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You Should Try This!

Using telesimulation to introduce a rural virtual support program to family medicine residents

Utilisation de la télésimulation pour présenter un programme de soutien virtuel en milieu rural aux résidents en médecine familiale

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Implication Statement

Rural and remote physicians face challenges including management of critically ill patients. At eleven British Columbia resident teaching sites, seven of which were rural, we developed interactive video simulation sessions for treating such patients, and these were video-preceptored by a remotely located physician providing real-time debriefing. Family medicine residents found this program acceptable and educational, felt it increased confidence in managing sick patients, and could lead to future rural experiences and retention. Given this program additionally decreases cost and time of simulations due to less travel, we anticipate similar benefits for other Canadian family medicine programs.

Énoncé des implications de la recherche

Les médecins exerçant en milieu rural ou éloigné font face à divers défis, notamment la prise en charge de patients en état critique. Dans onze sites d'enseignement pour résidents en Colombie-Britannique, dont sept situés en milieu rural, nous avons élaboré des séances interactives de simulation vidéo pour le traitement de tels patients. Ces séances étaient supervisées à distance par un médecin précepteur offrant une rétroaction en temps réel. Les résidents en médecine familiale ont jugé ce programme pertinent et formateur ; ils ont estimé qu'il renforçait leur confiance dans la prise en charge de patients gravement malades et qu'il pourrait favoriser de futures expériences et la rétention en milieu rural. Comme ce programme réduit également les coûts et le temps associés aux simulations en limitant les déplacements, nous prévoyons des avantages similaires pour d'autres programmes de médecine familiale au Canada.

Introduction

Many early-career family physicians feel unprepared managing critically ill patients, leading to burnout and retention challenges.[1] In 2020, British Columbia established Real-Time Virtual Support, (RTVS) an on-demand service allowing rural physicians rapid teleconsultation with specialist (emergency, pediatric, and maternity) expertise, including management and transfer of critically ill patients.[2]

RTVS can be used to support simulation sessions for family medicine residents (FMR).[3] Telesimulation—use of an on-site mannequin with a remotely located facilitator and educator observing on video, and video-based debriefing immediately afterwards—has been used in other specialties.[4] There is little data on telesimulation for rural FMR and our purpose was to estimate the impact of telesimulation on FM residents' confidence, comfort, and interest in rural practice.

Description of innovation

We surveyed UBC FMR from March 1, 2023, to March 1, 2024. (UBC REB H23-01280) FMR training takes place in clinics and affiliated hospitals in communities ranging from 15,500 to 150,000, and the sites have a wide range of capabilities, although critically ill patients must be

transferred. No site had prior experience with telesimulations.

Sites used a high-fidelity mannequin (SimMan, Laerdal Medical, Stavanger, Norway) to simulate a standardized high acuity patient encounter involving myocardial infarction, sepsis, major trauma, cardiac arrest, diabetic ketoacidosis, pediatric trauma, pediatric asthma, congenital heart disease, and pediatric anaphylaxis. During each 2-hour simulation session, groups of 3-7 FMR, with one off-site facilitator (trained in pediatrics, family medicine, emergency medicine, critical care) viewing via the digital platform Zoom, undertook the same two cases across sites. Using PEARLS,[5] this remote preceptor synchronously debriefed FMR individually and as a group, although there was no requirement for an on-site family medicine preceptor.

We assessed resident perceptions of the telesimulation via on online survey including awareness of RTVS support, quality of patient care, quality of the simulation and impact on the location of future practice. Most questions involved a 5-point Likert scale which we dichotomized into strongly and somewhat agree versus "other." We used Qualtrics Core XM (Qualtrics, Seattle, WA) for analysis.

Outcomes

We recruited residents from 11 of the 17 FMR sites including all seven of the rural sites, and conducted 14 two-hour sessions, with 89 FMR participating and 51 (57%) completing the survey. Telesimulation was regarded as very positive: residents universally agreed (100%) on a high level of engagement, felt the experience demonstrated effective management of high-acuity patients, and were comfortable with remote facilitator and debriefing. (Table 1)

Participants reported substantial enthusiasm for RTVS, 81% felt more confidence in future rural practice; 98% planned to incorporate RTVS into future practice, 96% reported confidence with technology and comfort requesting help; 100% felt RTVS support would improve patient care.

Suggestions

Our study illustrates that remotely-preceptored simulations were acceptable and educational for FMR in rural or remote settings. Telesimulation could be also used as a recruitment and retention tool for physicians in rural areas. Our findings should be replicated in other environments with additional scenarios,[6] employ qualitative methods to further explore this concept, and assess over time if this enhances recruitment and retention.

Table 1. Survey results (n = 51, although not every question has 51 respondents)

Survey question, *n* (%)	Strong agree	Agree	Neutral	Disagree	Strong disagree
Did the simulation meet learning objectives					
My engagement was effective	34 (69.4)	15 (30.6)	0 (0)	0 (0)	0 (0)
Demonstrated effective approach to clinical case for critical illness	37 (75.5)	12 (24.5)	0 (0)	0 (0)	0 (0)
Demonstrated use of technology to connect to RTVS facilitator	36 (69.4)	13 (30.6)	0 (0)	0 (0)	0 (0)
Demonstrated quality of practice support by RTVS facilitator	40 (81.6)	8 (16.3)	0 (0)	0 (0)	1 (2.0)
RTVS facilitator demonstrated cultural safety	33 (67.3)	9 (19.1)	6 (12.2)	0 (0)	1 (2.1)
Virtual debriefing					
Virtual debriefing was effective	33 (67.3)	15 (30.6)	0 (0)	1 (2.0)	0 (0)
Virtual preceptor was supportive	44 (88.0)	6 (12.0)	0 (0)	0 (0)	0 (0)
Participant interaction was good	11 (47.8)	9 (39.1)	3 (13.0)	0 (0)	0 (0)
After participating in simulation, feelings on future RTVS use					
Plan to incorporate RTVS into future practice	41 (85.4)	6 (12.5)	1 (2.1)	0 (0)	0 (0)
Feel confident with employing technology	40 (85.2)	6 (12.8)	1 (2.1)	0 (0)	0 (0)
Feel RTVS will improve quality of patient care	42 (87.5)	6 (12.5)	0 (0)	0 (0)	0 (0)
Feel comfortable asking RTVS for assistance	36 (75.0)	10 (20.8)	2 (2.2)	0 (0)	0 (0)
Feel more confident about rural practice	39 (81.3)	9 (18.7)	0 (0)	0 (0)	0 (0)

**Of 48 respondents, 39 planned to work in a rural or remote area in the future, while 8 were unsure and 1 respondent did not plan to work in a rural or remote area. Two questions on age and cultural background had very low response rates. For 43 respondents, this was the first time using RTVS while 8 had used it previously. Of 48 respondents, 47 perceived no bias on behalf of the facilitator, while 1 responded did.*

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