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NURSE RETENTION IN THE OPERATING ROOM AFTER PERIOPERATIVE CORE CURRICULUM COMPLETION

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ABSTRACT

With the cost, in the US, of training one operating room (OR) registered nurse exceeding 50,000 USD (\$67,073 CAD) retention beyond the first year is a priority. This quality improvement project was conducted at a 500-bed medical center in a mid-west metropolitan area in the United States and incorporated *Periop 101 Core-Curriculum* modules into the operating room nurse orientation to increase nurse retention. Unless otherwise specified statistics and dollar values in this article are based on the US.

One-year retention rates were 59% in the pre-implementation group and 87% after adopting *Periop 101* for orientation of newly hired registered nurses. Second year retention rates were 37% in the pre-implementation group and 70% after adopting *Periop 101*.

Because of predicted nursing shortages the American Association of Colleges of Nursing declared nurse retention as a strategic planning priority for nurse leaders.¹ The Canadian Nurses Association released, in 2008, the report *Toward 20/20 Visions for Nursing*, that discusses the human resource issues related to nurses and their education and training.² The Institute of Medicine report,³ *The Future of Nursing: Leading Change, Advancing Health*, called upon the United States to strategize how the nursing workforce can meet increasing healthcare demands. Likewise, the Canadian Nurses Association's report, *A Nursing Call to Action*, reported tactics to develop new models of healthcare delivery to ensure nurses work to the full extent of their education and practice to meet increasing health care needs in Canada.⁴

In addition to the current concerns of adequate supply and demand of nurses, another factor that will significantly impact healthcare in the near future is the retirement of baby boomers in the

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INTRODUCTION

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nursing workforce. According to Auerbach, Buerhaus, and Staiger,⁵ nurse retirement in the US is projected to accelerate to 80,000 annually over the next decade. In comparison, Canada is projected to have a shortage of 60,000 nurses by 2022.⁶ The financial burden of nurse turnover ranges from \$10,000 USD to \$88,000 USD (\$13,413-\$118,040 CAD) per nurse depending on the practice area;⁷ with the exception of the OR where the amount may be exceeded due to the lengthy orientation.⁸ In a recent national report issued by Nursing Solution Inc.,⁹ nursing turnover in surgical services was 12.8% in 2016, and 13.6% in 2017. The trends and data regarding the nursing workforce provide the impetus for nurse leaders to develop nurse retention strategies. Specialty areas, such as the OR, provide a unique retention challenge for newly hired RNs because of the unrealistic expectations and unfamiliarity of surgical

nursing.^{10,11,12} A contributing factor of the current knowledge gap, specific to perioperative nursing, can be attributed to the little or no exposure to surgical nursing in the typical nursing curricula. According to Wade¹³ perioperative nursing was historically a specialty, requiring extensive clinical rotations to achieve competency, but was later re-categorized as a technical skill and removed from nursing curricula. This lack of knowledge and skills leads to unrealistic expectations and dissatisfaction by the newly hired nurse unless action is taken to bridge the gap.

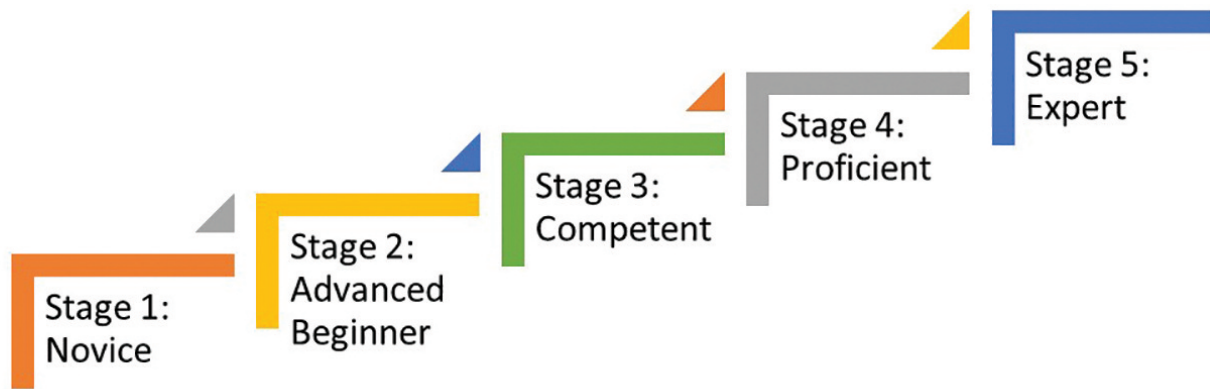
PROBLEM STATEMENT

Retaining nurses beyond the first year in the OR is an organizational priority as the cost of training one OR nurse may exceed \$50,000 USD (\$67,073 CAD).^{8,14} A novice OR nurse is defined by the Association of peri-Operative Registered Nurses (AORN)¹⁵ as any

nurse without OR experience, including both new graduate nurses and experienced nurses from a non-OR background. Novice nurses have minimal past exposure in the operating room which can lead to higher stress levels during the orientation process.¹⁶ An expert acute care nurse may change career paths and become a novice OR nurse.

According to Benner¹⁷ (see Figure 1), the nurse develops skills and knowledge, over time, through education and experience. The once expert, now novice nurse, experiences the challenges of learning new skills and knowledge in the complex surgical environment.¹⁸ These complexities include technological advances, unique regulatory requirements such as time-outs and debriefings, and the demands of the collaborative approach required in a “closed” perioperative setting.¹⁸ The new graduate nurse will have

Figure 1. Benner’s Novice to Expert Model.



Stage 1 Novice: Nurse has no experience in area of practice.

Stage 2 Advanced Beginner: Nurse demonstrates minimal acceptable performance due to no prior experience in situations; is undergoing knowledge development and will be skillful and efficient in this stage.

Stage 3 Competent: Nurse has been working in same role for 2-3 years; is demonstrating efficiency, confidence, and is able to establish a plan using abstract and analytical contemplation of a problem.

Stage 4 Proficient: Nurse learns through experiences and is able to modify plans in response to past events; has improved decision-making skills and is able to recognize the norm and take a holistic approach to the situation.

Stage 5 Expert: Nurse is an accomplished clinician and is able to adapt skillfully in situations with no prior experience; is able to focus in on the problem and provides an accurate diagnosis.

Source: Benner P. *From novice to expert: Excellence and power in clinical nursing practice*, Menlo Park, CA: Addison-Wesley Publishing Co; 1984. P 13-34

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Another consideration for nurse leaders is that by 2020 millennials will make up 50% of the workforce.²³

similar challenges because surgical nursing knowledge and skills are absent from, or minimal in, the typical curricula of most undergraduate nursing programs.¹⁰ All of these challenges unique to a new job in the OR may impact the nurse's satisfaction with the surgical environment. Although no studies examine the transition of experienced nurses from acute care to the operating room, Ashley and colleagues conducted a series of studies on the transition of acute care nurses to primary care.¹⁹⁻²¹ A consistent theme across those studies is that inadequate orientation and lack of ongoing education was a significant dissatisfier for experienced nurses transitioning to a new specialty. The researchers recommended targeted orientation and ongoing support to improve recruitment and retention of experienced nurses.

There are additional factors influencing nurse recruitment and retention. Regan and colleagues conducted a descriptive qualitative study to explore new graduate nurse transitions in Canadian healthcare settings.²² The investigators uncovered important insights on factors contributing to new nurse retention. The researchers recommended nurse leaders offer a supportive environment by providing resources to address incivility and bullying, ensure a positive transition into the work culture, and serve as a transformational leader.²² Another consideration for nurse leaders is that by 2020 millennials will make up 50% of the workforce.²³ Millennials have established personal goals and expectations for their employers that are diversely different from previous generations. These expectations have led to the adoption of new policies around recruitment and retention to attract millennials. Employers should revise policies while improving communication practices that align with the expectations and goals of the millennial nurse.²⁴

LITERATURE REVIEW

A review of literature was completed using PubMed with the search terms

nurse retention, operating room nurse, Periop 101, operating room core curriculum, and operating room orientation. While there is diverse literature available on implementing retention strategies in acute care nursing settings there was little in the literature on specific approaches for retention among operating room nurses.

Four articles reviewed the adoption and implementation of *Periop 101: A Core Curriculum™ (Periop 101)* for new hires. Two of those authors reported decreased turnover of new hires who were oriented using this core curriculum. According to AORN, the recommended duration for a novice OR nurse's orientation is 6-12 months including the didactic and clinical components.¹⁴ Didactic and clinical components can be delivered through *Periop 101*.¹⁵ Bragdon described the use of *Periop 101* as a corrective action to improve compliance with standards of practice and to create a culture of safety among operating room nurses in an urban Massachusetts hospital.²⁵ The goal was for all registered nurses to complete *Periop 101*, during their scheduled hours of paid time, regardless of their length of tenure at the hospital or years of operating room experience.²⁵ The quality improvement effort resulted in a measurable increase in compliance with electronic charting and an increase in the completion of the surgical safety checklist.²⁵ The impact on retention rates was not the intent of introducing the curriculum and therefore was not measured.

Byrd, Mullen, Refro, and Harris implemented *Periop 101* to address the difficulty of recruiting and retaining newly graduated registered nurses in the OR. Over a three-year period, nine nurses were hired and received the *Periop 101* orientation paired with a strong precepted clinical orientation. Previous recruitment and retention rates were not recorded, but the authors reported an improved retention rate of 78% over 3 years.²⁶

A level II trauma center in Loveland,

Colorado, had a 75% turnover rate in a cohort of four newly hired perioperative nurses. The nurses provided feedback that the orientation program left them unprepared. *Periop 101* was adopted and trialed for a subsequent set of four new hires. *Periop 101* was used during the five-week didactic portion of orientation followed by a clinical precepted orientation, with the total orientation lasting 12 weeks. At this facility, *Periop 101* modules were viewed, in the morning, and followed by a short quiz. Clinical experiences in the afternoon reinforced the content. At the end of 15 months, the retention rate was 100%.¹⁸

Lastly, at a York, Pennsylvania, level I trauma center, nurse turnover was occurring at such a high rate that recruitment could not keep pace with nurses retiring or resigning. Many new hires were resigning during orientation or immediately after. *Periop 101* was part of a larger overhaul of the recruitment and orientation to combat the low retention rate. *Periop 101* was completed prior to beginning the OR clinical portion of orientation. Following the adoption of *Periop 101*, 25 out of 27 new hires remained in the department after 2 years (a 93% retention rate).¹⁶

In the four instances, found in the literature, of outcomes from adopting *Periop 101*, variations in the delivery of *Periop 101* were identified, with no best practices highlighted or recommended. In all four case studies the number of nurses in the *Periop 101* orientations were small. One facility did not measure retention rates but reported improved quality and safety outcomes. In the other three facilities one reported improved retention for 6 months and the other two reported improved retention lasting 2 years. Those facilities also improved other aspects of the recruitment or orientation program simultaneously to adopting *Periop 101* that likely contributed to the improved retention rates. Improvements reported included marketing strategies to promote the perioperative nursing orientation program in newspapers¹⁶

and using performance interview questions during the hiring process.²⁶ At one facility, the nurse manager recruited preceptors and offered a precepting course.¹⁶ Two facilities implemented weekly orientee meetings to address issues the orientees were experiencing.^{16,18} Another facility improved orientation by allowing the orientee to select an available shift to work after completing orientation.¹⁸ The cases presented in the literature provide support that implementing *Periop 101* as a major component of orientation would lead to decreased turnover among newly hired registered nurses in the operating room.

Periop 101

Periop 101 Core-Curriculum was developed by AORN experts and is based on the evidence-based *Guidelines for Peri-Operative Practice*.²⁷ The *Periop 101* modules are administered and licensed through AORN and *Periop 101* aims to provide cost savings from decreased turnover, improved retention, and staff/physician satisfaction through standardized education.^{15, 25-27}

Periop 101 is a comprehensive program of computer-based learning modules for novice perioperative RNs. The core-curriculum provides the foundational knowledge a novice OR nurse needs in conjunction with hands-on clinical training. Based on the setting, the organization can choose from three different learning plans: OR nurse, obstetrics RN circulator, or ambulatory surgery center nurse. The learning plans also incorporate competencies following the graduate level quality and safety education for nurses (QSEN). In addition, each *Periop 101* student receives a free one-year membership to AORN and 41.7 continuing education contact hours upon successfully completing *Periop 101*. A complimentary administrator course containing over 150 resources and tools for planning and implementing *Periop 101* is included. *Periop 101* costs less than \$1,000 USD (1,341 CAD) per orientee.²⁷

When facilities do not use *Periop 101*, the orientation content may be designed by a nurse educator or leader. The educator could spend hours of planning along with updating documents to reflect current practices. With the cost of OR nurse turnover exceeding \$50,000, USD (\$67,073 CAD)^{8,14} the *Periop 101* program may serve as a strong investment and cost savings to the organization while ensuring the content reflects current best practices. When reviewing the cost of turnover per nurse, the *Periop 101* program appears to provide a positive return on investment in terms of value and quality.

Purpose

The purpose of this project was to determine if implementing *Periop 101* for novice nurses during orientation would improve registered nurse retention rates in the OR. The quality improvement project took place in a 500-bed, not-for-profit, level I trauma, Magnet designated® hospital in the Midwest. The goal of this initiative was to increase overall nurse retention rates in OR new RNs at one and two years after hire. In the initial project year of 2015, 13 new registered nurses hired for the OR completed *Periop 101* during their orientation period. Prior to 2015, orientation consisted of a non-structured process including a review of policies and procedures and hands-on experiences. The Institutional Review Board granted an expedited review and determined this project to be exempt due to minimal or no risk to human subjects.

RESULTS

To identify if *Periop 101* influences the intent of a novice RN to remain in the OR, new RN hire retention rates were measured. These retention rates were measured utilizing all part-time and full-time OR nurses and both voluntary and involuntary terminations. In 2015, the OR began administering *Periop 101* to all novice nurses to improve nurse retention. The retention percentage for newly hired nurses in

Table 1. Periop 101 Implementation Retention

Number of hires two years prior to Periop 101	One year retention	Two year retention
27	59% (16)	37% (10)
Number of hires two Years Post Periop 101	One year retention	Two year retention
23	87% (20) * <i>P</i> =0.019	70% (16) * <i>P</i> =0.015

the year prior to implementation of *Periop 101* was 59% at one-year of hire and 37% at second-year of hire. As of December 2017, the retention rate for nurses who completed *Periop 101*—was 87% after first-year of hire and 70% after second-year of hire. After conducting a test of two proportions, the improvement of the one and two-year new RN hire retention rates were found to be statistically significant ($p < 0.05$) (see Table 1).

DISCUSSION

The introduction of *Periop 101* into the orientation for all new registered nurse hires was successful. The aim of the initiative was to increase new RN hire retention after one and two years of hire. The retention rate for nurses who completed *Periop 101* was 87% after one-year of hire and 70% after the second-year of hire, markedly higher than 59% at one-year and 37% at second-year of hire prior to adoption. Findings from this initiative reinforce prior cases reported in the literature that suggest *Periop 101* is a successful strategy for retaining OR nurses.^{16,18} A point of interest is the variation in the administration of *Periop 101* across facilities. It is not known whether these variations in implementing the curriculum affect the rate of improvement in the retention of registered nurses. Although the cost of the curricula of less than \$1000 USD (1,341 CAD) per orientee is significant, the investment can pay off in the retention of staff who have received a standard knowledge and skills content and evaluation during orientation. As this program is focused on the US market

Canadian costs and results are not measured and Canadian hospital funding models could require different approaches. The concept of a standardized program to improve retention in Canada would require further discussion and research.

Limitations

A limitation of this project was the inclusion of only one OR department in one facility rendering the findings of questionable generalizability. Aggregating retention rates across multiple sites and types of facilities following the adoption of *Periop 101* would provide stronger evidence of the value of the curricula for registered nurse retention. Additionally, there was a small sample size of 27 nurses pre *Periop 101* adoption and 23 nurses post *Periop 101* adoption. Having a larger sample size would enhance the results of this project. Additionally, demographical information such as the age of the nurses taking *Periop 101* and if the nurse was a new graduate RN versus having RN experience outside of the OR would be beneficial to identify in future studies. Future research is recommended to determine if the age and entry into nursing contributes to nurse retention in the OR. This project did not measure other factors that improve retention such as civility or transformational leadership. Also, this project had a short two-year time period which limits the findings. Measuring retention over an extended period of time would strengthen the findings. To address these limitations, this project will need to be continuously monitored to measure the effect *Periop 101* has over a sustained period of time.

CONCLUSION

In response to workforce trends, the Institute of Medicine and the American Association of Colleges of Nursing have voiced valid concerns for the predicted nursing workforce shortage. The Canadian Nurses Association echoed those concerns about the connection

related to nursing professional development and human resource issues such as retention.² Nurse leaders must analyze initiatives that will maximize the return on the investment in orienting novice nurses for the operating room and result in the retention of valued new hires. This project reinforces that a structured orientation process including *Periop 101* is a valuable investment toward addressing this concern.

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