

REGIONAL PERI-OPERATIVE EDUCATION PROGRAM – RURAL MODEL EVALUATION FRAMEWORK

Maria Brinza, RN, MD

SURG 560

MASTER OF GLOBAL SURGICAL CARE

AUGUST 2021

Academic Advisor: Laura M. Lee, PhD, MSc
Field Advisor: Heather MacMillan, MSc, BSc

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1. Introduction

1.1 General Context

For the past few decades, nursing shortages have become a major concern and perioperative nursing field is no exception to this situation (Willemsen-McBride, 2010). Ball, Doyle & Oocumma (2015) predicted a significant worldwide perioperative nursing shortage, due to lack of perioperative curricula in the majority of nursing educational programs (Holmes, 2004). This lack of perioperative experience limits nursing students' exposure to the operating room, and may limit new graduate interest and awareness of the employment opportunity in the operating room (Beitz, 2019). In addition, recruitment and retention in the perioperative specialty area are vulnerable due to the stressful working environment and the required additional education and requisite specific clinical skill set needed to work in the operating room (Vortman, 2019), with consequences such as substantial delay in surgical procedures and reduced quality of patient care (Ball et al., 2015). The challenges described above exacerbate when it comes to training nurses for remote/rural clinical sites, where training capacity, support and resources are limited and where recruitment and retention represent a constant problem (Pitblado et al, 2013; Hunsberger et al, 2009; Montour et al, 2008; Baumann et al, 2006).

Many specialty nursing programs across Canada make efforts to adapt their curriculum and training by engaging stakeholders, bringing together multidisciplinary teams of health care professionals (HCP), policy makers, rural health care organizations, with the aim to find effective solutions to respond to these needs. (Registered Nurses' Association of Ontario, 2015).

Having highly qualified perioperative nurses trained locally, increases the possibility that they will continue to live and work in the rural environment and enables their own integration in the community, with a decrease in attrition rate (Vortman, 2019). Consequently, to maximize the learning experience, it is important to adopt a flexible education program delivery that includes a large variety of tools and applications: virtual learning, classroom hours, simulation, clinical preceptorship support, with a skill mix tailored for the specific clinical site and in consistent with surgical population requirements.

1.2 Program Description - Understanding the Rural Stream

In 2016, after a pan-Canadian environmental scan and literature review were completed (MacMillan, 2016), the Vancouver Coastal Health (VCH) Perioperative Education Program was revised. The program shifted from a site centred, didactic, entirely instructor led model, to a standardized student centered model, evidence based curriculum, based on Association of periOperative Registered Nurses (AORN) Guidelines, and renamed to Regional Perioperative Education Program (RPEP). In part, it was designed to better align with the unique needs at each site, to enhance collaboration between RPEP and operations, to increase consistency in education

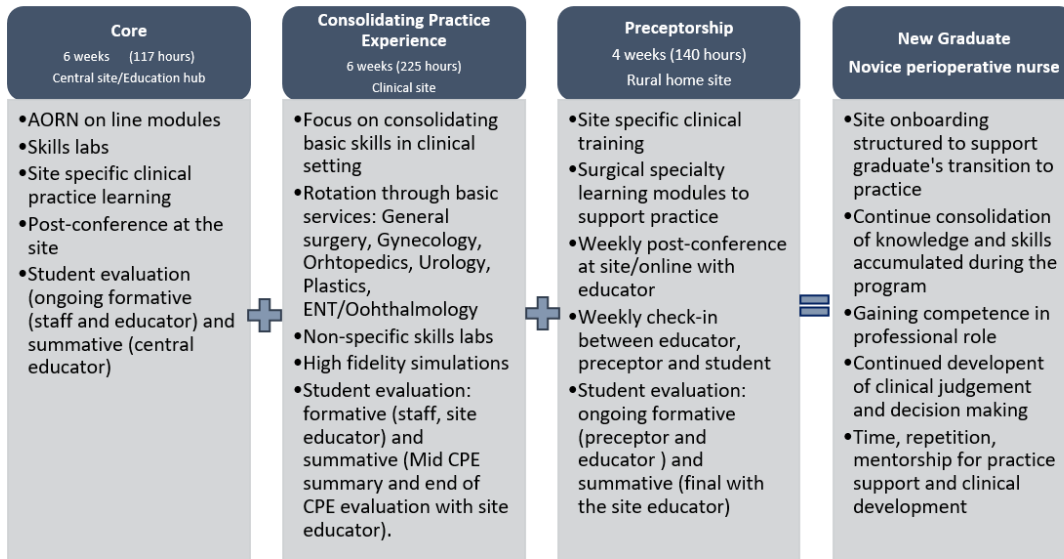
delivery and content, enhance preceptorship experiences for learners and staff, as well as increased graduate capacity. The program utilizes a student-centered approach to teaching, when the learner is actively involved in the learning process. This facilitates critical thinking skills and problem solving abilities, which are key to establishing the foundation for lifelong learning, gaining confidence as a professional, development of autonomous practice (Alfaro-LeFevre, 2017).

The rural stream of the program (RPEP-R) evolved as a necessity for rural sites across VCH (Squamish General, Powell River and Sechelt Hospitals), as a response to an increase in complexity of the surgical services provided at these clinical sites and to meet current and future operating room staffing needs. The program delivers a standardized provincial curriculum for core and foundational knowledge combined with clinical skills training. Its role is complex, multi-layered, and includes elements that synchronise the clinical training and experience within the specifics of the aforementioned rural perioperative sites.

RPEP-R consists of three components: CORE phase (6 weeks), Consolidated Practice Experience (CPE) (6 weeks) and Preceptorship phase (4 weeks). The program introduces the basic perioperative topics, concepts and practice guidelines that are fundamental to perioperative nursing (Figure 1). The training develops the specialized skills, knowledge, attitudes and judgment required to provide safe, competent and individualized care to the perioperative patient by utilizing various learning modalities, including online didactic content; skills-based labs and simulation, and a clinical preceptorship.

The program maintains a strong collaboration at the leadership level, between operating room managers and surgical services directors, as well as program manager(s) and clinical educators who project and model the number of nurses needed to stabilize the perioperative workforce: vacancy rates, turnover and retention rates. This partnership creates operational synergies and provides for seamless communication within and across interdisciplinary teams: surgeons, anesthesiologists, and nurses. It ensures ease of navigation for surgical patients by improving their access to surgical services within the community with no additional travel and expenses, reducing waitlists, avoiding surgical procedures cancellations. It also enhances preceptorship experiences for learners and staff, as well as increased graduate capacity. Current evidence (Painter, 2017), shows that a successful preceptorship program not only provides for a program that flourishes, but increases recruitment and retention of nurses and stimulates a supportive and leader based culture within units that embrace and invest in preceptorship, mentoring and orientation. Maintaining consistency in education delivery and content ensures adherence to a core competencies and standardized provincial curriculum across British Columbia, producing perioperative nurses with a novice to advanced-beginner level of practice (Benner, 1984) upon completion of the program.

Figure 1. RPEP-R Model



2. Ethics

This project is not subject to institutional ethics review, on the grounds that, according to the Tri Council Policy Statement (TCPS2), the overarching Canadian framework for research ethics, “*Quality assurance and quality improvement studies, program evaluation activities, and performance reviews, or testing within normal educational requirements when used exclusively for assessment, management or improvement purposes, do not constitute research for the purposes of this Policy and do not fall within the scope of the Research Ethics Board review*”. (Canadian Institutes of Health Research, 2018). However, this study was approved by the Program manager and the director of Clinical Education Department of VCH. Consideration was given to the data collection process: the participants were contacted via email or phone and were provided with information about the evaluation process, the reason this evaluation was conducted and the voluntary nature of participation, taking into account their privacy, anonymity, and confidentiality. Verbal consent was given/implicit upon acceptance to participate in the interview, and detailed written notes were taken. Confidentiality was a very important aspect of the process, and any necessary measures were taken to preserve anonymity. All notes/comments were coded and are kept in a secure, locked office on VCH facility, and only members of the team have exclusive access to data.

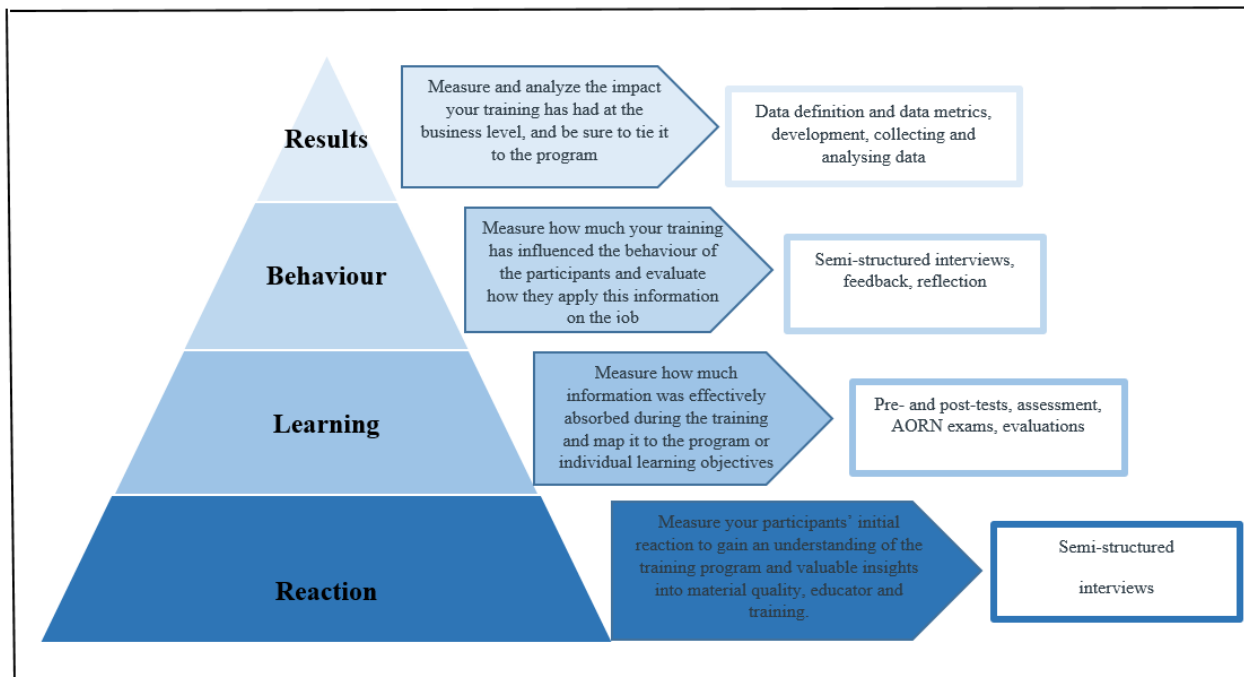
3. Design and Methodology

4.1 General Approach- Selecting a Conceptual Framework: Kirkpatrick Model

There are different evaluation models that can be used to measure educational training activities, reactions and results; however, research has shown that the Kirkpatrick’s model is a suitable tool to determine the effectiveness of an educational program and to evaluate the training outcomes (Rouse D.N., 2011; Smidt A, Balandin S, Sigafos J, Reed VA, 2009).

The program evaluation process for this project was designed to generate *formative* findings through the evaluation questions to further inform recommendations for program improvement, and *summative* evaluation findings, that generated information related to the quality and effectiveness of our program, demonstrating whether the program worked the way it was intended. It was the most appropriate choice to consider the use of the Kirkpatrick Model (KM) because it provided a valuable avenue for understanding the impact of the rural perioperative program on the student’s ability to be practice/job ready. Using the Kirkpatrick Four-Level Training Evaluation Model, we were able to capture qualitative and quantitative data to ensure an accurate process that evaluates the outcomes, the process and the indicators. Furthermore, guided by the interview questions representing all four levels of the model, each successive level of evaluation was intended to answer whether the foundational learning outcomes were met, with a view to building up a picture of the whole-business impact of the rural model. (Fig. 1)

Fig. 1 Kirkpatrick Model



4.2 Methods/Evaluation Tools

The quantitative and qualitative data for the evaluation process were obtained by using multiple sources:

- program documents review
- administrative data review
- semi-structured interviews

Using a combination of multiple approaches to and sources of data into an evaluation project/study can increase the strength of its results (Newcomer, K. E., 2015). This translates into what is known as *triangulation* of data collection methods and data sources, a strong approach to any evaluation or research study, which will be explained and exemplified later on in this report. Both quantitative and qualitative methods have roles to play and can complete each other, by making different contributions to the program evaluation.

The revision of the documents was conducted taking into account the continuous feedback received from the students and educators. The process presented an opportunity to focus on the structure, format and content of these documents and provided important insights from user's perspective, indicating whether they are congruous with the outcomes of the program and consequently in what way they might be adjusted/improved. The information elements, metrics, and program administrative data were reviewed and analyzed. An important aspect to consider was the number of students required by the clinical sites and compared the intake before and after the implementation of the program.

Another strategy that made the most intuitive sense for this evaluation process is represented by semi-structured interviews. Knowing the type of information sought after, it was the purpose of the evaluation that determined the best approach. This method was used to tap into the experiences and perspectives of program participants, the key actors who played a role in implementing the program and all categories involved. While being guided by the questions and associated sub-questions of interest to the evaluation, semi-structured interviews have the advantage of allowing the respondents to freely express their perspectives, without indicating the exact wording. (Cohen et al, 2008). This way the evaluator could focus on specifics as needed, while enabling the participant to explore relevant issues, as well as additional topics that might emerge from discussion. Such characteristic of the interview technique is regarded as a strength of this qualitative method. Contrastingly, there is a limited aspect related to the interviewer experience with the process, their ability to know exactly how to change course, making sure that important areas are covered, but also permits spontaneous ideas that are relevant and interesting to pursue.

Collecting data through interviews is not just an exercise of asking questions and document responses. The evaluator experience plays an important part in building rapport with the respondents, within role's boundaries. Their communication style can facilitate clarification and foster elaboration that can lead to more reflection and interpretation of data (Thorne, 2008). Thankfully, my previous research work and experience with qualitative research methods such as


interviews, focus groups, observation and documents review granted me the ability to apply my knowledge in conducting these interviews.

Semi-structured interview questions focused on the effectiveness of the rural model of the program in addressing clinical site needs (Figure 2). Additional evaluation key questions included in the interview were:

- 1) *To what extent has the RPEP-R delivery model achieved its intended short and medium term outcomes?*
- 2) *To what extent has the RPEP-R delivery model achieved its intended long term outcomes?*
- 3) *What insights does the rural delivery model provide that could support future changes?*
- 4) *To what extent are the outcomes of the project sustainable?*

There is no evaluation method that will answer every question, and a comprehensive program evaluation is likely to occur over multiple evaluations as the program is developed; consequently, the evaluation elements could also be used to report on changes observed for certain data sources and indicators, which require a longer time period to reveal trends. In these instances, baseline data will be measured to set the program delivery model up for comparison at a later date.

Figure 2. Project Logic Model

Inputs	Activities	Outputs			Impacts	
	Influences and Resources	Organization of RPEP_R model teaching and learning activities: <ul style="list-style-type: none"> Program components (Core and preceptorship) 12 weeks (classroom and clinical)-length is site dependent Online didactic content Skills-based labs and simulation Clinical preceptorship at the site 	Collaboration between RPEP-R educators and sites Interdisciplinary communication at multiple level Meet with site leaders at each site Ensure coverage and support from educators Revised RPEP-R curriculum schedule Evaluate program documents Number of education events Number of OR preceptor nurses Enhanced educator teaching experience			Improve student learning Enrich student overall experience Use of variety of multiple learning tools Enhance RPEP-R educator teaching experience
	RPEP-R Model	Preceptors support and education with remote RPEP-R educator assistance Engage with perioperative leaders at each rural site to determine best approach to teaching Use of active learning strategies that engage students and promote critical thinking skills Promoting self-reflection and learning SMART goals Providing books and various resources	Short-term Mid-term Long-term			Increase attrition rates
	RPEP Team Perioperative Operations (Squamish Powell River Sechelt) Funds Personnel		Increased number of OR staff taking preceptor role Novice to advanced beginner graduate	Increased student intake Reduced vacancies Successful program graduates	Increased number of OR staff taking preceptor role Creating of a positive learning environment Reducing patient waitlist and slate cancellation	

4.3 Theoretical Perspective: Interpretive Description

Miles and Huberman (1994) assert that qualitative analysis focuses on individuals' lived experience and the meanings associated to these experiences. Patton (2002) also describes the use of qualitative methods to generate formative and summative evaluation data. He reveals that in order to determine the effectiveness of a program, qualitative methods appear to bring preponderantly additional context and detail.

Giddings, Roy & Predeger (2007), Thorne (2008) and Reimer-Kirkham & MacDonald-Emes, (1997) consider the interpretive description (ID) an appropriate methodology to use in the analysis of the experience related to clinical field, while is also looking at the dynamic of the process, social aspect and relationships. Giddings et al regard ID as an influential part of qualitative nursing research development and a great alternative to the traditional qualitative approaches which might not always serve well the unique knowledge mandate of nursing. According to Thorne, ID offers flexibility, requires imagination and conceptual creation and uses inductive logic in a responsible and credible manner (Thorne et al, 2004).

From evaluator perspective, it was important to explore participants' experiences with the RPEP-R education program using interpretive description as an analytic framework, in an attempt to capture all the nuances and subtleties of data analysis. For this process I relied on my prior experience, as I have used ID in other previous research projects.

One of the steps I took to minimize biases and preserve objectivity, was to not include my field supervisor in the interview process, as she was directly involved in the new concept design of our program. I would like to acknowledge that as a clinical educator with the program I have met few of our graduated students who participated in the evaluation process, however I was not involved in their training, nor did I participate in any direct education activities.

4. Data Collection

The evaluation process focused on a systematic gathering and analysis of qualitative and quantitative data about the program (perioperative nursing education information, support of student learning experience, meeting site operational needs), and will be used to assist in further decision-making to improve the effectiveness of the program.

4.1. Program Documents Review

The evaluation team reviewed the relevant program materials: key program documents, program structure and components, tools created for the rural model delivery, active learning

strategies. A synopsis of the key program documents is presented in Table 3. This method provided data for three of the four levels of the KM: Results, Behaviour and Learning.

Table 3. Key Program Documents

Evaluation tools	Theory/Classroom	Clinical experience	Resources
Daily Feedback	AORN Modules	Clinical hours in OR (~350)	AORN Periop 101 online class
Weekly Reflection	Seminars	Simulations	ORNAC* Standards
Nursing Practice Progress Summary documents	Critical thinking scenarios	Basic Perioperative Skills lab	RPEP Team site access (Learning Hub)
CPE and Final Evaluation documents	Reflective exercises	Non-surgical specific Skills Lab	Hospital Specific Policies/Procedures
Student Clinical Experience Log	Clinical Assignments	Daily Clinical goals	Elsevier/Evolve websites
Student Skills Portfolio		Daily Clinical Prep	Textbook (Rothrock, J.C., 2019)

* *Operating Room Nurses Association of Canada*

4.2. Administrative Data Review

The administrative data were collected from our RPEP-R registry. Furthermore, we accessed AORN website and retrieved student records, via generated report data, associated with post-tests marks and AORN examination results. These data offered information for the learning and results levels of the KM.

4.3. Key Stakeholders Interviews

All the participants in the evaluation process have a diverse disciplinary backgrounds, hold different roles and responsibilities within the perioperative environment, and therefore their various perspectives generated a rich array in the quality of the data. From a knowledge translation standpoint, this means that when participants give their feedback and recommendations for change, they will generate comprehensive action strategies.

Interviewees were identified in collaboration with the evaluation team and contacted via email. The interviews were conducted either in-person or via telephone. Utilizing semi-structured interviews and open-ended questions provided me with the opportunity to collect qualitative information from a variety of perspectives. The use of a semi-structured guide also enabled the interviewees to comment on pre-determined topics, while providing an opportunity for them to address previously unidentified concerns or to emphasize a given issue in a more flexible, conversational style.

In order to have a rounded perspective of the program, it was important to ensure representation of all perioperative health care professionals involved with the program: all graduated students (total of six graduates for the rural sites between 2017 and 2019); managers representing each clinical site; leadership members: head nurses (HN), clinicians (CRN), patient care coordinators (PCC), operating room (OR) site educator; preceptors/OR nurses, RPEP-R educators, RPEP manager.

5. Data analysis

Data analysis began as an inductive process with the use of raw data from my detailed notes, comments and observations from the interviews. Qualitative researchers highlight the importance of keeping notes and comments with impressions about each interview and the interview technique itself (Stubbs, 2008). The purpose of the analytic process in qualitative research is to move back and forth with the intention to tease out themes and patterns, to discover links and associations among ideas embedded in the data (Roper & Shapira, 2000).

When using the interpretive description method, the analysis phase is not a linear process, but a dynamic, multidimensional activity. Thorne recommends that researchers “immerse themselves into the data prior to coding, classifying or attempting to link data” (Thorne, 2008). Keeping this in mind, I repeatedly read my detailed notes and comments, analyzed my observations, so as to get an overall sense of each story. Close reading of the data looks at all the words and common phrases people use, and places them in the context in order to build themes and patterns.

Traditionally, the incipient phase of data analysis would start with the coding development (Liehr, LoBondo-Wood & Cameron, 2009, p. 172), but by doing so, there is a risk of losing the voice of the subject(s). Taking this into consideration, Thorne suggests to keep codes very broad, by giving less attention to the “words and expressions”, and rather contemplating the “ideas and themes”. (Thorne, 2008 p.145). As the analysis process progresses, Thorne recommends documenting ideas that occur subjectively and conceptually, with potential of becoming a core element in the process. She introduced the term “tracking reflections” (Thorne, 2008, p 109), a good technique to maintain a broad codes and a great alternative to rigid coding of data. In the initial phase of data analysis, I engaged within the ‘bulk’ of information and I focussed my attention to what demanded consideration. Thorne suggests that coding is essentially similar to “the initial basket into which the laundry is being sorted” (Thorne, 2008, p. 144). I thoughtfully tried not to schedule interviews too closely to each other, as I needed time to work on data analysis after each interview. Comparing

the data between interviews enabled me to discover patterns and common denominators of the participants' experience.

It is important at this stage in ID not to get attracted by fine details of data, but rather focus on themes and interesting ideas. Marking and color coding thematic similarities, helped me untangle what was of significance and essential, from what was marginally relevant and what was more divergent. In consequence, while 'collecting' data, I was actually constructing an understanding of what exactly represents data and how I correspondingly convey it. As Thorne remarks: "By its very nature, interpretive description uncovers perceptions rather than facts". (Thorne, 2008 p. 122).

In addition to streaming ideas and themes, by going back to the data and look at it from different angles, using a curious approach, learning what attracted me to that idea, comment or thought in the first place, I was able to identify and unveil unique aspects of the data, which were less evident. Each theme was analyzed and reflected upon, and using the KM made it more complex as it focuses on the four levels, as well as different perspectives associated to the clinical role/category of the participants.

Interpretive description is not limited to taking things apart and putting them back together. It provides us with the rationale for engaging ourselves in continuous reflection about our role in data analysis and data construction. We are accountable for our own intellectual process and we need to recognize and take responsibility for the privilege of shaping data. This is not a method of "picking and choosing" (Thorne, 2008 p.124), in other words we are not selecting a particular information to sustain a bias or a certain opinion, yet it will inevitably be influenced by what we bring ourselves as individuals: personality, previous experience and cultural exposure, along with our own biases and inquisitiveness. Thorne further insists that "There is an ongoing obligation to align the direction of the study findings with the motivation of the individuals who participated in creating them." (Thorne, 2008, p. 117). Patton (2002) also reiterates that analysts need to approach the data with a critical lens for any potential biases and preconceptions, with an obligation to "monitor and report their own analytical procedures and processes as fully and truthfully as possible" (Patton, 2002 p. 434). From Eakin perspective, the interpretive analyst's subjectivity should be considered as "something used actively and creatively through the research process" rather than as a problem of bias. (Eakin et al, 2003).

"Because qualitative inquiry depends, at every stage, on the skills, training, insights, and capabilities of the inquirer, qualitative analysis ultimately depends on the analytical intellect and style of the analyst. The human factor is the greatest strength and the fundamental weakness of qualitative inquiry and analysis - a scientific two-edged sword" (Michael Quinn Patton, 2002, p. 433)"

6. Results

A total number of twenty five (25) perioperative health care professionals from the rural clinical sites participated in the semi-structured interviews. They were grouped in five categories, according to their profession/role (Table 2). One student and one preceptor were not available to participate. The interviews were 30 to 60 minutes long and the timing of the interviews was determined through agreement between the evaluating interviewer and each participant's availability. As these interviews occurred two years after the implementation of the program, it also provided feedback and insights about the strengths and areas of development/improvements of the program. The focal point was on participants' personal experiences with the RPEP-R program delivery.

Interpretive description was the methodology adopted for this evaluation process. From the participants' depiction of their individual experiences with the program, one of the major theme emerging in this evaluation was the *insufficient capacity* at the clinical site, specifically workforce, training resources, clinical exposure. This theme is emphasized in all three rural clinical sites. There is an undivided opinion about lack of staff in the OR. Statements such "working understaffed", "consistent over time available", "struggling with nursing shortage", "being short-staffed is like everyday problem"- were frequently used in the interviews. Consequently, this major theme raised a safety concern, as it leads to further unsafe practises such us situational awareness related to emergencies, difficult/awake intubation, and other complex situations that require critical thinking.

In a research that focuses on patient safety in the OR, the authors identified ten highest priority safety issues, and difficult intubation/airway emergencies were among them. (Steelman VM, Graling PR, Perkhounkova Y, 2012).

Another critical challenge that emerged from this evaluation is using students who are in training as full staff. This concern was highlighted by students and observed by RPEP-R educators. This matter has been echoed in a recent article published by the Nursing & Midwifery Council in United Kingdom stating that nurses in training must be considered supernumerary and not counted as staff member. This is what is called "protected learning time" and must be guaranteed to the nurse in training. The student usually is buddied with a nurse/preceptor that supports and overlooks the learning process. The level of supervision depends on the risk associated with the skill or intervention performed and the level of competence and self-confidence of the learner (NMC, 2018).

Promoting a preceptorship culture in the perioperative environment was another strong attribute of the rural program that emerged from discussions. All preceptors participating in the interviews shared their opinion about how important it is to nurture a positive learning environment in the OR and share the knowledge and skills with the new staff members. They appreciated the various preceptorship resources made available on the program website and the continuous support of the RPEP-R educators. Few of them expressed their "pride and joy" of being preceptors, in spite of working short staffed and under pressure. An interesting remark was made by one of the

clinicians referring to preceptorship based training as the “new world meeting the old”. Some of the preceptors commented on their involvement with novice nurses, with limited previous experience in clinical setting, which requires extended support and teaching.

Within this context, there was a large amount of comments from all participants about rural operating room nurses expected to work either in Surgical Day Care (SDC) or to provide post anesthesia care in the Post-Anesthesia Care Unit (PAR/PACU). Both represents different nursing fields that require specialty training on their own. Although this issue was not directly related to our program and training, it was vastly covered by all participants in the interviews.

While there is a general message about the lack of training skills available in SDC and PAR/PACU, using OR nurses in these areas increases apprehension among nurses. It became remarkable to me when I heard one clinician’s standpoint saying that “something needs to be done”. The perspective offered above demonstrates the pressure nurses are exposed to and working under, and emphasises the need for a better communication with leadership and decisional factors to get involved and find solutions to this problem.

The respondents generally expressed their positive reaction towards the RPEP-R program, including but not limited to: its flexibility in delivery, rapid adaptation, alignment with a core competencies and standardized provincial curriculum, comprehensive clinical training and various learning tools.

Program communication strategies were appreciated and considered one of the strong factors that contributed to the program implementation success. RPEP-R engagement at each clinical site with perioperative leaders and staff was positively regarded by the respondents.

There is a unanimous reservation among all program graduates regarding the program documents. While all of them find the Daily Feedback Form and practice evaluation process very useful, many of them stated that the Clinical Preparation Tool is “not too easy to navigate”, “is overwhelming and time consuming”; some of the students were very specific affirming they spent three to five hours of preparation for everyday clinical procedures. Many participants considered the program available resources comprehensive and useful, while one student stated they seemed “too many and a bit overwhelming”.

The theme of the program effectiveness was introduced from the contributions of all categories of respondents who indicated that at the end of their training, the students acquired the knowledge, skills level, competencies and aptitudes to meet the perioperative novice nursing criteria that vest them with confidence and readiness for the job. These findings are congruent with the data retrieved from the RPEP-R registry and AORN website, which indicated that the students passed the AORN exam on their first attempt with an average score of 91% (Table 2). These results are also consistent with the clinical student evaluations documents, as well as post-tests marks and clinical skills lab evaluation.

The four levels of the KM provided the most appropriate framework for the evaluation of our program. Each level of the model has its own components to define the specifics and support the

capturing of the most relevant qualitative and quantitative data. The use of mixed methods brought different perspectives to our program evaluation.

Level 1-Reaction: Described initial participants' reaction to the program, which was depicted using words like: flexibility, accessibility, certification, comprehensive, customization, delivery modes, engagement, effectiveness, orientation to the program, feedback and evaluation, facilitates learning environment, resources, relevance, time for completion. These are sub-themes evolved from semi-structured interviews data.

Level 2-Learning: Provided a summary of the information that was effectively absorbed during the training and mapped according to the individual learning objectives. (AORN exam attempts and results, AORN Periop-101 modules scores, skills assessment/evaluation tools, checklists, student experience log, skills portfolio). At this level, the learning process has multiple layers, and includes students, preceptors, as well as RPEP-R educators.

Level 3- Behaviour: This level provided a reflective synopsis of how much the program influenced the participants' behaviour. The communication strategies maintained at all levels and engagement of the stakeholders from the incipient phase of presenting the program, flexibility in delivery and customization of the clinical experience were strong assets for the successful implementation of the program. There is a significant concern regarding training capacity of the clinical sites and an ongoing need for education support (staff shortage, resources, and multiple learners).

Level 4- Results: Fourth level of KM measures and analyses how our program achieved its medium and long-term outcomes, which translates into increased intake of students (6), increased ability of the rural sites to secure training seats, increased number of nurses willing to become preceptors with a positive culture shift related to the operating room learning environment. The retention rate was 100 %, all six graduates were still working at their rural clinical site at the time of this evaluation. This is an important aspect of the rural training, because research show that HCP with a rural background are more likely to choose working in these areas (Dolea et al, 2010). A rural study in Australia displayed evidence and strategies related to the effectiveness of HCP retention in remote areas (Buykx, Humphreys, J. Wakerman, J. & Pashen, D., 2010).

7. Conclusions

8.1 Strengths and limitations

One of the strengths of this program evaluation is represented by the integration of all four levels of KM, this way it corroborates the data obtained from multiple sources and different clinical sites, providing rich information. Triangulation of data collection methods and data sources is a strong approach to any evaluation process.

The use of interpretive description might play a contradictory dual role in this evaluation process. As a strength, the rigor of interpretive description is based on its inductive analytic approach, designed to create means of understanding of the clinical field, including medical education research (Burdine, Thorne, Sandhu, 2020), nursing training evaluation (Catherine Jones, Sue Randall & Jennifer Fraser, 2020); clinical practice (Kalengayi, F.K.N., Hurtig, AK., Ahlm, C. et al, 2012). Contrastingly, interpretive description is a methodology that relies on interpretation and seeks to discover themes and links, patterns and relationships.

As aforementioned, although the evaluator is a clinical educator with the perioperative program, she was not directly involved in the training and education of any of the RPEP-R graduates participating in the evaluation process. Thus, there was minimal to no risk for perceptions of potential conflict of interest, but the evaluator still needed to acknowledge and reflect upon it.

It is possible that this evaluation would have been benefited from the use of questionnaire as an additional method for collecting quantitative data; however, this might be arguable, considering the size sample involved with the rural stream of the program.

8.2 Recommendations

The generally consistent positive results and based on the evaluation findings related to our perioperative rural program lead us to the conclusion that the rural stream of the perioperative education program responds to the needs of the rural clinical sites.

At the time of the interviews and based on the feedback received from the stakeholders, our program initiated the introduced new changes, some of which are already being implemented.

Measures that already have been considered or implemented:

- As a response to enhance the educational support from RPEP-R educators we consider introducing a webinar communication plan as an additional tool for maintaining a close loop communication of the triad student-preceptor-educator during preceptorship phase.
- Customizing CPE phase of the program according to the range of procedures (surgical specialty and complexity) that are done at the site
- In support for the sites with limited capacity, the four weeks of preceptorship will split and be done two weeks at the regional clinical site and two weeks at the rural clinical site.
- The RPEP-R documents have been reviewed and changed into a more simplified, user friendly format
- Redundant data/multiple similar documents were eliminated and the evaluation documents were streamlined.
- Maintain the flexibility of the program and being open to feedback and suggestions.

The evaluation plan results will be presented to our RPEP-R team and our Clinical Education Department within VCH. The evaluation findings will be used for additional program improvement and further decision-making. The intent is to continue to provide the sites with the

best knowledge, research and support to allow for a positive, collaborative and supportive learning environment, in alignment with different site needs based on their required surgical services.

Ultimately, the objective of this program evaluation is to facilitate specialty perioperative training of nurses in the rural areas, to foster the development of a sustainable nursing workforce and, consequently, to promote access to care and the best possible health outcomes for residents of rural, remote regions.

Communication will be on-going between the evaluation team, perioperative educators and the perioperative sites and the evaluation findings will be shared. A project follow up is scheduled in the fall of 2022, including re-assessment of the implemented recommendations.

8. References

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10. Appendices

Table 1. Participants

	Category	Role/ Profession	Number participated	Number involved	Participation Rate %
Rural sites (3)	Site management	OR managers	3	3	100
	Site Leadership	Site Educator Head Nurse/PCC Nurse Clinician	5	5	100
	RPEP graduates	Perioperative Novice Nurses	5	6	83.3
	OR Staff nurses	Preceptors/OR Staff	7	8	87.5
	RPEP-R	RPEP Manager RPEP-R Educators	5	5	100
Total			25		94

Table 2. Program Administrative Data

	Total Number of program graduates	AORN exam 1st attempt pass %	Average score AORN exam %	Average score AORN Modules %	Site Retention %
All clinical sites	6	100	91	91.3	100

Data retrieved from AORN site (via generated report data), RPEP registry, Clinical Education Department, VCH.

