POPULATION HEALTH: POINT OF CARE EDUCATION IN A VIRTUAL CITY

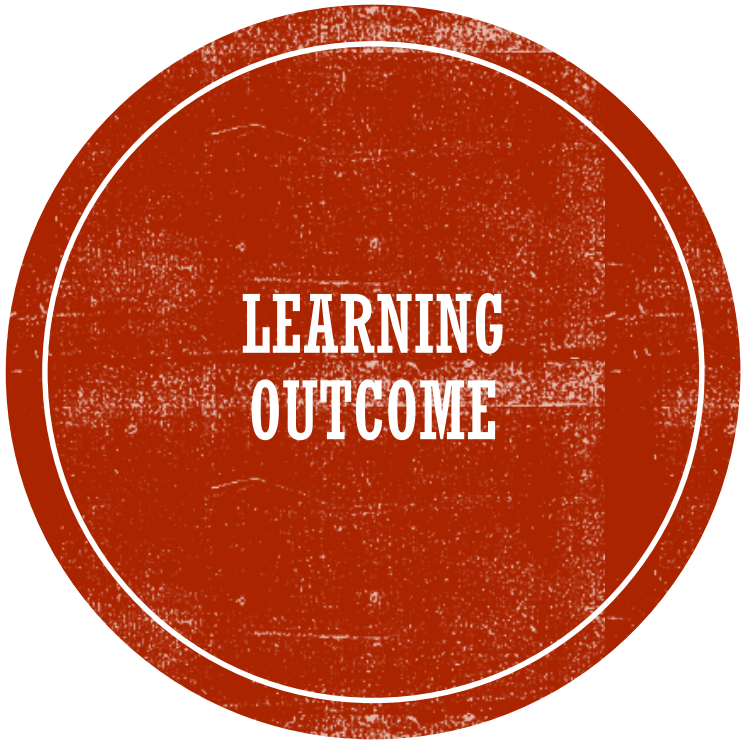
Shelley Cobbett, RN, BN, GrdT, MN, EdD

Andrea Chircop, RN, PhD

Dalhousie University

November 2019

- No conflict of interest
- No commercial interest or financial gain in the use of the virtual city that was used in our 3-phase Pilot Study
- Sentinel City ® (Healthcare Learning Innovations)



- Evidence-informed knowledge to use a virtual city to plan, implement and evaluate population health nursing strategies

- Setting the stage
- Point of care education
- Sentinel City®
- Methodology
- Results
- Discussion and application

BACKGROUND

- Population health nursing clinical placements
- New Curriculum based on pedagogical theory
- National learning outcomes related to population health clinical placements
- Active learning and simulation

- Point-of-care education includes any type of learning that a student can complete within a real or simulated environment, that mirrors the actual clinical environment for practice
- Virtual and face-to-face simulations are examples of point-of-care (POC) education
- Using standardized patients (actors)
- Avatars

SENTINEL CITY®

https://youtu.be/UASEUrelnOE

- 13 interactive citizens including Mayor Hill
- 15 interactive locations (e.g., Better Health Clinic, Lily's Restaurant, ABC Daycare)
- Scripts are provided for many of the interactive citizens
- Case studies covering the life course and assignment catalogue

VIRTUAL SIMULATION

Clinical virtual simulation is the re-creation of reality depicted on a computer screen and involves real people [students] operating simulated system.s

Pedagogical strategy to facilitate knowledge retention, clinical reasoning, improved satisfaction with learning, and finally, improved self-efficacy

(Padilha, J., Machado, P., Ribeiro, A., Ramos, J. & Costa, P. 2019).

METHODOLOGY

Overall goal of population health clinical:

- Assess a population, or neighbourhood by gathering and critiquing appropriate evidence, to document a population health assessment.
- Appreciate how the health of populations is determined by society at large.

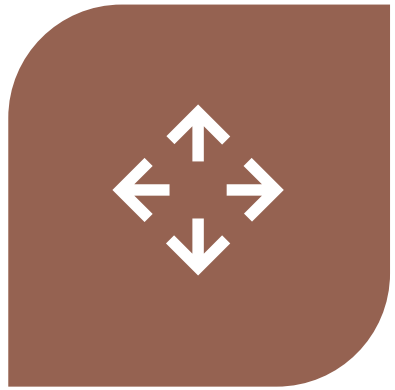
Structure:

- 5 hours/week for 8 weeks
- 8 Clinical groups with 12 students each (96 students DE & 96 AS)
- 1 Clinical instructor per group

CLINICAL PLACEMENTS

4 CLINICAL GROUPS WERE RANDOMLY ASSIGNED TO SENTINEL CITY®

2 CLINICAL GROUPS WERE ASSIGNED TO AN AGENCY (STUDENT HEALTH CENTRE, SENIORS RESIDENCE, INTERNATIONAL STUDENTS CENTRE)



2 CLINICAL GROUPS WERE ASSIGNED TO A NEIGHBORHOOD (LOW SES)

DESIGN OF EVALUATION TOOL

Dalhousie School of Nursing Clinical Evaluation Guide

CASN (2018) Curricular Guidelines for Integrating Community health in Baccalaureate Programs of Nursing.

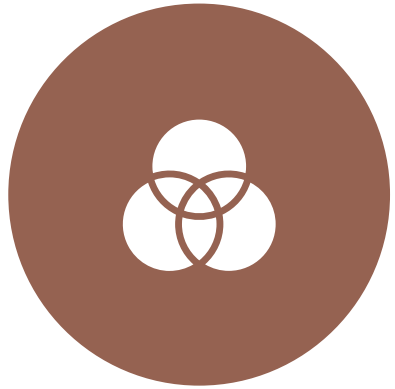
34 Survey questions were structured according to the following content domains:

- Knowledge/Critical Thinking
- Practice
- Communication/Collaboration
- Legal, ethical & professional accountability
- Leadership

DATA COLLECTION

5-POINT LIKERT-STYLE SURVEY QUESTIONS (NOT AT ALL CONFIDENT, SLIGHTLY CONFIDENT, NEUTRAL, CONFIDENT, VERY CONFIDENT)

OPINIO® ON LAST DAY OF CLINICAL, SENT BY ADMIN STAFF



ETHICS: TCPS ARTICLE 2.5- PROGRAM EVALUATION STUDIES

STATISTICAL ANALYSIS

- ANOVA results are provided with each learning outcome, and when significant differences were found ($p \leq .05$), post hoc Tukey data is reported to provide additional information as to which groups had mean differences, and the direction of the differences.

OVERALL RESULTS

188 students invited to participate (DE & AS)

Response rate was 55.32%, with 104 students completing the survey.

Demographics and virtual simulation background

There were no objectives in which students in Sentinel City reported percentages lower than students in agencies or geographical neighbourhoods.

FINDINGS

Q10 "I am confident in my knowledge about the CHN process" ($F = 1.199$, $p = .326$)

Q11 "I am confident in my understanding of a population health assessment" ($F = 6.214$, $p = .003$). Students in Sentinel City placement were more confident (MD .757, SE .215, $p = .002$) than students in the neighbourhood placement.

Q12 "I am confident in my understanding to plan a population health intervention" ($F = 8.027$, $p = .001$). Students in Sentinel City placement were more confident (MD .889, SE .224, $p < .0001$) than students in the neighbourhood placement.

Q14 "I am confident in my ability to apply a population health perspective" ($F = 6.656$, $p = .002$). Students in Sentinel City placement were more confident (MD .603, SE .201, $p = .009$) than students in both the neighbourhood and agency-based placement.

FINDINGS (CON'T)

Q15 "I am confident in my ability to collect secondary data" ($F = 5.788$, $p = .004$). Students in Sentinel City placement were more confident (MD .689, SE .203, $p = .003$) than students in the neighbourhood placement.

Q16 "I am confident in my ability to collect primary data" ($F = 4.298$, $p = .016$). Students in Sentinel City placement were more confident (MD ..573, SE .202, $p = .016$) than students in the neighbourhood placement.

Q20 "I am confident in my ability to establish relationships with community members" ($F = .429$, $p = .652$).

FINDINGS (CON'T)

Q31 "I am confident in my ability to advocate for health equity"(F = 3.430, p = .037). Students in agency-based placements were more confident (MD .638, SE .261, p = .043) than students in the neighbourhood placement.

Overall, the mean scores on the questionnaires differed among the 3 groups with the Sentinel City group having the highest mean (4.02), followed by the community agency (3.85), and the geographical neighbourhood placement group (3.61).

Levels	All 2018 students (DE & AS)	DE	AS	Virtual Simulation (DE & AS)	DE	AS	Agency (DE&AS)	DE	AS	Neighborhood (DE&AS)	DE	AS
Yes	53.12%	41.67%	64.58%	40.74%	21.88%	68.18%	61.54%	50%	66.67%	72.41%	91.67%	58.82%
No	46.88	58.33	35.42	59.26	78.12	31.82	38.46	50	33.33	27.59	8.33	41.18

Q32 "WOULD YOU RECOMMEND FUTURE USE OF THE CLINICAL PLACEMENT THAT YOU COMPLETED FOR THIS COURSE?

RATIONALE FOR STUDENT RECOMMENDATION

Positive experiences

Convenient, safe, valuable, good way to ease into the skill of population health assessment before interacting with real people (SC);

Issues of fairness

Neighborhood and agency perceived as more time consuming; Sentinel City® was limited, interviews pre-set; all clinical groups should be exposed to Sentinel City® to begin clinical practice

ADDITIONAL COMMENTS

Support and guidance from CI

Students commented on the lack of guidance from their CI, believing the "other" groups received more support which was perceived as a "noticeable advantage"; clinical too advanced for Semester 3 students

Critique

"Sitting in a room during the summer months"; lack of "real world" opportunities, no real conversations; no Aboriginal content; too basic for university students for an entire term

ADVANCED STANDING STUDENT DATA

Q33 "Overall, the virtual simulation experience in Sentinel City® helped me to achieve the CHN course objectives"

Levels	2018 AS Virtual sim
Strongly disagree	9.09%
Disagree	18.18
Agree	59.09
Strongly agree	13.64

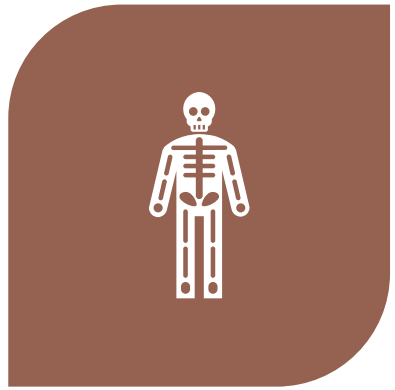
Q34 "I am satisfied with my learning experience in the virtual simulation using Sentinel City®"

Levels	2018 AS Virtual sim
Strongly disagree	9.09%
Disagree	27.27
Agree	54.55
Strongly agree	9.09

LIMITATIONS

CONVENIENCE SAMPLE CONSISTING OF STUDENTS FROM ONLY ONE UNIVERSITY

STUDENT PERCEPTIONS THROUGH SELF-REPORTED DATA



DIFFERENT SKILL LEVELS OF CIS, PARTICULARLY BETWEEN THE DE AND AS COHORT.

POINT OF CARE EDUCATIONAL ASSESSMENTS

Windshield survey

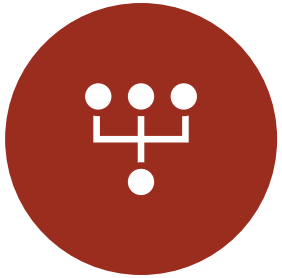
Interviews with citizens, key stakeholders

Assessment of subsystems, e.g., education, transportation, health care

Home visit

Population focused intervention

ASSIGNMENT CATALOG



The development work has been done!

Many assignment ideas, complete with learning outcomes, grading rubrics

Concept review and/or critical thinking question prompts

AACN Essentials have been mapped to each assignment

OVERALL

The Sentinel City group indicated the highest confidence that they were able to meet the course learning objectives (mean: 4.02), with the community agency group (3.85) and the geographical neighbourhood placement group (3.61) both indicating less confidence in meeting course outcomes.

The inconsistency in backgrounds of teaching and professional practice experiences of CI hired to teach CHN clinical is problematic.

Student feedback indicates that a combination of virtual simulation and agency or neighbourhood settings would be ideal.

RECOMMENDATIONS

Further explore multi-contextual pedagogies to teach population health nursing

A combination of the virtual city and “real life” placements

Of critical importance, regardless of setting, is the support and guidance from **qualified** CI

REFERENCE

- Padilha JM, Machado PP, Ribeiro A, Ramos J, Costa P. (2019). Clinical Virtual Simulation in Nursing Education: Randomized Controlled Trial. *J Med Internet Res, 21*(3), p. e11529 doi: 10.2196/11529

QUESTIONS, COMMENTS?

- Thank you for attending the presentation
- Contact details: Shelley.Cobbett@Dal.Ca