a survey designed to assess the research activities of the registry/dataset. Completed surveys from 12 out of the 13 registries/datasets were obtained. The Research Metrics Working Group drew a distinction between two types of databases that might be counted. The first are those that serve as registries. These are the result of significant infrastructure investment in the collection of longitudinal data that are regional, provincial, or national in scope regarding provision of services to specific population(s), maintained for the purposes of undertaking analysis, surveillance and/or research. They represent a significant resource for and investment in research. The second (not collected) are short-term, project-related databases that are primarily grant funded and are not maintained for use beyond the term of a given research project.

Registry/Dataset Purpose

The information on each registry/dataset was compiled from online resources and is described below.

Registry/Dataset	Purpose
BC Cancer Registry	The BC Cancer Registry is a population-based registry of all cancers diagnosed in British Columbia residents. It collects data and generates cancer statistics on the BC Population for the purpose of monitoring the burden of cancer in the province. It also serves as a source of information for research.
BC Cardiac Registry (HEARTIS)	Heart Information System (HEARTis) tracks a patient journey for all current and future cardiac procedures, throughout British Columbia, from registry on the waitlist to procedure completion and follow up. Its purpose is to support clinical care, quality assurance and improvement, and outcome-based research.
BCCDC COVID-19 Dataset	This is an integrated dataset utilized for the management of the COVID-19 pandemic and includes data from the Ministry of Health, Regional Health Authorities, and PHSA.
BC Children's BioBank	The mission of the BCCH BioBank is to provide a comprehensive service for the collection, processing, storage, rapid access and retrieval of biospecimens and clinical information for research projects using a professional and compassionate approach to patient consenting that adheres to the highest standards of research ethics and patient privacy. A single biospecimen from one patient has the ability to fuel numerous research projects, any one of which might lead to an important medical breakthrough. BC Children's Hospital BioBank collects samples from patients at both BC Children's Hospital and BC Women's Hospital.
BC Perinatal Database Registry (BCPDR)	The BCPDR contains data abstracted from obstetrical and neonatal medical records on nearly 100% of births in the province of British Columbia from over 60 hospitals as well as births occurring at home attended by BC registered midwives. The BCPDR also collects data on maternal postpartum readmissions up to 42 days post-delivery and baby transfers and readmissions up to 28 days after birth. Data access is provided for public-interest research purposes, surveillance, program delivery, and evaluation.
BC Trauma Registry	Provides data collection, reporting and support of research and quality initiatives related to trauma care.
Breast Cancer Screening Database	Clinical system for scheduling, reporting and tracking of screening mammography exams.
Central Transfusion Registry	The Central Transfusion Registry (CTR) is a database operated by the BC Provincial Blood Coordinating Office (PBCO) and contains records of recipients who have received blood and blood products in British Columbia and the Yukon. The CTR was the first population-based transfusion registry in Canada and remains one of the largest such registries in North America since its inception in 1999.

Registry/Dataset	Purpose
Cervical Cancer Screening Database	A population based clinical system for cervical cancer screening as well as a lab system for all gynaecological cytology performed by the Provincial lab.
Endometriosis and Pelvic Pain Interdisciplinary Cohort (EPPIC)	A prospective data collection to evaluate patient outcomes after interdisciplinary care for endometriosis and pelvic pain
Lung Cancer Screening Program	The BC Lung Screen Trial provides the only access to organized lung cancer screening to eligible B.C. residents.
PROMIS – BC Renal/BC Transplant Registry	Patient Records and Outcome Management Information System – is the renal care community's clinical information system. With data collected from the 39 renal units in British Columbia, PROMIS supports: Individual patient care management; Renal unit management; Continuous quality improvement and research; Outcomes-based planning. PROMIS database is used as a source of important epidemiological data in support of clinical trials and for assessing new therapies.
Tumour Tissue Repository (TTR)	TTR is a provincial resource to support translational cancer research at BC Cancer, across Canada and internationally. The TTR is a state-of-the-art tumour bank that collects tissues, blood, and clinical information and processes these to create anonymous cases that can be studied by cancer researchers to understand how cancer develops, how it grows, how it spreads, and how it responds to treatment.

Supporting Research Activities

For FY 2024-25, eleven registries/datasets were used for the purpose of research. In addition, respondents were asked to identify other activities they provide in support of research. Table 21 lists the support activities by registry/dataset and shows the number of times in the past three fiscal years that a registry has provided a particular support activity. These research support activities are ranked from most provided to least over the three-year period.

TABLE 21 Research Activities Supported by Registries and Datasets

		Registries and Datasets													
		BC Cancer Registry	BC Cardiac Registry	BCCDC COVID-19 Dataset	BC Children's BioBank	BC Perinatal Database Registry	BC Trauma Registry	Breast Cancer Screening Database	Cervical Cancer Screening Database	Endometriosis and Pelvic Pain Interdisciplinary Cohort	Lung Cancer Screening Program	PROMIS - BC Renal	PROMIS - BC Transplant	Tumour Tissue Repository	Grand Total
Research Support Activity	Support in managing and linking data	3	3	3	3	2	3	3	1	3	2	3	1	3	33
	Assist in identifying knowledge gaps and improvement needs	3	3	3	1	3	2	3	2	3	3	3	2	1	32
	Support in ensuring studies meet regulatory standards	3	2	1	1	2	1	2	1	3	2	3	3	3	27
	Support in designing research studies		3	2	2	3	2	3		3	2	3	3	3	29
	Support in conducting biostatistical analysis		2	3		2	2	3		3	2	3	2		22
	Provide specialized and multidisciplinary methodological expertise	3	3	2		2	2	2			2	3	2		21
	Facilitate communication to identify pertinent research question		3	3		2	2	3	1	1	2	3	2		22
	Application of new technical capabilities to provide more timely access to wider range of data	3	3	1	1	3	3	2			2	2	1		21
	Teaching and hands on training for the above			1		3	1	1				2		1	9
	Support in providing and teaching project management skills			1			1	2		1	1	3			9
	Grand Total	15	22	20	8	22	19	24	5	17	18	28	16	11	225

Respondents were asked if they submit data to external organizations for the purposes of research. Refer to Table 22 for the breakdown of external dataset type by registry/dataset for FY 2024-25. This table lists the type of external dataset and shows the number of times in the past three years that the registry has submitted data. The type of dataset is ranked from most submitted to least.

TABLE 22 Provision of Data to External Datasets by Registry

		Registries and Datasets									
		BC Cancer Registry	BC Cardiac Registry	BC Children's BioBank	BC Perinatal Database Registry	Breast Cancer Screening Database	Lung Cancer Screening Program	PROMIS - BC Renal	PROMIS - BC Transplant	Tumour Tissue Repository	Grand Total
Type of External Dataset	Pan-Canadian dataset	3		2	1			1	2	1	**10**
	Provincial dataset		2		3			3	2		**10**
	International dataset	3					1		3		**7**
	Cross feeding within PHSA				1	1		2	1		**5**
	Other		1		2	1			1		**5**
	Grand Total	**6**	**3**	**2**	**7**	**2**	**1**	**6**	**9**	**1**	**37**

Names of external datasets include:

Provincial:
Data Innovation Program – Province of British Columbia
Health Data Platform BC (HDP BC) – Ministry of Health
Platform for Analytics & Data (PANDA) - PHSA
Population Data BC
Public Health Reporting Data Warehouse (PHRDW) – BCCDC

Pan-Canadian:
Canadian Cancer Registry – Statistics Canada
Canadian Clinical Research Network
Canadian Organ Replacement Registry (CORR) – Canadian Institute for Health Information (CIHI)
HOPE Research Centre – Sunnybrook Research Institute
Marathon of Hope Cancer Centres Network (MOHCCN)
Neuromuscular Disease Network for Canada (NMD4C)
Precision Oncology for Young People (PROFYLE)

International:
Cancer in North America (CiNA) – North American Association of Central Cancer Registries (NAACCR)
International Agency for Research on Cancer (IARC) – World Health Organization (WHO)
International Society for Heart & Lung Transplant (ISHLT)
International Cancer Benchmarking Partnership (ICBP) – Cancer Research UK (CRUK)
International Association for the Study of Lung Cancer (IASLC)

Nature of Research Activities

CIHR (Canadian Institutes of Health Research) categorizes health research into four broad themes: Biomedical Research, Clinical Research, Health Services Research, and Social, Cultural, Environmental and Population Health Research. Research pursued using the registries/datasets above are categorized in Figure 57. Access requests are summarized in Figure 58. For examples of the types of research questions posed by researchers, see Table 23 below.

FIGURE 57 Ranking of Predominant Nature of Research Questions Using Data from the Registries/Datasets

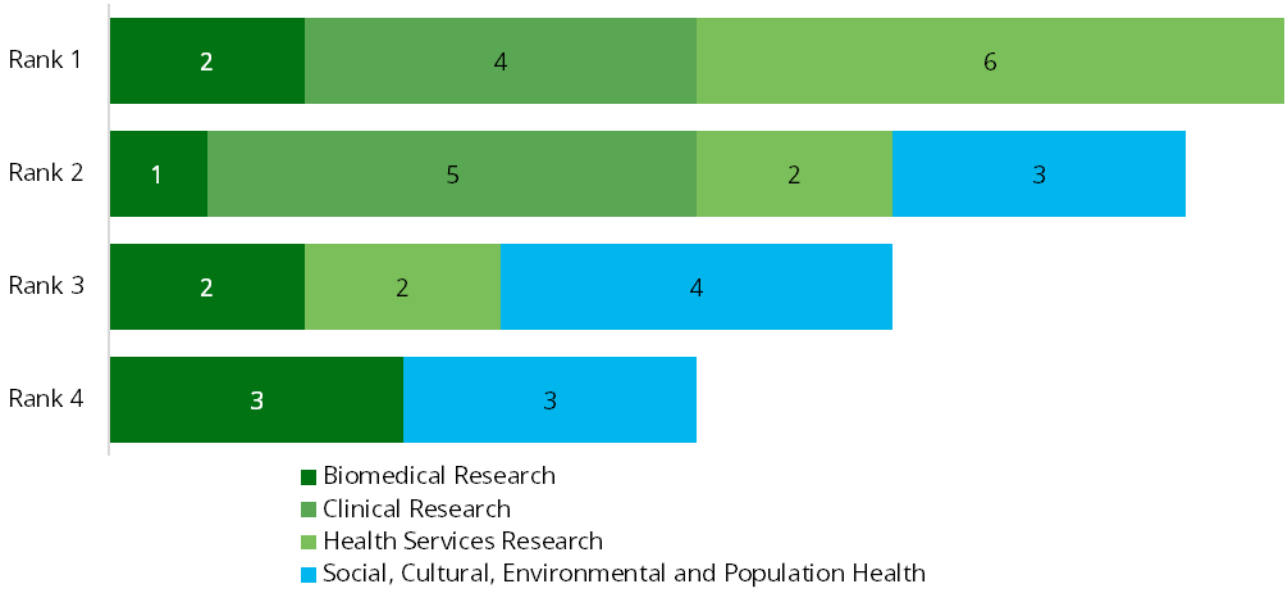


FIGURE 58 Research Access Requests and Approvals from Registries/Datasets by Fiscal Year

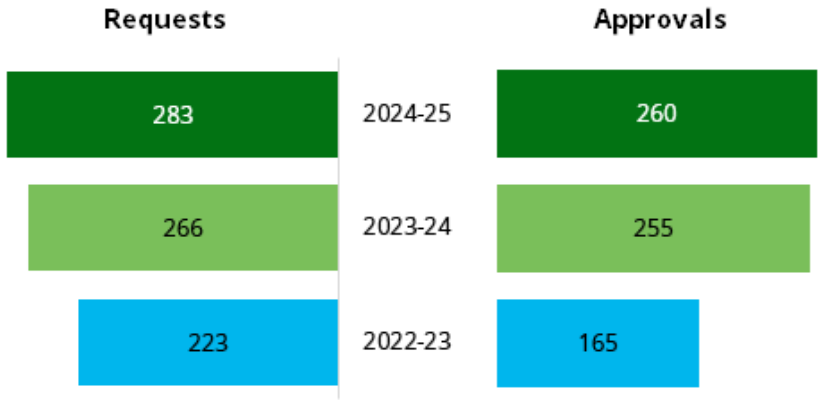


TABLE 23 Examples of FY 2024-25 Research Questions Posed by Investigators Using Data from PHSA Registries and Datasets

BC Cancer Registry	Comparing LiRADS tumour response criteria (2024) with pathology of explant specimens for patients treated with SBRT and y 90 for the treatment of hepatocellular carcinoma
	PSA nadir and early discontinuation rates for patients with metastatic castration sensitive prostate cancer treated with abiraterone acetate and prednisone, enzalutamide or apalutamide and analysis of genomic biomarkers for response
	Molecular and Histologic Impact on Pembrolizumab and Lenvatinib Treatment in Recurrent Endometrial Cancer
	Opportunity to reduce environmental impact of systemic cancer drug treatment: Estimating reduction in carbon footprint across BC Regional Cancer Sites by extending pembrolizumab treatment interval
	Failure for Deep Inspiratory Breath Hold (DIBH) in LEFT sided breast cancer patients requiring adjuvant radiation at a single BC Cancer site: A retrospective analysis of causative factors
	Clinical outcomes of rectal squamous cell carcinoma treated with definitive chemoradiation without surgery
	Retreatment with R-CHOP-like therapy in Patients with Late Relapse of Diffuse Large B-Cell Lymphoma (DLBCL)
BC Cardiac Registry	Characterizing antithrombotic regimens after surgical mitral valve repair: a retrospective descriptive study and semi structured cardiac surgeon interview
	What Extent of Intervention is Warranted Following Myocardial Infarction? Aggressive versus Conservative Interventional Management of MI Patients in British Columbia
BCCDC COVID-19 Dataset	How does the all-cause healthcare utilization of patients with vaccine-associated myocarditis compare to vaccinated people who did not have myocarditis post-vaccine?
	What is the difference in COVID-19 clinical severity across different variants of concerns in the context of key public health measures and within various social determinants of health?
	How can machine learning approaches, informed by clinical input, be used to refine an algorithm to identify people living with Long COVID in population-level health administrative data?
	How do healthcare utilization rates compare between COVID-19 survivors with and without Long COVID over the 2.5 years following initial infection?
	What is the long-term impact of COVID-19 infection on the risk of major adverse cardiovascular events?
	Does SARS-CoV-2 infection increase the risk of developing incident diabetes beyond 3 years, compared to those who tested negative, among adults in British Columbia?
BC Children's BioBank	Microbiome changes in pediatric renal transplant recipients.
	Association between maternal and infant iron status.
	Role of immunotherapy in pediatric sarcomas.
	Development of a human multi-cellular engineered living culture system.
	Enhanced immune monitoring in pediatric kidney transplant recipients.
	Overcoming the barriers to successful immune therapy for acute leukemia.
	Deep phenotypINg Of infantS And toddlers Undergoing food oral immunotheRapy (DINOSAUR Study).
	Efficacy and Adverse Side Effects of two forms of Iron in prenatal micronutrient supplements (EASE-Iron): A randomized controlled trial.
	EpiSign BC: Assessing improvements in diagnosis of rare disease using clinical epigenomics.
	Ustekinumab RCT- UST1D2: A Clinical phase II/III trial in newly diagnosed Type 1 diabetes.
BC Perinatal Database Registry	Research Questions: 1- What are the reference intervals (RI) for iron in pregnancy? 2- Are those RIs different than what is currently used? 3- What are the ferritin measurement practices in pregnancy? 4- Are serum ferritin levels in pregnant persons associated with maternal health outcomes? 5- Are serum ferritin levels in pregnant persons associated with neonatal health outcomes? Research Hypothesis: a. Serum ferritin reference intervals are different in pregnancy than the general population. b. Screening for ferritin deficit is not standard practice and relies on the presence of low hemoglobin level at the moment. c. Low ferritin levels during pregnancy are associated with maternal transfusions, sepsis, admission to intensive care and low birth weights.

BC Perinatal Database Registry	In GDM patients, telemedicine care impacted by the COVID-19 pandemic is non-inferior to pre-pandemic in-person care with respect to important maternal and fetal adverse outcomes.
	1. To identify the impacts of contraception policy and practice changes on contraception use. 2. To describe the geographic distribution and characteristics of the contraception workforce, trends over time, and impacts of contraception policy and practice changes on contraception workforce composition. 3. To identify the frequency and characteristics of "contraception deserts", geographic regions lacking adequate access to long-acting reversible contraception (LARC) services and impacts of contraception policy and practice changes on contraception desert. 4. To describe users of long-acting reversible contraception (LARC), populations with lowest uptake, time trends in LARC use and impacts of contraception policy and practice changes on LARC use. 5. To identify the impacts of contraception policy and practice changes on reproductive health outcomes influenced by contraception access, and health system costs.
	We propose to combine our expertise in epidemiology, health services research, health economics, and perinatal research in rheumatology with the data-rich resources in British Columbia to explain and inform the contemporary epidemiology, treatment, and outcomes (including maternal and neonatal), and healthcare utilization. Using linked provincial health databases including a population-based perinatal data registry, our research questions and corresponding objectives (and where relevant, hypotheses), to be undertaken for individuals with rheumatic diseases are: My overall aim is to generate comprehensive and up-to-date evidence on the impacts of arthritis medications on maternal and fetal/neonatal health. My specific aim is to: Evaluate the perinatal impacts of tsDMARDs and bsDMARD by quantifying the magnitude of the risk of a) maternal outcomes; and b) fetal/neonatal outcomes.
	Objective 1) Describe infant-postpartum hospital service use, health outcomes, and health system costs according to infant-postpartum care model, prenatal and delivery care provider, sociodemographic characteristics and region, and clinical risk strata. Objective 2) Evaluate differences in hospital service use, infant-maternal health outcomes, and health system costs for the midwife-led infant-postpartum model compared with the standard models controlling for sociodemographic factors and clinical risk. Hypothesis: Hypothesis 1) Infant-postpartum hospital service use, health outcomes, and health system costs will differ by infant-postpartum care models, prenatal and delivery care providers, sociodemographic characteristics and regions, and clinical risk strata. Hypothesis 2) Among comparable individuals, midwife-led infant-postpartum care models lead to improvements in some infant or maternal outcomes and decreases in some health services use.
	Objective and Hypothesis One: Assess whether in utero exposure to wildfire smoke is associated with adverse birth outcomes. We hypothesize that pregnant women who were exposed to wildfire smoke were at increased risk of adverse birth outcomes compared with women who were less exposed. Objective and Hypothesis Two: Assess whether in utero exposure to wildfire smoke is associated with increased risk of adverse health outcomes in the first year of life. We hypothesize that in utero exposure to wildfire smoke is associated with increased risks of these outcomes in the first year of life. Objective and Hypothesis Three: Assess whether exposure to ambient wildfire smoke during the critical neonatal period (birth to 28 days) is associated with increased risk of adverse health outcomes in the first year of life. We hypothesize that neonates exposed to wildfire smoke have increased risks of adverse health outcomes in the first year of life. Student Project Objectives and Hypothesis: Hypothesis and Objective 1: To examine whether in utero exposure to wildfire smoke is associated with adverse respiratory outcomes in the first year of life. Adverse respiratory outcomes will be evaluated using prescriptions of medications to treat respiratory disorders, use of antibiotics related to respiratory infections, length of stay in hospital due to respiratory diseases, and physicians' diagnoses of any respiratory diseases. We hypothesized that infants with higher wildfire smoke exposure in utero will have an increased risk of respiratory outcomes in the first year of life. Hypothesis and Objective 2: To examine whether exposure to ambient wildfire smoke during the critical windows of fetal lung development is associated with an increased risk of adverse respiratory outcomes in the first year of life. We hypothesize that higher smoke exposure during specific windows of lung development during pregnancy will be associated with a higher risk of respiratory outcomes.
	What is the association between inadequate gestational weight gain (below 5 kg) and the risk of small-for-gestational-age (SGA) births in pregnant women with obesity and gestational diabetes mellitus (GDM)?

BC Perinatal Database Registry	1) Calculate the association between pathologically confirmed endometriosis and endometriosis-associated ovarian cancers (EAOCs) in a cohort that includes undiagnosed patients. 2) Determine how surgical and hormonal treatment for endometriosis influence risk for EAOC. 3) Determine whether objective biomarkers that can be used alongside (or instead of) pathologist assessment of atypia will better predict endometriosis that is high risk for malignant transformation.
	1. To understand how interventions during labor and delivery might influence risk for ASD in the child. Interventions would include epidural analgesia, oxytocin administration, other forms of labor induction, etc. 2. To understand how maternal conditions, maternal health and wellbeing, and medical interventions during pregnancy and the preconception period may influence risk for ASD in the child. 3. To understand how fetal exposures to different medications taken by the mother (e.g. antibiotics), behavior-related exposures (e.g. maternal smoking), and maternal chronic disease (e.g. diabetes, asthma, etc.) are related to later risk for ASD in the child. 4. To continue to investigate how maternal mental health (i.e. mood, thought, somatic, substance use disorders) and psychotropic medication treatment may be associated with risk for ASD or other developmental disorders in the child. 5. To understand whether environmental exposures (i.e. air pollution, green space, etc.) during pregnancy are associated with a higher risk for the development of ASD. 6. Understand factors that alter developmental trajectories in children assessed for ASD, diagnosed with ASD, or diagnosed with other developmental disabilities compared to typically developing children. 7. To examine the developmental trajectories of children diagnosed with ASD in terms of their social, emotional, and cognitive-academic development, social relationships, and participation during the elementary school years. 8. To evaluate the relationship between gestational age, indicators of intrauterine growth (e.g. small for gestational age birth), and ASD, and to determine whether these factors are associated with different developmental trajectories among children with ASD and other developmental conditions compared to typically developing children. 9. To determine whether familial context (e.g. maternal and paternal mental health, SES, etc.) during childhood influences the developmental trajectories of children assessed for ASD, diagnosed with ASD, and/or diagnosed with other developmental conditions. 10. To describe the role of pain, self-injurious behavior and aggression in the developmental trajectories of children with ASD.
	1. To validate pre-operative clinical features that predict outcomes after surgery for endometriosis at a tertiary center. Hypothesis: the presence of pre-operative clinical features of central pain will be associated with poorer pain-related outcomes after endometriosis surgery. 2. To determine whether biomarkers in surgically excised endometriosis tissue predict outcomes after endometriosis surgery at a tertiary center. Hypothesis: Somatic mutations and increased expression of neurogenesis markers will be associated with worse pain-related outcomes after endometriosis surgery. 3. To compare our patients' outcomes at a tertiary center for endometriosis and pelvic pain with the outcomes of patients with endometriosis elsewhere in BC Hypothesis: Endometriosis care at our tertiary center will result in improved patient outcomes compared to endometriosis care elsewhere in the province.
BC Trauma Registry	Characterization of traumatic occupational injuries over the last 10 years according to demographics, substance use, injury presentation and severity, and other risk factors.
	Examination of how obesity affects burn wounds and hospital stays/mortality for burn wound patients.
	Impact of specialized vs non-specialized acute hospital care on survival among patients with acute incomplete traumatic spinal cord injuries: A population-based observational study from British Columbia, Canada
Breast Cancer Screening Database	What were the relapse and survival outcomes for breast cancer patients diagnosed from 2007 to 2012 by stage and overall survival?
	How does the frequency of TNBC and HER2+ cancers in clinical stage 1 and the addition of routine use of neoadjuvant chemotherapy (gained momentum in 2012) differ between screened vs. non-screened detected breast cancers?
	What is the racial/ethnic and age distribution in the screened population and how can this inform health promotion campaigns for breast screening?
	How does breast cancer treatment differ between screened and non-screened detected breast cancer patients?

Breast Cancer Screening Database	How has the introduction of modern screening technologies (e.g., digital mammography) changed the stage distribution of screen-detected cancers comparing patients diagnosed from 2007-2012 vs. 20015-2020)?
	Does a single letter from patients' family physician remain more effective than a reminder postcard in providing sustained screening mammography return rates among women who were initially overdue for screening?
	What are the gaps the breast cancer care when comparing rural populations to urban populations in BC?
Endometriosis and Pelvic Pain Interdisciplinary Cohort	What are the characteristic differences between women with and without midcycle pain in a population of women with endometriosis.
	Does the lesion mutational status of endometriosis affect the effectiveness of hormonal therapy?
	Are higher scores on the CSI/PSQ/DN4/PD-Q/S-LANSS/FSS questionnaires associated with lower QST thresholds indicating greater central sensitization in people with endometriosis?
	How do gender and/or sexual minority patients with endometriosis, and gynaecologists treating this population, understand and approach working with one another.
	What are the health comorbidities experienced by mid-life women with endometriosis and how they are associated with menopausal symptoms, and also their impact on quality of life and work.
Lung Cancer Screening Program	Proportion of lung cancer patients who would be eligible for lung screening if screening were available before diagnosis of lung cancer
	Impact of co-morbidities on screening eligibility
PROMIS – BC Renal	What is the rate of progression of kidney disease in different conditions and geographical locations
	What was the impact of COVID 19 on progression and on outcomes of patients who were enrolled during vs before the pandemic in the kidney care problems
	Is there a threshold of KFRE that would improve VA creation timing?
	What is the environmental impact of kidney services (dialysis, kidney clinics, transplant) in various locations in BC?
	Is there a geographical distribution to different kidney diseases?
	What are the drivers of increase cancer rates in patient with GN?
PROMIS – BC Transplant	What difference is there, if any, in the duration of antiviral therapy that patients received in the pre- versus post-laboratory reporting practice change? What difference is there, if any, in the viral load at which therapy is initiated, including the proportion of individuals who had therapy started when CMV viral loads were detected at <1000 IU/mL?
	1. How does the performance of the DynaMELD algorithm compare to clinical baseline indices (MELD, MELD-Na, MELD 3.0) using TDCI when evaluated with the validation dataset? 2. How can DynaMELD be adjusted to effectively incorporate hepatocellular carcinoma (HCC)-specific variables and MELD exception points? 3. What impact will the refined DynaMELD model have on fairness and efficiency in liver transplant allocation compared to the existing standard (MELD-Na and MELD 3.0)? 4. How does DynaMELD algorithm perform across different sexes, genders, indications for liver transplant (PSC, PBC, MASLD versus others), as well as race and ethnicity?
	Can a dedicated quality improvement intervention increase the proportion of daytime transplant procedure occurrence?
	What are trends in prescription prevalence and dynamics of GLP1RA in CKD patients and KT recipients in the last 10 years?

PROMIS – BC Transplant	What are the policies and procedures for organ and/or tissue donation following Medical Assistance in Dying (MAiD) in Canada? Specific Research Questions: (1) To what extent is language regarding organ and/or tissue donation, such as 'Consider Organ and/or tissue Donation' explicitly included in the provincial MAiD documents or assessment forms, if any, is being used by assessors/providers? (2) What are there any mechanisms in place, if any, to determine the number of missed donation opportunities in the context? (3) What medications are commonly used in the MAiD provision (e.g., KCl) across provinces/programs, and are there variations between hospital and home pathways? (4) How is organ and/or tissue donation following MAiD managed in terms of process coordination, resources, and logistics across various provinces in Canada? (5) What internal or external oversight exists across provinces regarding to policies: internal ethics committee review, approval from the provincial medical college, etc.? (6) In which Canadian provinces is organ and/or tissue donation following MAiD at home currently practiced, and what are the prevalent protocols and practices? (7) How is death determined in organ and/or tissue donation following MAiD at home vs hospital settings across Canada? (8) How are ethical issues (directed donation, waiver of final consent, Track 1 vs Track 2) managed across Canadian provinces? (9) Have there been reported psychological and emotional impacts on healthcare professionals involved in organ and/or tissue donation following MAiD, and how are they coping with these challenges? (10) What educational strategies are available for healthcare providers working with organ and/or tissue donation following MAiD? (11) What are the existing public educational materials available to MAiD patients who want to donate their organ and/or tissues across Canadian provinces? (12) What are the characteristics (e.g., underlying diagnosis) of potential/actual MAiD donors?
Tumour Tissue Repository	Integrated genomics and spatial heterogeneity to enhance personalized therapies for rare metaplastic breast carcinomas
	Harnessing the immune response in exceptionally long-term survivors of ovarian cancer to develop novel therapeutics
	A modular platform for harmonized, multiplex immune profiling of MOHCCN Gold Cohorts across Canadian institutions
	Integrated Immunotherapy for Ovarian Cancer
	Understanding the role of B cells in anti-tumor immune responses
	CLIC-2201 for the Treatment of Patients With Relapsed/Refractory CD22 Positive Hematologic Malignancies (CLIC-02)
	Predictive Biomarkers for Patients with Genitourinary Cancers Receiving Checkpoint Inhibitors: New Insights into Gamma-Delta T Cells

APPENDIX 1 – GLOSSARY

TERM	DESCRIPTION *[DATA SOURCE]*
METRIC DEFINITIONS	
Metrics 1ab, 2b – Total Annual Grant Awards, Total Annual External Grant Awards by Major Funding Categories by PHSA program	Total Annual Award ($) for Grants, Awards and Contracts by Funding Source. *[Source: UBC Office of Research Services]*
Metric 1c – Annual Grant Application Success Rate by PHSA Program	Success rates for two CIHR operating grant competitions (March and September of applicable year). *[Source: CIHR website for National results; Programs self-report institute-specific results]*
Metric 1d – Total Number of Publications	Total number of publications that is a Book, book chapter, report produced for the government, peer-reviewed article, case report, essay, literature review, or monograph. Excluded are published abstracts, editorials, summaries, letters to the Editor, and work that is in press or submitted for publication. *[Source: Programs self-report using SciVal data]*
Metric 2a – Total Number of Trainees by PHSA Program	Total Number (head count, not FTE) of Research Trainees by Student Type. (Exclude clinical trainees who may participate in a research rotation). Included are research trainees who are primarily supervised by a researcher affiliated with the PHSA program during all or a portion of the reporting year. *[Source: Program-specific trainee statistics]*
Metric 2c – Total Number of Researchers by PHSA Program	Count of researchers affiliated with PHSA in total and by program. *[Source: Research Institutes]*
Metric 2d – Infrastructure Investments - Major CFI Infrastructure Grants	Total $ for John R. Evans Leader's Fund (JELF) / Innovation Fund (IF) awards from Canada Foundation for Innovation. *[Source: UBC Office of Research Services]*
Metric 2e – Research Support Fund Program Grants	A federally funded grant to Canadian post-secondary institutions to help pay the indirect costs of research (e.g., salaries for research administrative staff, administrative costs associated with patent activities, maintenance of lab space). These annual grants are based on a formula related to tri-council award amounts (CIHR, NSERC, and SSHRC) and are paid to the research institutes based on a formal revenue sharing agreement. Due to how UBC is now reporting revenue precipitated by policy changes of the CAUBO (Canadian Association of University Business Officers), PHSA includes revenue related to the Research Support Fund program. *[Source: UBC Office of Research Services]*
Metric 3a – Number of Intellectual Property Disclosures, Patents by PHSA Program	Total number of Invention Disclosures, provisional patent and Patent Cooperative Treaties (PCT) applications by fiscal year. *[Source: BC Cancer Technology Development Office (BCTDO) and Innovation UBC]*

TERM	DESCRIPTION *[DATA SOURCE]*
METRIC DEFINITIONS	
Metric 3b – Licenses, Royalty Income and Number of Spin-off Companies	Total number of active license/assignment agreements and spin-off companies. **Gross licensing revenue** = Royalties + Equity Liquidated + Option Fees + License Fees + License Management + Technology Assignment **Royalties** - royalty payments including minimum annual royalty payments **License Fees** – upfront payments, milestone payments and other payments associated with the license Management - legal fees incurred by TDO (Technology Development Office) or UILO relating to the licensed IP and reimbursed by licensees *[Source: BCTDO and Innovation UBC]*
Metric 4a – Clinical Trials	Number of active trials and cumulative subject enrollment at the end of the year. Includes CT data for all PHSA Principal Investigators, and non-PHSA PIs who access PHSA facilities and resources. *[Source: UBC Office of Research Services]*
FUNDING TYPE CATEGORIES	
INFRASTRUCTURE AWARDS	
Capital, Equipment, Construction	Dollar amount including matched funding from government, industry, charities, etc., of grants for large infrastructure, capital or equipment. *[Source: UBC Office of Research Services]*
OPERATING GRANTS	
Operating Grants	Dollar amount for operating grants including when the salary component is embedded in a grant; includes establishment grants; includes development grants. *[Source: UBC Office of Research Services]*
Clinical Trials (4a)	Dollar amount for clinical trials, combining all funding sources. *[Source: UBC Office of Research Services]*
SALARY AWARDS	
Faculty and Other Personnel Support	Dollar amount of faculty salary awards including Chairs. *[Source: UBC Office of Research Services]*
Trainee Salary Support	Dollar amount of trainee salary awards including research allowances. *[Source: UBC Office of Research Services]*
Other Funding Type	Dollar amount of any grant, award, donation or contract that does not fit into the above categories.
FUNDING SOURCE CATEGORIES	
UBC RISe Sector	Sector denotes an area of the **economy** which includes: **Non-Profit** – funding provided mostly by private donations and endowments. **Industry** – funding provided by a for-profit business in the private or commercial sectors of business. **Government** – funding provided by local, provincial, national, federal, or foreign government. [definitions to be further developed with input from Working Group and RISe personnel] *[Source: UBC Office of Research Services]*
Canadian Industry	Canadian-based for-profit corporations.

TERM	DESCRIPTION *[DATA SOURCE]*
FUNDING SOURCE CATEGORIES	
Canadian Foundations & Non-Profits	Canadian not for profit organizations including foundations and charities. These include grants that are "internally" sourced from within PHSA, including those from a research institute or from an affiliated Foundation.
Canadian Educational Institution	Includes funding from any post-secondary institution in Canada. Foreign Educational Institutions are categorized under Foreign Other Source.
Canadian Government	Provincial, municipal, territorial, or federal governments and crown corporations in Canada.
Foreign Industry	For-profit corporations outside Canada, as determined by award payment or contract address.
Foreign Foundations & Non-Profits	Not for profit organizations including foundations and charities headquartered outside Canada.
Foreign Government	Provincial, municipal, territorial, or federal governments and government-controlled corporations outside Canada.
Foreign Other Source	All Foreign funding sources not captured in the above foreign categories.
CLINICAL TRIAL GRANT FUNDING TYPES	
Source of funds refers to the funder, sponsor, grantor, or agency (government, industry, and non-profit) that is providing the funds needed to undertake the project. Projects are not considered "For-Profit" if a sponsor is only collaborating and not funding the study (e.g., providing study drug or lab space only).	
Grant	Funding provided for specific projects by sponsors in the government or non-profit sectors.
For-Profit Sponsor (Industry)	Funding provided for specific projects by sponsors in the industry sector.
Grant-in-aid	Funding provided for general research activities by sponsors in any sector (Industry, Government or Non-profit)
Internal Funding	Funded by internal program department, program operational budget or non-profit foundation (e.g., salary award)
No Funding	No funding provided.
Other	Funding not yet known when ethics application was submitted.
Multiple Funding Type	Any combination of the above funding types.
RESEARCH TRAINEES' CATEGORIES	
Research Trainee	Total number of research trainees by student type excluding clinical trainees who are supported during their brief research rotations. Research trainees counted will be any individuals who are primarily supervised by a researcher affiliated with the PHSA program, during all or a portion of the reporting year.
Masters	Graduate students enrolled in a full-time master's program who are supervised by a faculty member affiliated with the PHSA program.
Doctoral	Graduate students enrolled in a full-time PhD program who are supervised by a faculty member affiliated with the PHSA program.
Post-doctoral	Full time post-doctoral fellows affiliated with a PHSA program
Summer Students (short term)	High school and or university students who are engaged in a short-term research program with the PHSA program for a limited period (e.g., over the summer, a few weeks)
Residents	MDs engaged in a residency program that may include a research rotation
Practicum, Co-op, Honors and Directed Studies Students	High school and/or university students whose assignment to the PHSA program is according to a practicum, co-op, honours and/or directed studies program
Other Research Trainee Type	(PHSA program to specify definition)