

Program Brief – Expression of interest

Document

Gaming for Health: Paediatric spinal cord injury and dysfunction

Two-tier offering

Introduction

The SpineCare Foundation invites you to fill a gap in the consumer interactive learning space. A Gaming for Health model is proposed as a novel medium to inspire children and young people with spinal cord injury and dysfunction in building understanding of their own specific health needs.

This expression of interest is now open and closes 5pm EST, Wednesday 25 September 2019.

SpineCare Foundation mission, vision & values

The SpineCare Foundation is a division of Northcott committed to funding research and educational initiatives that support children with spinal cord injury or disease and their families.

Since its inception in 1981 (known then as The Children's Spinal Research Foundation), SpineCare has funded numerous research projects, awarded scholarships to support the tertiary education of students who use wheelchairs, provided rehabilitative and outreach services for children with spinal cord injury and disease, hosted a world class conference, and engaged in the development of multiple resources for children and young people affected by spinal cord injury and disease.

Project Background

Spinal cord injury (SCI) in childhood is relatively rare but tragic. This catastrophic condition is most often complex and lifelong. A plethora of knowledge and skills are required by the individual to maintain good health and reach potentials of personal well-being, life satisfaction and community involvement. A major challenge within this cohort is the gradual shift in dependence on parents for health coordination and self-care, to independence in managing their own health needs and life-aspirations.

At present, there are no openly available online, interactive learning opportunities for children and young people with acquired spinal cord injury and disease, relating specifically to their health needs. In NSW, Australia, Health education needs of this population are largely met through conventional interventions, such as direct therapy, fact-sheets and the recent initiatives of the SpineCare Foundation (i.e. comic books and podcasts).

In this population, gaming offers a novel approach to knowledge and skill acquisition, in a contemporary, motivating and self-directed environment. The opportunity for socialisation may be an optional built in feature (e.g. multiple players over a shared virtual space). Applications of technologies such as Augmented Reality are of interest.

Target audience of the program

Children and young people with acquired spinal cord injury or disease are to be the greatest beneficiaries of this initiative. Examples of the target audience are:

1. Children with spinal cord injury or disease aged 7-12 year olds, or part thereof
2. Children with different types of spinal cord injuries;
 - a. Cervical spinal cord injury C1-C8
 - b. Thoracic spinal cord injury T1-T12
 - c. Lumbar and cauda equina spinal cord injury
3. Children with spinal cord injuries who use different forms of mobility;
 - a. Manual wheelchair
 - b. Power wheelchair
 - c. Crutches or walkers

Program objectives

The main objective is to create an interactive, learning interface ('game') for children and young people with acquired spinal cord injury or disease. It must be accessible to the targeted end-user group and be compatible with a variety of assistive technologies (e.g. screen readers, eye gaze technology, switch scanners)

Engagement with the game will lead to increased health-relevant knowledge specific to spinal cord injury and disease, and may better prepare young people for commonly encountered medical interventions. The game should allow opportunity to test this knowledge through simulation, as well as embody an element of fantasy and fun.

A secondary objective of the program is to enhance self-efficacy of the participants. By way of increasing knowledge and opportunity of practice within the gaming environment, a shift in a locus of control with enhanced empowerment and confidence in the young person [in their own health care management] is anticipated.

Health aspects that may be included in the game;

- Primary health needs e.g.
 - knowledge of their spinal cord injury and the health implications
 - effect of spinal cord injury on motor, sensory and autonomic systems
 - performing bladder and bowel care (e.g. clean intermittent catheterization)
 - breathing e.g. nocturnal ventilation
- Preventative care e.g.
 - effective wheelchair propulsion
 - effective secretion clearance
- Mitigation of secondary complications
 - managing an autonomic dysreflexic event

- managing a urinary tract infection
 - maintaining joint and muscle range
 - managing spasms
- Prescription of equipment and maintenance
 - attending an equipment trial
 - regular care of equipment
 - upgrading and replacing equipment
- Understanding of commonly encountered medical experiences / interventions
 - Taking medications
 - Scans – MRI, Xray, Dexa
 - Blood tests
 - Urodynamics
 - Operations
 - Specialist medical appointments
- Engagement and participation
 - Items available / modifications required for participation in recreational activities (e.g. snorkeling, surfing)

(Please visit https://www.icf-research-branch.org/images/ICF%20Core%20Sets%20Download/ICF_Core_Sets_for_SCI_longterm.pdf "ICF Core Sets for Spinal Cord Injury - Comprehensive ICF Core Set for Spinal Cord Injury - chronic situation" for a more detailed list of impairment and functional areas for knowledge and skill acquisition)

The end product will need to present numerous options for a player to choose a 'character' that is fitting to their circumstances as well as aesthetic preferences. For example, by selection of a spinal cord injury level (tetraplegia, paraplegia) certain game features would be 'turned on' (e.g. a manual wheelchair user who self-catheterises for bladder care will interface with different features of the game compared to a power wheelchair user who has limited use of their hands). The player would also have the option to select what they would 'look like' in the game (if applicable).

The capability to record and download data from the game is desirable. This would enable observation of trends in game behaviour to then better target other interventions.

Project Performance Requirements

It is essential that throughout scoping and development phase, consultation occurs with relevant experts from the spinal cord injury community and that elements of the game are co-designed alongside the intended end-users. SpineCare can facilitate collaboration with such parties.

It is a requirement that that the 'game' and its constituents reflect best practice and be informed by high quality evidence where available.

Program Funding

The funding offered is in two stages;

Stage 1: Scope and Development of a Minimum Viable Product (MVP). The offering is at \$20,000 in order to achieve proof of concept (e.g. creation of a demo site following scoping and consultation phases) and creation of a proposal for expansion of the MVP.

If selected at stage 1, then;

Stage 2: MVP Expansion to Full Product within Scope. The offering is at \$40-70K

The program, in its two staged offering will be funded by The SpineCare Foundation. SpineCare, as a subsidiary of Northcott, will offer consultation, links to relevant networks and customers upon request

Program Timeframes

Expressions of interest for this project are now open and close 5pm EST Wednesday 25 September 2019. A selection process by way of short presentation at Northcott's Head Office in North Parramatta will be conducted in October / November 2019. Award will be finalised by 30 November 2019.

The project is to commence within 3 months of award and be completed not more than 12 months from the commencement date.

Expression of Interest

Project Application - Gaming for Health: paediatric spinal cord injury and disease

Part A: Applicant/s details

Project lead:

Name:

Role:

Contact phone:

Email:

Institution/Organisation:

Project team:

Name

Qualifications/Role

1.

2.

3.

4.

5.

6.

7.

8.

Part B: Project details

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| Title: | | | |
| Objectives (200 words): | | | |
| Target Audience (50 words): | | | |
| Outputs (200 words): | | | |
| Outcomes (200 words): | | | |
| Game Design (2,000 words): | | | |
| Implementation (500 words): <i>Please include: approach to industry collaboration, approach to co-design alongside end users; approach to integration with undergraduate/post graduate programs (where appropriate).</i> | | | |
| Budget: <i>Please attach a project budget ensuring it outlines any in-kind funding and/or co-contributions.</i> | | | |
| Timeline: | | | |
| Date | Milestone | Activity | Output |
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Impact, Sustainability and Scalability (200 words)

Please outline: the project impact on end users, their support network and the broader community; the proposed approach to platform sustainability; any identified opportunities for future project expansion

Evaluation (200 words)

Please outline the approach to project evaluation including any recommendation for research based analysis outside of your faculty/organisation.