INTRODUCTION

Health Canada’s five-year funding agreement with the Rick Hansen Foundation in 2007 demonstrated a progressive and insightful approach to tackle the staggering costs of spinal cord injury (SCI) to Canada’s health care system, and to the quality of life of affected Canadian individuals and communities. The funding led to the eventual creation of the Rick Hansen Institute (RHI), which addresses the priority needs of Canadians with spinal cord injuries through a combination of networks and infrastructure that generates greater collaboration within the care and cure communities nationally and around the world.

In five short years, progress has been made to improve treatment and ultimately outcomes for people with SCI. Our new Operations Plan, covering 2013-2018, will focus on four programs—CURE, CARE, CONSUMER ENGAGEMENT and COLLABORATION—brining us closer towards a world without paralysis after spinal cord injury.

Below are just a few, concrete examples of progress delivered against RHI’s commitment to Health Canada, RHI’s impact on the way clinicians care for and treat people with SCI, and on the health outcomes of individuals with SCI.

TIME TO SURGERY

THE PROBLEM: Clinicians agree that decompressive surgery is often necessary following an SCI, but uncertainty exists about how soon after the injury to conduct the surgery. While stabilizing the patient is considered the immediate priority after admission, there is a large variation in timing to surgery in Canada.

RHI’S CONTRIBUTION: Over the past five years, RHI has supported a number of efforts aimed at improving our knowledge of the effects of time to surgery, including a systematic review, a simulation model, and a multi-centre clinical trial called the STASCIS study.
THE IMPACT: According to its recently published findings, the STASCIS study has demonstrated that individuals with a cervical spinal cord injury who have surgery within 24 hours have an improved likelihood of showing significant neurological improvement compared to individuals who have delayed intervention.

CTV News, one of the several major media outlets to cover the STASCIS results, highlighted the impact this study has had on an individual with SCI. Four years ago, Glen Williams slipped on a patch of ice and broke his neck. Once he realized he was paralyzed, he feared he would never walk again.

“It was the scariest day of my life,” he said. During his time in hospital, Williams signed up to be part of the STASCIS study. Today, he is mobile, and traces his good fortune to the surgery.

“I am part of the evidence that it does work,” said Williams. View the story at www.ctvnews.ca/surgery-most-effective-within-24-hrs-of-spinal-injury-1.772557.

STANDARDIZING MEASUREMENT OF IMPAIRMENT

THE PROBLEM: Five years ago, there was inconsistency in how sites in Canada used the International Standards for Neurological Classification of SCI (ISNCSCI) to classify the level and severity of neurological motor and sensory impairment after injury. RHI needs to ensure consistency in outcome measurement for both the national Rick Hansen Spinal Cord Injury Registry (RHSCIR) with over 3,500 patients enrolled in 31 facilities, and in sponsored clinical trials where this is a primary outcome being evaluated. Adherence to international standards is necessary not only for research, but also benefits the patient, allowing for more accurate diagnoses leading to better care.

RHI’S CONTRIBUTION: RHSCIR included the ISNCSCI, and RHI began training each of its network sites on how to perform this assessment.

THE IMPACT: ISNCSCI training is one of the many ways RHI has brought about fundamental changes in clinical care and research on SCI in Canada. Since 2006, RHI has carried out 23 training sessions in 10 cities across Canada, training hundreds of surgeons, nurses, physiotherapists, occupational therapists, and other professionals involved in the care and treatment of people with SCI.

As shown in the sidebar, RHI’s efforts have been effective in introducing consistency in classification and measurement of neurological impairment. Not only has the adoption of an international standard been crucial for the success of our national registry, it has also made possible other RHI-sponsored multi-site clinical trials, including CAMPER and Minocycline.

RHI is currently developing a free web tool to make the ISNCSCI classification easier and more reliable.

“It is still not a home run and far from a cure, but what it means is that one in five individuals is walking away from an injury they wouldn’t normally walk away from.”

– STASCIS Principal Investigator Michael Fehlings, MD, PhD.

Training healthcare workers

➤ RHI has trained more than 330 healthcare workers.

➤ 96% of training participants found the session helpful.

➤ After training, more than two-thirds were confident they could perform the assessment and classify SCI according to the International Standards.

➤ Up to 2008, only 35% of respondents indicated that they used the International Standards prior to training.

➤ Today, over 60% of Rick Hansen SCI Registry site respondents routinely use ISNCSCI.
IMPROVING ACCESS TO THE BEST AVAILABLE EVIDENCE

THE PROBLEM: It is estimated that a clinician would have to read about 20 journal articles a day, 365 days a year, to keep pace with advances in health care knowledge. Busy clinicians need access to comprehensive, up-to-date summaries of the latest and best evidence on SCI care and treatment.

RHI’S CONTRIBUTION: Since 2009, RHI has sponsored the Spinal Cord Injury Rehabilitation Evidence (SCIRE), a collaborative project involving 97 Canadian and international SCI researchers, which has developed a web-based synopsis and critical review of existing scientific literature on a broad range of topics in SCI rehabilitation. In addition to the freely-accessible SCIRE website (www.scireproject.com), the SCIRE team have been responsible for 20 peer-reviewed journal articles, 31 other publications, and 71 conference presentations.

THE IMPACT: The winner of seven awards, and with over 100,000 web hits each year, SCIRE has fast become the go-to resource for the busy clinician seeking access to the best available evidence. A recent evaluation of SCIRE commissioned by RHI has demonstrated the concrete impact SCIRE has had in the way clinicians deal with their patients (see sidebars).

Some examples of the ways SCIRE has been used to change practice include:

- At Vancouver General Hospital, SCIRE was used to inform the development of the hospital’s autonomic dysreflexia guidelines;
- The Alberta Health Services Board used SCIRE to determine whether best practices were being utilized in SCI rehabilitation;
- The Royal College of Physicians and Surgeons of Canada uses SCIRE as required reading for physical medicine specialists;
- BC occupational therapy students use SCIRE case studies and educational modules as a learning module on spinal cord injury; and
- BC physical therapy students utilize the SCIRE outcome measure chapter as core learning material on standardized assessments.

SCIRE is an essential part of RHI’s overall strategy, contributing to a large number of RHI’s key projects. As just a few examples, evidence from SCIRE has helped in the development of the world’s first national standards for SCI accreditation; in the development of a continuing medical education program for the Canadian Medical Association; in informing the choice of targets for best practice implementation for the multi-province Knowledge Mobilization Network; and in expanding and improving the outcomes captured by the Rick Hansen SCI Registry.

Quotes from the evaluation of SCIRE

“Whenever I have a question, SCIRE is where I start. To have something available like that, is just incredibly invaluable to me.”

“SCIRE has influenced the choice of the tool that we decided to use here for pressure ulcers prevention.”

“To my knowledge, it’s the only website like that that exists… it’s a very easy-to-use tool.”

Improving Knowledge

91% of health care providers, and 86% of researchers, said SCIRE improved their knowledge of SCI evidence.

81% of health care providers said SCIRE helped to inform changes to their clinical practice.
CONCLUSION

With funding now secured for the next five years (2013-2018), we are transitioning our efforts from infrastructure building towards greater emphasis on implementing the results of this research into clinical practice, in the centres where people with SCI are cared for across Canada and internationally. Having renewal funding confirmed is a major milestone for the Institute and could not have been achieved without the tremendous work of our research network partners.

RHI will move forward with greater emphasis on developing cures for paralysis after SCI and continuing to effectively translate research results into the medical interventions required to improve their quality of life and reduce health care costs for individuals with either acute or chronic SCI.

As a result, we expect to see much larger and broader results, in terms of improved and standardized care across the country, and a reduction in the level of impairment after injury.

This new funding will have a far-reaching impact—not only for Canadians and our health care system, but for people around the world, and will further solidify Canada’s reputation as an inventive, global leader in SCI research and care.

At this time of unprecedented scientific progress and transformative global communications technology, a world without paralysis after SCI is possible.

The Rick Hansen Institute is becoming a leader in promoting and implementing best practices for the care of people with spinal cord injury. With RHI’s Canadian research network and a growing list of partners around the world, we are working hard to influence behaviour change that will ultimately lead SCI research into action. The aim of RHI’s Best Practice Implementation (BPI) projects is to lead the adoption of knowledge, in order to improve SCI outcomes in Canada and internationally.

Our BPI strategy utilizes four vehicles that are helping move knowledge into action for people with SCI:

- **Institutional**: Partnership with Accreditation Canada to create standards for both acute and rehab care services of individuals with SCI
- **Professional**: Partnership with the Canadian Medical Association to give the country’s 50,000+ family physicians accredited, evidence-based best practices
- **Multidisciplinary and programmatic**: Knowledge Mobilization Network is a practical, collaborative initiative that imbeds strong relationships with clinical leaders, research scientists, and Canadian health policy makers
- **Commercialization**: RHI’s Commercialization Strategy aims to facilitate the development of innovative pre-commercial therapeutics and medical devices that will improve the lives of those living with SCI under development at research-based institution or company.

To view references and sources for the information contained in this document, please visit RHI’s website at www.rickhanseninstitute.org.

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. The Rick Hansen Institute would like to thank the following funders: Health Canada, Rick Hansen Foundation, Western Economic Diversification and the governments of BC, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Yukon Territory.