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SCI-IEQCC Network and SCI-Ontario: Working Together to Develop and Implement a Skin Check Video Resource for Pressure Injury Prevention in Spinal Cord Injury

Abstract

Individuals with Spinal Cord Injury/Disease (SCI/D) face a high risk of developing pressure injuries (PI), which can significantly impact their health, well-being and the economic burden on the health care system. To help mitigate these risks, the Spinal Cord Injury Implementation and Evaluation Quality Care Consortium (SCI-IEQCC) identified gaps during the implementation of indicators in the tissue integrity domain, specifically in the area of patient education regarding daily skin checks.

A collaborative effort involving SCI-IEQCC, Spinal Cord Injury Ontario (SCIO), and individuals with lived experiences was undertaken to develop a skin check video resource. The process involved engaging a multidisciplinary team and other relevant stakeholders, creating storyboards, filming, and developing iterative feedback loops. Challenges included balancing clinician and user needs. Despite these challenges, an instructional video was successfully developed and integrated into SCI rehabilitation settings across Ontario.

The video demonstrates independent skin check and assisted skin check techniques and has been well-received, with 4,400 views to date. Implementation strategies varied across sites, reflecting local contexts and needs. Key findings include the importance of clear communication, stakeholder engagement, and iterative refinement. Future efforts will focus on sustaining and disseminating the video, including translating it into French and further integrating it into staff education.

Key Words: Pressure injury, resources, skin

Réseau SCI-IEQCC et SCI-Ontario : collaboration pour élaborer et mettre en œuvre un document vidéo d'évaluation de la peau pour la prévention des lésions de pression en cas de lésion médullaire

Résumé

Les personnes atteintes d'une lésion ou d'une maladie de la moelle épinière (LME) sont exposées à un risque élevé de développer des lésions de pression, ce qui peut avoir des répercussions importantes sur leur santé, leur bien-être et entraîner un fardeau économique considérable pour le système de santé. Afin de réduire ces risques, le Spinal Cord Injury Implementation and Evaluation Quality Care Consortium (SCI-IEQCC) a relevé certaines lacunes lors de la mise en œuvre des indicateurs dans le domaine de l'intégrité de la peau, notamment en ce qui concerne l'enseignement aux personnes soignées au sujet de l'examen quotidien.

Une collaboration réunissant le SCI-IEQCC, l'organisme Spinal Cord Injury Ontario (SCIO) et des personnes ayant vécu cette réalité a été entreprise pour concevoir une vidéo d'enseignement sur l'évaluation de la peau. Le processus a impliqué la mobilisation d'une équipe multidisciplinaire et d'autres parties prenantes concernées, la création de scénarimages, le tournage ainsi que l'élaboration de boucles de rétroaction itératives. Les principaux défis rencontrés ont été la conciliation des besoins du personnel clinique et des personnes utilisatrices. Malgré ces défis, une vidéo d'enseignement a été réalisée avec succès et a été intégrée dans les milieux de réadaptation spécialisés en LME à travers l'Ontario.

La vidéo présente des techniques d'évaluation de la peau réalisées de manière autonome ou avec assistance. La vidéo a été bien accueillie, comptabilisant à ce jour 4 400 visionnements. Les stratégies de mise en œuvre variaient d'un site à l'autre, selon le contexte et les besoins locaux. Les principales conclusions soulignent l'importance d'une communication claire, de l'engagement des parties prenantes et d'une amélioration itérative. Les prochaines étapes viseront à assurer la pérennité et la diffusion de la vidéo, notamment sa traduction en français et son intégration à la formation du personnel.

Mots-clés : lésion de pression, ressources, peau

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Conflicts of Interest:

All authors have identified no conflict of interest.

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Introduction

Individuals with Spinal Cord Injury/Disease (SCI/D) are at increased risk of developing a pressure injury (PI), with a lifetime prevalence of 85–95%.^{1,2} While PIs can occur at any time following SCI, 20–33% of individuals with SCI will develop a PI before being admitted to inpatient rehabilitation.^{3,4,5} During inpatient SCI rehabilitation, PI incidence ranges from 10–48%.^{3,6,7} This significant yet usually preventable secondary complication can negatively impact the individual's health and well-being. A non-healing PI can have life-altering consequences resulting in reduced quality of life,^{8,9} increased morbidity, and mortality. Premature death attributed to PIs occurs in 7–8% of those with SCI who develop a PI.¹⁰ PIs also have a significant economic impact on

the health care system. In Ontario, the total average monthly cost per individual living in the community with SCI and a PI is CAN\$4,745, with the majority of this expense (62%)¹¹ going towards acute care admission. The Rick Hansen Spinal Cord Injury Registry (RHSCIR) reported that participants with traumatic SCI experiencing one or more PIs resulted in an increase of approximately CAN\$7,451 to each acute RHSCIR site's hospital admission cost.¹²

In 2016, the SCI-High Project identified and established aims, constructs, and a core set of indicators that represent optimal care in 11 SCI rehabilitative care domains.¹³ Building off the work of the SCI-High Project¹³ and the Knowledge Mobilization Network,¹⁴ the Spinal Cord Injury Implementation and Evaluation Quality Care Consortium (SCI-IEQCC) was established. The SCI-IEQCC is a collaborative network focused on achieving optimal and equitable health care services for Canadians. Through the implementation of clinical best practices within SCI rehabilitation using priority indicators of SCI rehabilitation excellence, the overall goal is to facilitate the functional recovery, health, and well-being for individuals living with SCI.¹⁵ The SCI-IEQCC consists of clinicians and leaders from 11 tertiary SCI/D rehabilitation centers across Canada in partnership with Spinal Cord Injury Ontario (SCIO), a not-for-profit SCI community service organization.¹⁶ Champions of implementation within each of the tertiary rehabilitation care organizations, known as implementation and evaluation specialists (IESs), lead initiatives within their sites¹⁶ and collaborate with their site's clinical experts. The aim of the tissue integrity domain is consistent implementation of PI prevention practices (Table 1¹⁷). The PI prevention practices were chosen for their applicability to all patients while having a maximum impact on reducing the overall incidence and severity of PIs among individuals with SCI throughout their lifetime.⁷

A key aspect of PI prevention is performing regular daily head-to-toe skin checks. The goal is to help patients with SCI learn how to either direct a carer to perform a skin check or complete one independently, possibly with a hand-held device, before being discharged from inpatient rehabilitation. Rehabilitation sites focused on patients' perceptions on completing skin checks and the teams' practices around facilitating this skill in their evaluations.

Evaluation results revealed that patients undervalued daily skin checks as an essential life-long strategy to maximize safety and well-being. This included a misperception that skin checks were a nursing task and that the patients' role in this care routine was passive. It also became apparent that gaps existed in the available education resources and that they were not equally accessible across the region. This realization led to an initiative to improve the quality and level of detail in the resources for independent and self-directed skin checks and to reduce regional disparities in accessing these resources.

Table 1:¹⁷ Structure, Process, and Outcome Indicators for the Tissue Integrity Domain

INDICATORS
Proportion of patients with access to education/resources related to tissue integrity and pressure injury
Proportion of individuals with SCI/D with access to hand-held or portable mirror for skin check
Proportion of individuals with SCI/D who completed daily head-to-toe skin checks
Proportion of individuals with SCI/D diagnosed with a pressure injury
Proportion of individuals with SCI/D diagnosed with intact skin

Methods

The objective of this initiative was to develop a comprehensive and easily available skin check video as an educational resource that supports clinicians and persons with SCI through collaboration between the multi-site SCI-IEQCC and SCIO.

A multidisciplinary team of clinicians across the SCI-IEQCC Network, SCIO Cortree, and persons with lived experiences partnered to address the educational gap surrounding daily skin checks. Cortree is SCIO's online education and training platform that provides materials and courses for people with disabilities, family members, health care professionals, and employers looking to increase disability awareness and knowledge (www.scionario.org/cortree).

All stakeholders contributed to the development of a skin check video resource. The key steps involved in creating the video resource included:

Outline and Storyboard

- The central team collaborated to create a general content outline for the video and the discrete video segments. This became the table of contents, including documentation (i.e., step-by-step list/direction on what would be captured on video) of required elements of the skin check process.
- A member of the SCIO Cortree Team (Learning Architect) created a storyboard a script describing discrete elements of demonstration content and related video segments. The storyboard included a description of the required visuals and of key points in the demos and the corresponding narration.
- The storyboard was then shared with the team involved in creating the video to visualize the final product before progressing to filming.

- Following the initial review of the storyboard by the smaller group, the draft of the storyboard and script were widely distributed to collect feedback from team members across SCI-IEQCC sites. The SCIO Cortree Learning Architect/Video Developer then incorporated and transferred this feedback into a final storyboard format.
- Another round of storyboard review and revisions was completed before filming.
- Finally, the team identified people with lived experience and asked them to volunteer to be filmed.

Video Development

- A member of the central team with clinical expertise in PI prevention was identified. This point of contact acted as the director during filming and helped ensure that what was being captured matched the vision of the project, was clinically valid, and was aligned with the final storyboards.
- The first draft of the edited and narrated video was then shown to all rehabilitation sites, at which point feedback was gathered and shared with the central team.
- Once the requested revisions, primarily in narration, were implemented, a final viewing was set up, and it received general endorsement from the team.
- SCIO Cortree put the final product together and disseminated it on their platform (CortreeTV) and to all rehabilitation sites in the network. The video is available at <https://cortree.scionario.org/lms-videos/pressure-injuries-and-skin-checks/>.

Results

The outcome of this collaborative process was an open-source instructional video that demonstrates key considerations and techniques for completing skin checks in two typical scenarios: independently and with assistance. The total length of the skin check video is just under 6 minutes, indexed as follows:

- 0:00 Introduction
- 0:25 Common sites of pressure injury
- 1:30 Self check at home
- 2:11 Using mirror
- 2:41 Using selfie stick
- 2:58 With assistance in wheelchair
- 4:06 With assistance in bed

At the time of this writing, the video had 4,400 views, making

it among the most popular among Cortree's resources. The watch time is at 77 cumulative hours, higher than usual across the CortreeTV YouTube channel. However, we observed that the average view duration is just over a minute.

Table 2: Site-Specific Implementation Plans

SITE	IMPLEMENTATION PLAN
Hamilton Regional Rehabilitation Centre	<ul style="list-style-type: none"> • All patients receive the SCIO Cortree <i>Preventing Pressure Injuries</i> booklet. • The video has been incorporated into patient and family group education classes on Skin Health. • The video was incorporated into staff education on completing and teaching skin checks. • The video has been incorporated into new staff onboarding education.
Ottawa Hospital Rehabilitation Centre	<ul style="list-style-type: none"> • All patients receive the SCIO Cortree <i>Preventing Pressure Injuries</i> booklet, a mirror, a TOH skin-infographic, and a skin check calendar on admission. • OT's review the material with all patients tailored to their condition. • The skin check video is viewed by all SCI patients as part of their mandatory skin education session with the OT. • A copy of the poster with the QR code for the video is displayed on the unit for patients and families to view.
University Health Network Toronto Rehabilitation Institute	<ul style="list-style-type: none"> • Staff distributed the QR code and the link to the video to all attendees (inpatients, families, clinicians) at a site-wide celebration. • Onboarding for new hires includes the video. • Nurses use the video as a teaching resource to support the acquisition of knowledge and skills needed to accurately perform/direct skin checks and document this process. This approach promotes patient engagement, safely transfers accountability for this self-management strategy to the patients, and allows for patient education to continue across shifts.
St. Joseph's Health Care London Parkwood Institute	<ul style="list-style-type: none"> • The QR code and the link to the video are available to all inpatients at their bedside and in their patient care resource binders. • The video has been integrated into mandatory patient skin education sessions for all patients to view. • All patients receive the Cortree <i>Preventing Pressure Injuries</i> booklet, a mirror when appropriate, and a skin check calendar on admission. • The video is included in nursing staff education.

Another achievement of this initiative was a poster "*Working Together to Develop a Skin Check Video Resource for Pressure Injury Prevention in Spinal Cord Injury*," which was presented at the 10th National Spinal Cord Injury Conference, November 2023.

This video is now a resource for both clinicians and persons with lived experience and is utilized in a variety of clinical settings and patient populations beyond SCI. Another tangible result of this initiative was generating and using shared learnings and resources while also employing site-specific implementation solutions to meet different needs. This is one of the benefits of the SCI-IEQCC that has resonated across consortium activities in various domains and was a key factor in helping us achieve our ultimate goal of supporting best practice in tissue integrity (Table 2).

Discussion

In 2023, we rolled out our skin check video across five rehabilitation sites in Ontario. Developed in a collaboration between SCI-IEQCC, SCI-O, and with people with lived experience, the video meets the educational needs of both clinicians and individuals with SCI by addressing gaps in patient educational resources and promoting universal equity and consistency in patient education on pressure injury prevention. Rather than working in silos and duplicating work completed elsewhere, we leveraged our partnerships, which resulted in a streamlined development of resources. Collaboration involving both clinical experts and people with lived experience allowed us to develop the product in a relatively short amount of time, 4 months (January–April 2023) with 3 team meetings. Working in close partnership also allowed us to promote the idea that all perspectives were equally important and needed to be considered.

Leveraging collaboration with a community partner (SCIO/ Cortree) provided excellent opportunities for distributing our product. Combining the video with existing educational content, including Cortree's educational booklet *Prevention of Pressure Injuries After Spinal Cord Injury*, skin-infographics, calendars, bedside QR codes, and other resources,¹⁸ allowed us to offer multimodal educational experiences on the prevention of pressure injuries.

The participating rehabilitation sites used different implementation procedures based on their unique needs and cultures. For example, some sites have group education sessions for viewing the video, while others rely on one-on-one learning opportunities. The benefit is that all patients in the five rehabilitation sites have access to the same best practices for preventing PI regardless of their geographical location. The variations in implementation allowed each site to optimize sustainability and feasibility by factoring in local "implementation drivers" (i.e. processes that exist locally that support effective innovations).^{14,19}

Despite many benefits, we encountered some challenges. Upon reflection, these challenges serve as opportunities for improvement in any similar future initiatives.

Developing an educational resource that meets the needs of both clinicians and people with lived experience is a

delicate balancing act. The video needed to be relatable to individuals with spinal cord injury while also providing the desired educational content five provincial rehabilitation sites requested. Clinicians wanted a comprehensive resource that included a detailed set of instructions with explanations and safety reminders, which is usual practice within a controlled hospital environment. On the other hand, persons with lived experience wanted a tool that was brief, practical, and realistic, essentially representative of what would be feasible to use in the community. Agreeing on an acceptable middle ground was a collaborative process and emphasized the importance of engaging relevant stakeholders at every stage of development.

The short average view time (approximately 60 seconds) indicates viewers are “leaving” before the skin check demonstrations. We learned that presenting the demonstration first and moving the “clinical preamble” to follow would help improve future endeavours. Any contextual information or disclaimers could be included with the written video details instead of embedded into the video. Furthermore, separating each scenario (independent versus assisted skin checks) into its own video segment would enhance viewing ease and hold viewers’ interest.

Other important conclusions included maintaining clear, frequent, and consistent communication; outlining detailed instructions at the outset; and maintaining strong project coordination. A very high-level description of the project/product vision was initially communicated to the video developer (i.e. “develop a skin check video from the lived experience perspective”). This was insufficient as it failed to provide the desired learning outcomes, intended audience, and required elements of demonstration. Additionally, some content experts became involved late in the review process and offered input after the first video was completed. Both shortcomings resulted in the first video being deemed insufficient, and a reshoot was required. The team then recognized the importance of developing a detailed video outline accompanied by a storyboard and communicating clear timelines and deadlines for input and content. We also learned that using each part of the project and time-critical milestones as official touchpoints for all the relevant stakeholders and content experts supported an optimal outcome. Engaging with the larger group of stakeholders and content experts should take the form of a meeting rather than an email. Without concerted and clear milestone meetings, we risked ignoring important steps, such as focused document reviews, meeting approval phase deadlines, or providing for timely input.

Conclusion

The development and implementation of the skin check video through the collaborative efforts of the SCI-IEQCC and SCIO represent an advancement in the education and

prevention of pressure injuries (PIs) for individuals with SCI. This initiative aimed to address the previously identified gaps in patient education, providing a standardized, universally accessible resource that enhances the consistency and quality of care across multiple rehabilitation sites in Ontario. The collaborative approach facilitated the pooling of resources and expertise from various stakeholders, including clinicians, individuals with lived experience, caregivers, and educational developers. This partnership ensured the creation of a practical, comprehensive, and user-friendly video that meets the needs of both health care providers and patients. The video’s success is reflected in its substantial viewership and integration into diverse clinical settings, demonstrating its value as an educational tool.

Key findings from this project highlighted the importance of detailed planning, clear communication, and iterative feedback in developing effective educational materials. The project underscored the necessity of balancing clinical thoroughness with practical usability to maintain patient engagement and achieve the desired educational outcomes. The short average view time suggests a need for future resources to be more concise and segmented to enhance viewer retention.



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Moving forward, the focus will be on sustaining the implementation of the video within rehabilitation environments, both locally and provincially, and expanding its reach. Furthermore, we plan to introduce the video, along with the other PI prevention educational resources, to acute care partners. This will help enable patients and their families to increase their active participation in reducing the risks of secondary complications that may occur in acute care. SCIO will continue promoting the video through marketing on social media channels and featuring

it in the virtual peer connections series. Plans for translating the video into French will further extend its accessibility, ensuring that the resource serves a broader population.

The positive outcomes from this initiative set a precedent for future collaborative projects aimed at improving patient education and care quality, demonstrating the impact that teamwork and shared expertise have on improving health care outcomes. ●

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