

**Appearance before the House of Commons Standing Committee on
Science and Research (SRSR)**

**February 2, 2023
12:00 p.m. to 1:00 p.m.**

(In-person)

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International Moonshot Programs

SYNOPSIS

International moonshot programs have led to major successes, improving livelihoods of people around the world. One example is the U.S. government-funded Cancer Moonshot which in four years has supported over 240 research projects identifying mechanisms that drive cancer and developing new treatments.

QUESTION

Could you please tell us how CIHR funds research that could build the foundation for larger moonshot projects?

KEY MESSAGES

- The Canadian Institutes of Health Research, or CIHR, promotes cutting-edge scientific discoveries through a wide range of investigator and priority-driven funding opportunities.
- Like our tri-agency counterparts, CIHR invests in research and researchers that are the foundation for a culture of innovation.
- This includes investing over many years in research conducted by Dr. John Dick, winner of the **2022 Canada Gairdner International Award** for the discovery of leukemic stem cells.
- His research has provided important insights on acute myeloid leukemia and has stimulated research on stem cells in other human cancers.
- CIHR-supported **fundamental research** informs these discoveries building the foundation for continued pursuit of new lines of inquiry.
- Our flagship **Project Grant** program is designed to support investigator-driven research with the greatest potential to advance health-related fundamental and applied knowledge, health research, health care, systems, and outcomes.
- **Graduate scholarships** and **post-graduate fellowships** contribute to attracting, developing, and retaining talent.

- To enhance conditions for future breakthroughs, we aim to equip trainees and early career researchers with the experiences and skills needed to lead high-impact, interdisciplinary health research careers in a rapidly evolving research landscape through opportunities such as the Health Research Training Platform.
- Bolstered by the scientific leadership of its institutes, CIHR supports ambitious projects leading to the achievement of **priority-driven goals**, such as disease prevention or enhanced treatment.
- For instance, initiatives led by CIHR's institutes have supported research that has led to scientific breakthroughs to address the most pressing health issues such as diabetes, cancer, antimicrobial resistance or rare diseases.
- Through our institutes, we are also supporting very promising new fields of health research such as "precision medicine" that takes into account individual variability in genes, environment, and lifestyle to improve disease treatment and prevention.

IF PRESSED ON MISSION-DRIVEN APPROACHES TO MOONSHOTS...

- CIHR's **Institutes** form a unique structure of 13 "virtual" hubs of experts in priority areas.
- The Institutes support research through **priority-driven funding opportunities and initiatives**, building the foundation for new discoveries in specific fields.
- For example, through the ***100 Years of Insulin: Accelerating Canadian Discoveries to Defeat Diabetes initiative***, CIHR collaborated with partners to support the ambitious project by **Dr. Timothy Kieffer's** team at the University of British Columbia to optimize the mass-production of cells suitable for transplant for new clinical trials of type 1 diabetes therapy.
- This project builds upon long-term support for research led by Dr. Kieffer on novel gene and cell therapy approaches to treat diabetes.

IF PRESSED ON CIHR-FUNDED RESEARCH THAT CAN POSITION CANADA FOR MOONSHOTS...

- The discoveries of CIHR-supported researchers and teams in the fields of **genetics, cell biology, immunology and inflammation, diabetes and neurosciences** research, among others, pave the way for potential moonshots and development of new prevention strategies, cures and treatments.
- For example, the genetic research of **Dr. Tak Wah Mak's** team at the Princess Margaret Cancer Centre has led to ground-breaking immunology and cancer breakthroughs. His T-cell receptor discovery is used by 5,000 laboratories around the world researching potential of immunotherapy to cure cancer and can be used in novel Alzheimer and fibrosis research.

IF PRESSED ON HOW CANADA CAN POSITION ITSELF TO BE COMPETITIVE, RESILIENT, AND RESPONSIVE TO CRITICAL CHALLENGES...

- In addition to points made by Dr. Adem, CIHR's unique position in the federal Health Portfolio has enabled research to meaningfully respond to emerging health issues in areas such as the COVID-19 pandemic, Post-COVID Condition, women's health, mental health, substance use, dementia, cancer, and others.
- These relationships with our Health Portfolio partners and provincial and territorial research funding partners have positioned CIHR to be responsive to these, and other critical challenges.

IF PRESSED ON HOW CAN WE LEVERAGE RELATIONSHIPS WITH THE US AND OTHER COUNTRIES...

- Similar to our colleagues in the other federal research funding agencies, CIHR works closely with other international funders.
- For example, the Scientific Director of CIHR's Institute of Infection and Immunity is the Chair of the Global Research Collaboration for Infectious Diseases, an international consortium of 28 research funding organizations.

- This relationship informed CIHR's funding opportunities and enabled coordination of the global research response to COVID-19.

***IF PRESSED ON BALANCING RISKS TO RESEARCH SECURITY,
WHILE TO PROMOTING OPEN SCIENCE AND INTERNATIONAL
COLLABORATION...***

- The federal research funding agencies promote research security measures like the National Security Guidelines for Research Partnerships, which are being piloted by our NSERC colleagues, so I would defer to Dr. Adem.

BACKGROUND

Important discoveries are enabled by decades of fundamental research that expands the knowledge of underlying mechanisms of health and disease. CIHR enables such breakthroughs by investing in projects at all stages of the research continuum and supporting the research leaders of tomorrow as drivers of discovery.

CIHR INITIATIVES

CIHR's Project Grant Program supports investigator-led **groundbreaking fundamental research** having the potential to position Canada for moonshots.

One example of such research is the work of Dr. John Dick's team at the Princess Margaret Cancer Centre. Years of cancer stem cell research, which CIHR has been supporting through various funding opportunities since 1987, through its predecessor, the Medical Research Council of Canada, informed the discovery of blood stem cells and continued insights into the understanding, diagnosis and treatment of leukemia. For his breakthrough contributions to science Dr. John Dick received a CIHR Gold Leaf Price for Discovery in 2019 and a Canadian Gairdner International Award in 2022.

CIHR also invests in fundamental science progress through a suite of opportunities to **support the research leaders of tomorrow**. This includes Canada Graduate Scholarships for Master and Doctoral levels and postdoctoral fellowships. Complementary programs such as Health System Impact Fellows and the Health Research Training Platform, which offer environments where the next generation of researchers can develop the skills required to succeed in diverse career pathways.

For example, the research conducted by Ting Yu, a 2018 Health System Impact Fellow, led to new insights into St. Mary's Hospital Centre's emergency department care, introducing a set of measures to alleviate the crowding.

CIHR supports mission-oriented research through **priority-driven funding opportunities and initiatives**.

Each of CIHR's 13 institutes is dedicated to a specific area of focus, linking and supporting researchers pursuing common goals. This integrated approach brings together researchers, health professionals and policy-makers from voluntary health organizations, provincial government agencies, international research organizations and industry and patient groups from across the country, under each Institute's virtual "roof."

For example, CIHR's Institute of Aging supports work of the Canadian Consortium on Neurodegeneration in Aging aiming to generate unique "big data" on dementia, leveraging three sets of studies, including other CIHR-funded research through the Canadian Longitudinal Study of Aging. The data is expected to provide new insights into dementia risk factors and treatment.

Other examples of research supported by CIHR institutes together with partners that respond to priority areas include:

- The work of Dr. James Shapiro's team at the University of Alberta, conducting the first in-human trial of a novel treatment for diabetes, transplanting patients' own islet cells without need for anti-rejection drugs.
- The work of Dr. Jeffrey Medin's team, the first in the world to use gene therapy to treat patients with Fabry disease, a rare, chronic illness that damages major organs and shortens lives.

International collaborations enable Canadian researchers and decision-makers to participate in international research collaborations and to share access to the world's best facilities, equipment, and research training environments as well as engage in policy, ethics and knowledge translation activities.

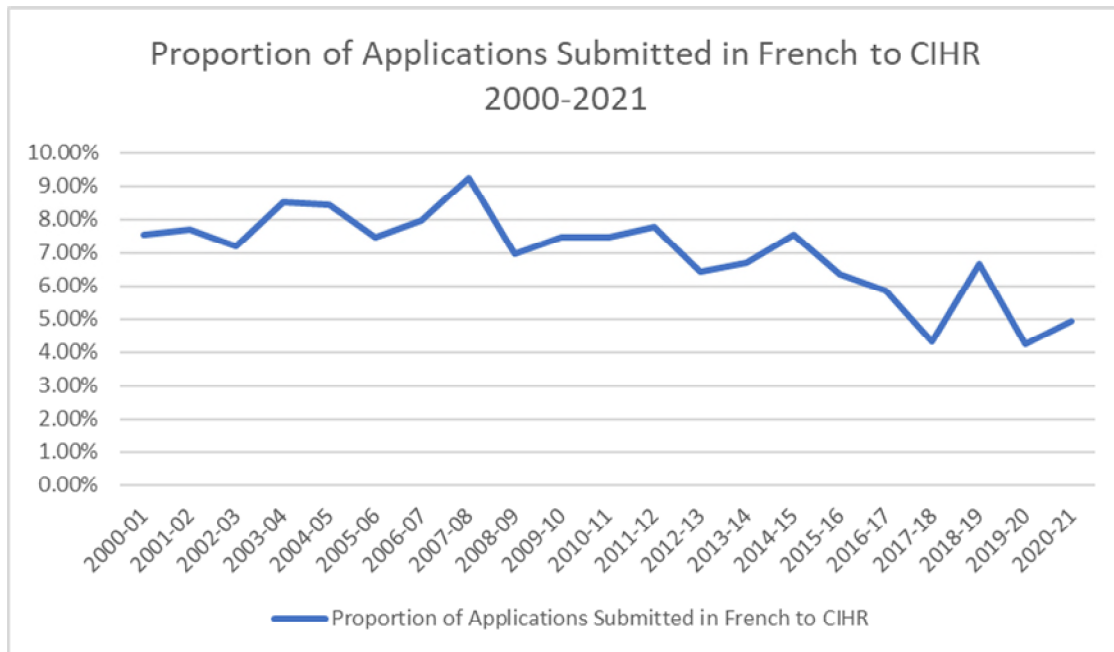
CIHR has bilateral agreements with countries such as Israel and Japan and multilateral agreements that span multiple countries and include international programs such as the [Global Alliance for Chronic Diseases](#), the [Human Frontier Science Program](#) and many programs under the [European Framework Programme](#).

SUGGESTED QUESTIONS AND ANSWERS
February 02, 2023
MEETING OF THE STANDING COMMITTEE ON SCIENCE AND
RESEARCH:
RESEARCH AND SCIENTIFIC PUBLICATION IN FRENCH

1. Is the number of applications submitted in French falling?
2. What is CIHR doing to support researchers who wish to submit their proposals for funding in French?
3. What are the success rates for applications submitted in French to CIHR?
4. What is CIHR doing to improve success rates for applications submitted in French to CIHR?
5. Why are the success rates lower for French applications at CIHR than at NSERC and SSHRC?
6. Why are the values of grants awarded to French applications to CIHR typically lower than the values awarded to English applications?
7. What is CIHR doing to promote confidence within the francophone community in granting agency processes?
8. How does CIHR support post-secondary institutions to ensure fair access and review of grant/scholarships applications in French?
9. Does CIHR reward research dissemination in French?
10. Does CIHR engage with local and international francophone research organizations?
11. L'Acfas recently made recommendations specific to the federal granting agencies. What progress has been made on these?
12. Would CIHR be open to establishing a governance structure across the federal granting agencies to coordinate supports for research in French?
13. Results for CIHR's Fall 2022 Project Grant competition were released publicly today (February 2nd). Has CIHR seen improvements in French application and success rates?

Note: Answers to these questions follow on the next pages.

1. Is the number of applications submitted in French falling?

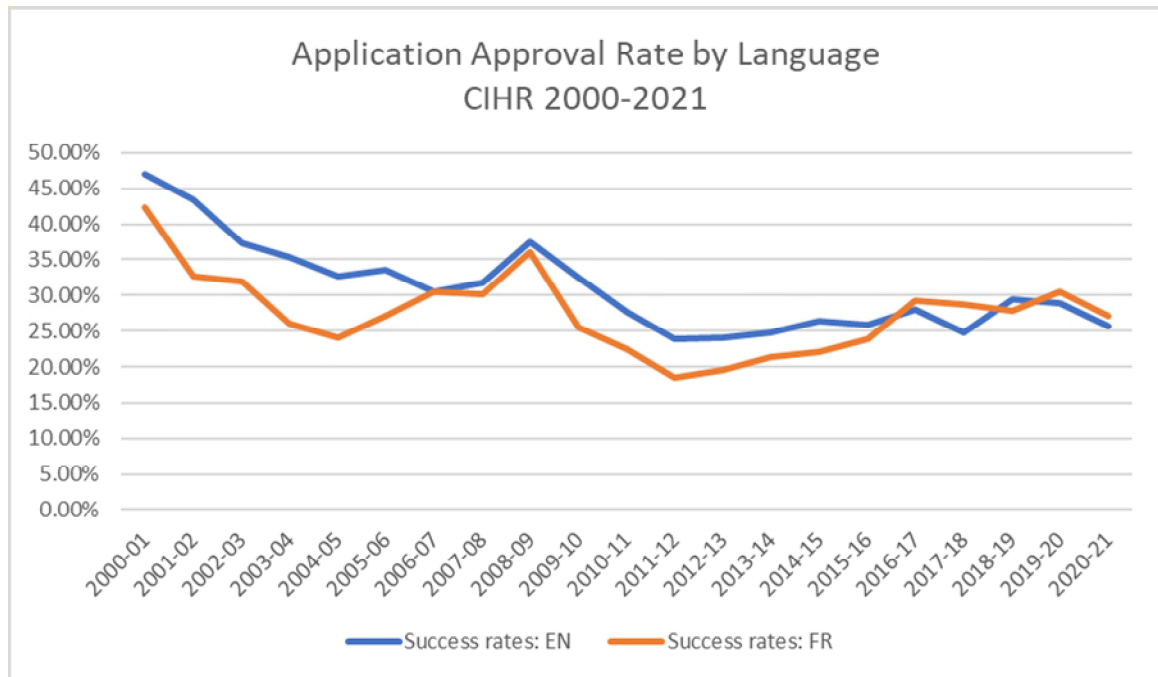


- CIHR recognizes the frequent use of English in applications for funding submitted to the federal granting agencies (CIHR; NSERC and SSHRC).
- We have seen a slight decline in the proportion of French applications over time. Across all programs, the average proportion of French applications submitted from 2000-2010 was approximately 8% of applications (7.8% to be precise), while the average proportion from 2011-2021 is just over 6% (6.1%).
- While we cannot require applicants to apply in one language or another, applicants are encouraged to submit their funding applications in the official language of their choice.

2. What is CIHR doing to support researchers who wish to submit their proposals for funding in French?

- Thank you for this question.
- There are many reasons applicants choose to submit applications in English, including the composition of research teams, the prevalence of English publications and journals, as well as researchers' confidence in the peer review process for applications submitted in French.
- That said, as noted in the written brief we submitted to this study, CIHR provides support in both official languages across the entire funding lifecycle.
- CIHR has also taken steps to address barriers in the application process for French applications. For example, in 2019 we increased the application page limit for research proposals submitted in French, based on evidence that documents written in French require approximately 20% more space than those written in English.
- We are also improving the data that is collected regarding the self-identified language preferences of applicants. With this data, CIHR will be able to better monitor the impact of our actions on the proportion of researchers applying in the language of their choice.

3. What are the success rates for applications submitted in French to CIHR?



- Approval rates refer to all applications that receive funding. Since 2016, approval rates between applications submitted in French and applications submitted in English have been relatively similar across both official languages.

IF PRESSED:

- The average application approval rates for applications submitted in French from 2000-2021 is 26.5%, while the average approval rate for English applications is 29.7%.

4. What is CIHR doing to improve success rates for applications submitted in French to CIHR?

- Thank you for the question.
- As described in the written brief that CIHR submitted to this study, CIHR has taken the following actions to improve success rates for applications submitted in French:
- In 2021, CIHR put in place equalization measures for the Project Grant program, CIHR's largest competition for research grant funding, to ensure that the proportion of applications submitted in French that are funded is at least equal to the proportion of applications submitted in French.
- Data for the Spring 2022 Project Grant Competition shows that equalization had a positive impact on success rates for applications submitted in French.
- In order to address any other potential barriers to equitable success rates for French applications, CIHR has increased the availability of translation services for peer reviewers and researchers so that information is available in both official languages at all stages of the research funding process.
- Additionally, in 2018, CIHR implemented a targeted recruitment strategy to expand its pool of experts capable of reviewing applications written in French. CIHR's College of Reviewers systematizes reviewer recruitment to identify and mobilize the appropriate expertise for the review of all funding applications.
- Ongoing analyses are conducted to ensure that approximately 25% of College of Reviewer members can review applications written in French.

5. Why are the success rates lower for French applications at CIHR than at NSERC and SSHRC?

(Witness testimony and the Acfas report suggest that for SSHRC's Insight program, the success rate of applications is similar across both official languages. NSERC data shows that from 2009-2019, applications submitted in French had higher success rates (average of 73%) compared to success rates across NSERC (average of 66%).)

- Overall, application approval rates vary greatly across the three federal research funding agencies, due to multiple factors in the wider research ecosystem. It is therefore difficult to compare success rates between agencies.
- According to our data, and across all funding programs, since 2016/17 the annual proportion of approval rates for French applications has been trending higher than approval rates for English applications.

6. Why are the values of grants awarded to French applications to CIHR typically lower than the values awarded to English applications?

- From 2000-2022, in our largest competition for research funding (Project Grants), successful French applications and English applications have both received, on average, 72% of the budgets requested.
- French applications have typically requested smaller amounts than English applications, and thus the values awarded to French applications are lower. Since 2000, French applications have requested an average of \$ 531,345 versus an average of \$ 775,709 requested by English applications.

7. What is CIHR doing to promote confidence within the francophone community in granting agency processes?

- As we described in our written submission to this study, since 2012, CIHR has led a series of action plans to better fulfill its obligations under the Official Languages Act and support the development of French language research programs in health. The action plans included measures to support health researchers' equitable access to CIHR programs and services.
- All the changes CIHR has instated over the past several years (including the increase to application page limits, equalization measures, increased translation services, and systematized recruitment of experts who are well-equipped for peer review in French) have been put in place to promote equity in research funding, and foster confidence within the French-speaking research community.
- More broadly, CIHR is committed to the San Francisco Declaration on Research Assessment (DORA), which recognizes the need to evaluate outputs of scholarly research beyond journal impact factors. This is reflected in CIHR's 2021-2031 strategic plan, which seeks to advance more inclusive concepts of research excellence.

8. How does CIHR support post-secondary institutions to ensure fair access and review of grant/scholarships applications in French?

- CIHR provides support for funding applications as well as a robust peer review process in both official languages.
- For example, CIHR conducts orientation sessions for peer reviewers in both French and English, prior to each competition peer review. The orientation sessions provide instructions, expectations, and information on process to reviewers.
- CIHR also presents at various academic conferences, including l'Association des collèges et universités de la francophonie canadienne (ACUFC) and the Canadian Association of Research Administrators' (CARA) annual conference, with representation from post-secondary institutions across Canada.
- Additionally, as part of CIHR's specific engagements with researchers from Official Language Minority Communities, CIHR attends in-person visits to francophone and bilingual institutions. These academic visits serve as an opportunity to hear from researchers and executives from the research community on key priority areas, as well as to share valuable context on CIHR's operations, priorities, budget and context within the Government of Canada and Health Portfolio.

9. Does CIHR reward research dissemination in French?

- Thank you for your question.
- All CIHR-funded researchers are encouraged to share research results by identifying the appropriate audience for the research findings and tailoring the message and medium to the audience.
- While we recognize that the dearth of health science journals in French in Canada is a challenge for researchers, we encourage diverse modes of dissemination. CIHR provides in-depth guides to integrated and end-of-grant approaches to knowledge translation in both official languages.
- CIHR initiatives to support knowledge mobilization - such as CIHR's Café Scientifique program, and Planning and Dissemination Grants, which enable the sharing of health research evidence - are open to applications in both official languages.

10. Does CIHR engage with local and international francophone research organizations?

- CIHR has ongoing engagement with national francophone organizations through participation in various roundtables, working groups and committees to share information, offer advice, and listen to the community.
- For example, along with NSERC and SSHRC, CIHR has an active agreement with L'Association canadienne-française pour l'avancement des sciences (ACFAS), which provides \$35,000/ year 2021-22 to 2023/24 to support their annual ACFAS Congress, the Leo-Pariseau prize, and their work in research among francophone minority groups.
- CIHR also participates in a number of international partnerships that include Francophone research organizations. For example, CIHR is a member of the Heads of International (Biomedical) Research Organizations, which includes organizations such as the Institut national de la santé et de la recherche médicale (INSERM) and Institut Pasteur.
- Other international collaborations with francophone research organizations happen through the Global Alliance for Genomics and Health, the International Rare Diseases Research Consortium (IRDiRC), and several others.

11. L'Acfas recently made recommendations specific to the federal granting agencies. What progress has been made on these?

- One recommendation from the Acfas report specific to the federal granting agencies is for CIHR to maintain our equalization measures to ensure the proportion of funded applications in French is at least equal to those submitted in English and extend them to all programs.
- Equalization measures for CIHR's project grant program – our largest program – are ongoing, and we are currently looking at expanding this to other programs. CIHR will continue to monitor research funding data to ensure equity in health research funding for French-speaking researchers.
- Another recommendation from the Acfas report is for the federal funding agencies to create and maintain long term funding programs that target research on francophone minority communities.
- In April 2021, CIHR announced the re-initiation of a research program to support research and strengthen collaboration on health issues experienced within OLMCs, such as access to care and determinants of health. The program is supported by an initial investment of \$1.5 million over three years (\$500,000 per year).

12. Would CIHR be open to establishing a governance structure across the federal granting agencies to coordinate supports for research in French?

- Thank you for the question.
- CIHR remains open to working with our tri-council counterparts to monitor and implement effective mechanisms to support scientific research and publication in French.

13. Results for CIHR's Fall 2022 Project Grant competition were released publicly today (February 2nd). Has CIHR seen improvements in French application and success rates?

- In the most recent application cycle for Project Grants, CIHR's largest competition for research funding, the proportion of French applications remained relatively stable.
- Furthermore, the results show that CIHR's equalization measures continue to have a positive impact on success rates. French applications were funded at a rate of 21.1%, in line with the overall success rates of the competition.

IF PRESSED:

- If pressed on the proportion of French applications for Project Grants specifically, French applications represented 2% of project grant applications in Fall 2022.

APPENDIX A

Estimated CIHR Investments by Research Area

As of February 2023

\$ millions		
	2021-22	2017-18 to 2021-22
Access to care	\$67.03	\$223.32
Addiction	\$50.43	\$179.91
Aging	\$109.58	\$484.57
Amyotrophic Lateral Sclerosis (ALS)	\$6.05	\$41.34
Alzheimer's	\$54.26	\$227.35
Antimicrobial resistance (AMR)	\$20.03	\$132.89
Arthritis	\$25.14	\$120.94
Asthma	\$12.46	\$57.68
Autism	\$19.20	\$78.28
Autoimmune disease	\$32.38	\$147.12
Cannabis	\$15.73	\$60.13
Cancer	\$226.82	\$1063.22
Cardiovascular	\$115.08	\$542.12
Circulatory & respiratory health	\$227.09	\$1058.12
Cystic fibrosis	\$5.33	\$28.46
Diabetes	\$51.33	\$250.46
Eating disorders	\$2.10	\$5.65
Ebola	\$0.68	\$2.65
E-health	\$27.06	\$96.15
Epilepsy	\$10.78	\$52.36
Gastrointestinal	\$37.42	\$187.00
Genetics	\$576.98	\$2,743.66
Global health	\$257.26	\$968.80
HIV-AIDS	\$41.18	\$226.07
Indigenous Health Research	\$62.60	\$238.36
Infection & immunity	\$465.84	\$1,980.95
Influenza	\$3.28	\$21.68
Kidney	\$27.84	\$147.73
Liver	\$14.92	\$70.29
Lyme disease	\$1.55	\$6.34
Mental health	\$144.26	\$496.93
Metabolism	\$39.18	\$183.94

\$ millions		
	2021-22	2017-18 to 2021-22
Multiple sclerosis	\$6.90 *	\$31.40**
Musculoskeletal health & arthritis	\$178.06	\$678.14
Neuroscience	\$238.51	\$909.14
Nutrition	\$59.25	\$258.18
Obesity	\$37.19	\$185.75
Opioids	\$20.13	\$75.80
Pain	\$45.32	\$164.93
Parkinson's	\$14.22	\$76.32
Population & public health	\$205.19	\$851.41
Post-traumatic stress injury (PTSI)	\$6.22	\$22.73
Rare diseases	\$38.53	\$196.80
Respiratory	\$50.52	\$274.81
Spinal cord injury	\$9.07	\$32.25
Stem cell	\$54.90*	\$337.20**
Stroke	\$27.18	\$144.22
Suicide	\$10.97	\$31.13
Transplantation	\$23.59	\$116.84
Traumatic brain injury	\$12.05	\$51.05
Tuberculosis	\$5.56	\$29.73

Notes:

Amounts for individual projects may be double-counted in the case where a project was found relevant to more than one research area (e.g., a project could be relevant to both diabetes and obesity). Therefore, the sum of individual research areas will not reflect the overall expenditures by CIHR.

*data from FY 2020-21 available only

**data from FY 2016-17 to 2020-21 available only