

## **Submission to the House of Commons Standing Committee on Finance**

### **2018 Pre-Budget Consultation**

#### **Executive Summary**

The recently released Fundamental Science Review lays out the following modern characteristics of vibrant research ecosystems:

- Existence of critical mass, with sufficient project funds to carry out world-leading research and support for clusters and networks that can build and sustain a Canadian advantage.
- Participation in international collaborations.
- Support for multidisciplinary and transdisciplinary research.
- The ability to respond quickly to rapidly emerging research opportunities.

The Rick Hansen Institute exemplifies this approach to innovation. The Rick Hansen Institute (RHI) is a world-leading research organization and accelerator, committed to finding cures for spinal cord injuries. Spinal cord injury is one of the most debilitating, costly, and life-altering chronic health conditions, affecting more than 86,000 Canadians and costing the Canadian economy more than \$2.7 Billion annually.

Since 2008, the Rick Hansen Institute has partnered with the Government of Canada to accelerate the translation of discoveries and best practices into improved treatments for people with spinal cord injuries (SCI).

RHI is mobilizing the collective power of the global SCI community by creating an international network of researchers, health care providers, innovators, entrepreneurs, investors, policy makers, community service providers and individuals with SCI, resulting in unprecedented levels of multidisciplinary collaboration and expertise being applied to key issues. RHI is a world leader in knowledge transfer and best practice implementation and works with stakeholders to ensure that research advances beyond the pilot project stage, directly benefitting individuals with SCI, the health care system, and the Canadian economy.

Ironically, the very approach that makes RHI so effective, creates a significant hurdle to ensuring its existence. RHI's multidisciplinary approach, and full-cycle scope ranging from research to commercialization, spans the mandates of numerous federal Ministries. As a result,

there is no existing federal program that is fully aligned with RHI's work, and able to provide renewal funding when RHI's existing funding terminates in March 2018.

**The Rick Hansen Institute is requesting the creation of a federal funding structure to provide a renewal investment of \$48.5 million over 5 years (2018-2023). This will enable RHI to continue to improve health outcomes for Canadians with spinal cord injuries.**

## Canada's Fundamental Science Review

In April 2017, an expert panel commissioned by the Honourable Kirsty Duncan, Minister of Science, presented their recommendations on science funding in Canada: *Investing in Canada's Future: Strengthening the Foundations of Canadian Research* ([www.sciencereview.ca](http://www.sciencereview.ca)). The report lays out the following **modern characteristics of vibrant research ecosystems**:

- Existence of critical mass, with sufficient project funds to carry out world-leading research and support for clusters and networks that can build and sustain a Canadian advantage.
- Participation in international collaborations.
- Support for multidisciplinary and transdisciplinary research.
- The ability to respond quickly to rapidly emerging research opportunities.

The report discusses enhancements to Canada's research ecosystem deemed essential to building Canada's research competitiveness, and ensuring that research investments are as productive as possible – creating jobs, economic growth, and quality of life improvements for Canadians:

- The ability to leverage funding from a wide variety of non-federal government sources.
- Enhanced interprovincial and international collaboration.
- National and international leadership and coordination.
- Enhanced support to early-career researchers.

The Rick Hansen Institute exemplifies this approach to research and innovation.

## The Rick Hansen Institute

**The Rick Hansen Institute (RHI) is a world-leading research organization and accelerator, committed to finding cures for spinal cord injuries.**

Spinal cord injury (SCI) is one of the most debilitating, costly, and life-altering chronic health conditions, affecting more than 86,000 Canadians and costing the Canadian economy more than \$2.7 Billion annually.

Spinal cord injury has devastating consequences for individuals, their families, and health care systems throughout Canada. SCI results in permanent paralysis, decreased quality of life, and life expectancy reduced by 15-30 years. Individuals living with SCI are extremely vulnerable to a wide range of debilitating secondary health complications which not only have a significant

impact on day-to-day functioning, but also result in frequent and costly rehospitalizations.<sup>1,2</sup> Near-constant health complications reduce the employment rate of individuals with SCI from 62% pre-injury to 32% post-injury.<sup>3</sup> Chronic unemployment coupled with the need for specialized accessible housing, transportation, and medical supports often results in dependence, poverty, mental health issues, and isolation.

**In less than a decade, the Rick Hansen Institute has transformed the spinal cord injury landscape by creating a global network** of researchers, clinicians, innovators, entrepreneurs, investors, policy makers, community service providers and individuals with SCI – mobilizing the collective power of the best minds around the world, resulting in **unprecedented levels of multidisciplinary collaboration**, expertise, and shared resources being applied to spinal cord injury research and care. RHI’s **leadership and infrastructure** has made Canada a world-class hub of spinal cord injury innovation.

RHI’s **national network** comprises 31 sites across Canada; this pan-Canadian collaboration accelerates research and facilitates the implementation of healthcare innovations throughout the country.



RHI’s Canadian Network

<sup>1</sup> Dryden DM, Saunders LD, Rowe BH, et al. Utilization of health services following spinal cord injury: a 6-year follow-up study. *Spinal Cord*. 2004;42(9):513–525.

<sup>2</sup> Kennedy P, Smithson E, McClelland M, Short D, Royle J, Wilson C. Life satisfaction, appraisals and functional outcomes in spinal cord-injured people living in the community. *Spinal Cord*. 2010;48(2):144–148.

<sup>3</sup> Jetha A, Dumont FS, Noreau L, Leblond J. A life course perspective to spinal cord injury and employment participation in Canada. *Top Spinal Cord Inj Rehabil*. 2014;20(4):310–320.

RHI's **international reach** spans more than 30 countries, including Israel, China, the United States, and Australia. These partnerships engage the best minds and bring the best ideas and international resources to Canada. From an international development perspective, RHI utilizes Canada's strengths to help the world's most vulnerable people, in countries such as India, Africa, and the Middle East.

## Transforming Innovation into Benefits for Canadians

A crucial element of RHI's work is commercialization and implementation of science-based best practices in the not-for-profit health care sector. As noted in a 2015 report commissioned by Health Canada, *Unleashing Innovation: Excellent Healthcare for Canada*,<sup>4</sup> Canada enjoys a long-standing and well-deserved global reputation for excellence in health research, but faces significant challenges turning this powerful innovation into high-quality and cost-effective health care. Canada is not alone in this dilemma – globally, only 14% of health-related scientific discoveries enter into medical practice,<sup>5</sup> and it takes an average of 17 years to do so.<sup>6</sup>

RHI is a world leader in knowledge transfer and best practice **implementation**. RHI takes responsibility for ensuring research investment directly benefits individuals with spinal cord injuries, the Canadian health care system, and the economy. Researchers often do not have the business expertise to successfully commercialize their innovations, or implement them in the health care environment. RHI works with innovators to ensure that research advances beyond the pilot project stage, resulting in improved health outcomes, reduced health care costs, and economic growth.

RHI is building an **innovation ecosystem** to translate innovation into adopted healthcare practices and commercialized products. Cost savings and profits support new research, creating a sustainable ecosystem that generates leading-edge health care, skilled jobs, and economic growth in Canada.

RHI's specialized mandate and structure allows RHI and the Canadian SCI network to **respond quickly to emerging opportunities**. RHI provides its network members with the infrastructure and resources they need to do their best work and advance their discoveries – funding, collaboration, data analytics, clinical trial and project management, health economics expertise, commercialization support, and impact evaluation.

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<sup>4</sup> *Unleashing Innovation: Excellent Healthcare for Canada*. Report of the Advisory Panel on Healthcare Innovation. July 2015, ISBN 978-0-660-02680-0

<sup>5</sup> Westfall JM, Mold J, Fagnan L. Practice-based research – “Blue Highways” on the NIH roadmap. *JAMA*. 2007;297(4):403–406.

<sup>6</sup> Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. *J R Soc Med*. 2011;104(12):510–520.

RHI's network includes both established and early-career researchers and health care professionals. RHI **nurtures Canadian talent** by providing scholarships, fellowships, and funded academic positions to young researchers, to build the next generation of scientific excellence in spinal cord injury research and care. RHI also creates resources for health care professionals to upgrade their skills and knowledge.

## Funding Innovation in Spinal Cord Injury Care and Cure

Since its partnership with the Government of Canada began in 2008, the Rick Hansen Institute has been funded outside of the four federal research funding agencies (NSERC, SSHRC, CIHR, CFI). From 2008-2013, RHI operated on a 5-year, \$30 Million grant from Health Canada. In 2013, the Federal Government renewed its support, with a 5-year, \$35 Million grant from Western Economic Diversification (Ministry of Innovation, Science and Economic Diversification). RHI's current funding agreement terminates 31 March 2018.

The provision of lump-sum funding to RHI, rather than numerous smaller research grants to individual members of the Canadian SCI network enables RHI to maximize productivity and outcomes by:

- Working with the national SCI network to set **consensus-based priorities**, aligned with Government of Canada priorities.
- Coordinating **national and international collaborations**.
- Creating and providing **research infrastructure** that accelerates progress and facilitates national and international collaboration.
- Taking **responsibility for implementing research outcomes** to ensure Canada receives human and economic returns on research investments.
- **Leveraging additional funds**. Since 2013, RHI has leveraged an additional \$30 Million from non-federal government sources (provincial governments, non-profit foundations and agencies, industry, and private individuals) to support spinal cord injury research and care.

## Overcoming Funding Silos to Unleash Innovation

**The Rick Hansen Institute is requesting renewal funding of \$48.5 million over 5 years (2018-2023), to continue to improve the health outcomes for Canadians with spinal cord injuries. To make this investment possible, RHI is asking the Government of Canada to establish a funding structure to support organizations such as RHI, whose productivity and effectiveness result from their ability to work beyond the established confines of single-ministry programs and mandates.**

Due to the multi-disciplinary scope of RHI's activity, spanning the mandates of the Ministries of Health, Science, Sport & Persons with Disabilities, Global Affairs, and Innovation, Science & Economic Development, RHI does not fit within the established funding programs of any single federal ministry. The global, multi-disciplinary, research-to-implementation approach used by the Rick Hansen Institute is the most innovative, effective means of achieving its goals, but it is this very approach that results in the lack of a natural funding "home" within the structure of the federal government.

RHI is not the only Canadian research organization to be affected by federal funding silos. Government officials have confirmed there are numerous Canadian research organizations that straddle the divisions of federal ministries, and are in a similar funding quandary.

Failure to find a mechanism to fund these world-class Canadian research institutions will result in:

- Loss of innovation to fuel start-up companies, job growth, and economic growth and diversification in Canada.
- Loss of thousands of highly skilled jobs.
- Loss of health research expertise and innovation that is essential to improving Canadian health care and health outcomes.
- Loss of national and international partnerships, and the associated reputational risk.
- Damage to Canada's reputation as a world-class research and innovation hub.

## Conclusion

For the past decade, the Rick Hansen Institute has exemplified the approach that experts agree is required to ensure innovation results in timely and real benefits for Canadians. The Rick Hansen Institute is making a significant contribution to Canada's profile as a global health care leader.

**There is no currently existing structure to support future funding for the Rick Hansen Institute and other multidisciplinary research organizations of its kind.** Without the political will to create a funding structure, the Rick Hansen Institute will cease operations in March 2018, reversing a decade of national and international multidisciplinary collaboration to advance spinal cord injury cure and care.

The Government of Canada is strongly encouraged to create a mechanism to support Canadian research entities that are driving innovation and economic growth, contributing to Canada's competitiveness internationally, and improving the quality of life of Canadians.

*The Rick Hansen Institute is a Canadian-based not-for-profit organization committed to accelerating the translation of discoveries and best practices into improved treatments for people with spinal cord injuries.*