RNFOO Project Update: Final Report, Dec 13, 2022

Innovations in wound care education for nurses and nursing students: Virtual simulation games (VSGs) and a virtual simulation quiz (VSQ)

Our team developed a comprehensive online wound care educational module for nurses and nursing students, featuring a series of virtual simulation games (VSGs) with embedded self-assessment, formative assessment, and a set of innovative virtual simulation quizzes (VSQs) for pre and post or summative assessment. These video-based virtual simulation games will support knowledge of assessment, etiology, treatment and clinical decision-making related to four common wound classifications: (1) pressure injuries, (2) venous insufficiency ulcers, (3) diabetic foot ulcers and, (4) surgical wounds. The VSQs also referred to as virtual objective structured clinical examinations (V-OSCEs) will simulate a nurse caring for multiple patients with a sample of the different types of wounds covered in the wound care module. The project deliverables were: (1) four VSGs; (2) a VSQ; and (3) a website to host the VSGs and VSQ, along with additional curated resources including assessment tools, guidelines, and photographs.

We have successfully created the following four VSGs and two VSQs (or V-OSCEs):

Pressure Injury: Clara's Story

http://www.can-sim.ca/games/woundclara/story html5.html

Venous Ulcer: Adam's Story

http://www.can-sim.ca/games/woundadam/story html5.html

Diabetic Foot Ulcer: Ted's Story

http://can-sim.ca/games/wounddfu/story html5.html

https://www.can-sim.ca/games/woundted/story html5.html

Surgical Wound: Tesfa's Story

https://www.can-sim.ca/games/woundtesta/story html5.html

RISE Link: http://can-sim.ca/accessjama/wound-tesfa-eng

Wound Assessment and Management V-OSCE A

https://www.can-sim.ca/games/woundvoscea/story html5.html

Wound Assessment and Management V-OSCE B

https://www.can-sim.ca/games/woundvosceb/story html5.html

We will be making a few tweaks to the VSGs and V-OSCEs based on feedback from our usability testing and evaluation study completed at Queen's University this fall, but the URLs will not change. Once the edits are complete we will launch the website to the public in January. See attached appendix with some screenshots from the website. The URL will be: https://woundnursing.ca

Usability Testing and Evaluation

Usability testing was completed by members of the research team and our research assistants to ensure the functionality of the modules and the accuracy of the placement of the content. The four VSGs and the two V-OSCEs were implemented in a second year medical-surgical nursing course at Queen's University in the fall of 2022. To date 31 students have completed the post-test survey. Participants rated the VSGs and V-OSCE highly. Although post-test scores generally improved, overall the pre and post-test V-OSCEs were centrally clustered indicting there may have been some issues with some of the questions. Qualitative feedback was very positive, indicating the value of the series of wound care VSGs on student's learning. Some constructive feedback such as allowing students to go back to review a photo of the wound before answering a multiple choice question will be incorporated into upcoming revisions. We anticipate this will improve learner satisfaction, as well as scores on the V-OSCEs.

Future Research

A larger multi-site study is proposed through the CAN-Sim Simulation Research Interest Group that will aim to evaluate the revised versions of the VSGs and V-OSCES.

Dissemination

In terms of dissemination, we have completed several conference and invited speaker presentations and have submitted abstracts to upcoming simulation and nursing education conference as outlined below:

Conference and invited speaker presentations:

Luctkar-Flude, M., & Woo, K. Virtual simulation for global health equity. Invited presentation at the First Annual Centre for Health Innovation Spring Symposium, Queen's University, Kingston, ON, June 7, 2022.

Luctkar-Flude, M., Tyerman, J., & Wilson-Keates, B. Development of virtual simulation experiences and a virtual OSCE (V-OSCE) focused on wound assessment and management (WAM). Podium presentation at the International Nursing Association for Clinical Simulation & Learning Virtual Conference, Milwaukee, WI, June 15-18, 2022.

Tyerman, J., & Luctkar-Flude, M. Innovations in wound care education for nurses and nursing students: Virtual simulation games (VSGs) and effective debriefing strategies. Podium presentation at the International Nursing Association for Clinical Simulation & Learning Virtual Conference, June 24-27, 2020.

Upcoming presentations:

Luctkar-Flude, M. Launch of the Wound Assessment and Management virtual simulation games (VSGs) and virtual OSCEs (V-OSCEs). Webinar for the Canadian Alliance of Nurse Educators using Simulation (CAN-Sim), Feb 28, 2023, 2:00PM EST. Registration link: https://can-sim.member365.ca/public/event/details/f53e8f664ca6223cc3bf30663d54c5c1fcb99921/1

Abstracts submitted:

Luctkar-Flude, M., Tyerman, J., & Killam, L. Promoting Global Health Equity Through Virtual Simulations for Health Professionals, Students and Patients. Abstract submitted for podium presentation at the International Council of Nurses (ICN) Congress, Montreal, QC, July 1-5, 2023.

Additionally, we will submit an abstract for a presentation at the Canadian Association of Schools of Nursing (CASN) taking place in St. John's, NF, May 29-30, 2023. Abstracts are due in January.

Publications:

We will draft a manuscript for submission for publication in a journal such as *Clinical Simulation in Nursing* focused on the development of the VSGs and V-OSCEs and a second publication focused on the results of the evaluation study.

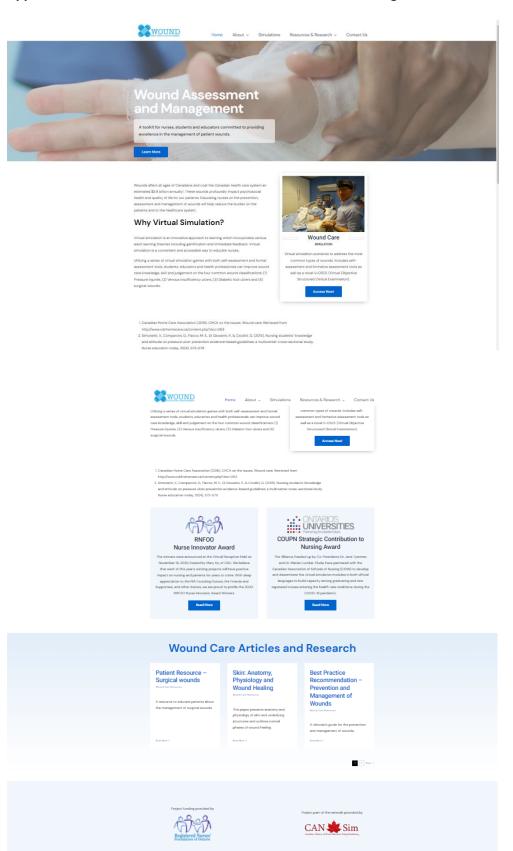
Summary

In summary, we have been able to complete the project deliverables: 4 VSGs, 2 VSQs (V-OSCEs) and a dedicated website with curated resources to support wound assessment and management skills for nurses and nursing students. We will continue to add virtual simulations and resources to the website over the coming years, and we are sincerely grateful to the RNFOO for providing the funding to support our work to date.

Report submitted by:

Dr. Marian Luctkar-Flude, Queen's University, School of Nursing (mfl1@queensu.ca)

Appendix: Screenshots from the Wound Assessment and Management Website:



About the project



















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Wound Assessment and Management Simulations

The wound assessment and management website is a resource for Nurses and Nursing Educators and was primarily designed for use by nursing faculty, given CAN-Sim's mission to collaborate for excellence in simulation education and research.

as a classroom activity. The lessons in the resource are also designed for selfdirected learning for nursing faculty, nursing students, or other health professionals.

No background knowledge in wound care assessment and management is required. The resource was created to provide introductors, knowledge on these topics, teaching tools, learning resources, and links to relevant external resources for users wishing to explore content in greater depth.

How to integrate the toolkit into your curriculum

For educators, there are 2 ways in which you can integrate the toolkit into your curriculum as follows:

1. Access the Toolkit through this Website

website. We have setup the courses in an easy-to-use format that tracks your progress through each lesson and provides a full learning experience. Students can

Access Web-based Resource

them to professionals in your organization through your own Learning Management System (LMS)?

Download the .zip file containing the full package of lessons including all elements of the resource from the link below. Provide the zip file to your LMS administrator or upload yourself into your LMS.

Download Resource (SCORM 12)



Resource Overview

O Clara's Story

The first simulation is about Clara
Campney, an 80 year old female, who is
experiencing increased pain in her lower
back and has a dressing to her coccyx area requiring assessment.

Adam's Story

The second simulation is about Adam Garcia, a 35 year old male, who is being admitted for a right lower leg wound.

year old male, who is being admitted for a right lower leg wound.

Tosfayo's Story
 The third simulation is about Tesfaye, a 35 year old male who is post-operative day 5 following a bowel resection and ostomy

Wound Assessment and

Management (V-OSCE A)
The first assessment of competency using an innovative virtual objective structured clinical examination (V-OSCE)

Wound Assessment and

Management (V-OSCE B)
The second assessment of competency using an innovative virtual objective structured clinical examination (V-OSCE)

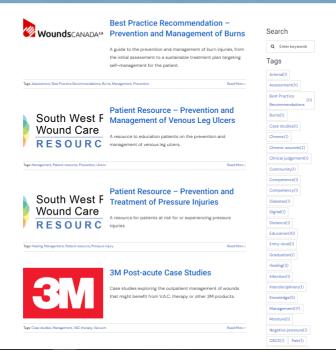






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Wound Care Resources







A systematic and psychometric review of tests measuring





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Research

nurses' wound care knowledge	Search Q Enter keywords	
A systematic review analyzing tools to measure nurses' wound care knowledge.		
	Tags	
Tags Knowledge, Pressure injury, Pressure Utor Knowledge Assessment Teol, Pressure Utor Knowledge Test, PUKAT, PUKT, Tool	Arterial(I)	
	Assessment(II)	
Attacking the Basics: What Fuels a Wound	Best Practice Recommendations	
Explore intrinsic and extrinsic factors that play a role in wound healing.	Burns(1)	
Tags Education, Wound healing Read More >	Case studies(I)	
ligis industrial, would make (Chronic(1)	
	Chronic wounds(2)	
Clinical Simulation for Teaching of Wound Evaluation and	Clinical judgement(I)	
Treatment	Community(I)	
	Competence(I)	
Randomized trial evaluating the use of Objective Structured Clinical Examination (OSCE) and Clinical simulation in education.	Competency(I)	
simulation in Education:	Diabetes(I)	
Tags Education, OSCE, Simulation Read More >	Digital(1)	
	Distance(I)	
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Comparison of pressure injury risk assessment outcomes	Entry-level(1)	
using a structured assessment tool versus clinical judgement:	Graduation(1)	
A systematic review	Healing(3)	
Systematic review comparing structured assessment tool versus clinical judgement on the risk of pressure	Infection(I)	
injury.	Interdisciplinary(1)	
Tags: Assessment, Clinical Judgement, Pressure Injury, Tool Read More >	Knowledge(5)	
THE PLANE	Management(17)	
	Moisture(1)	
Continuing Education to Increase Nurses' Knowledge of	Negative pressure(I)	
Chronic Wound Care Management.	OSCE(I) Pain(I)	