

Implementation of Mentorship Focused Operating Room Circulating RN Training Program

Richmond, J., Issa, C.

University of New Mexico Hospitals

ABSTRACT

The Operating Room (OR) has historically been an intense and challenging training environment for nurses. Throughout the country, ORs experience high Registered Nurse (RN) turn-over and low retention after training RNs. Between January 2016 and December 2018 at The University of New Mexico Hospitals (UNMH), 68% of the RNs who began with no prior OR experience completed their training, but only 48% of those RNs were retained in the OR at 18 months from date of hire. Historically, OR training programs were expensive, classroom based, content heavy, lacked mentorships, and viewed by learners as antiquated. Currently, a younger generation represents a significant portion of newly hired nurses into the OR environment. In January of 2019, the Main OR Unit-Based Educators wrote an original Circulating RN Training Program (CRNTP) which dramatically shifted how RNs were trained into the OR environment. Focusing on broad concepts like patient advocacy, critical thinking skills, and problem solving skills; learning started shifting into being mentorship focused. Concept-based training programs actively engage new RNs in the surgical specialty of nursing. Since the curricula change, training program completion rates have increased from 68% to 92%; with a current 100% program completion rate of 2020 cohorts. In post-completion surveys, RNs have reported feeling increased job satisfaction. Data collection continues to show increased OR nurse retention after the implementation of the new curriculum. CRNTP trained RNs are reporting feeling adequately trained and competent to work in the OR environment. Through shifting to a concept-based, mentorship forward CRNTP, completion rates are expected to stay high, and UNMH can expect to retain more surgical specialty trained, highly proficient, RNs to provide exceptional patient care in the OR environment.

LITERATURE REVIEW

The Operating Room (OR) is an intense and challenging training environment for new nurses which affects Registered Nurse (RN) turnover and the retention of OR RNs. Starting in 2019, at the University of New Mexico Hospitals the Circulating RN Training Program (CRNTP) dramatically shifted how OR RNs are trained. This literature review will show that a mentorship focused, concept-based training program actively engages new RNs in the surgical specialty of nursing resulting in increased program completion rates and retention rates of RNs in the OR.

Training OR RNs requires a significant time commitment and effort on the part of the hospital's OR staff, its educators, and its providers. There is additional difficulty in recruiting and retaining nurses new to the OR because of their unrealistic expectations and unfamiliarity with surgical nursing, as it is not typically a specialty that nursing students are exposed to. In the past, RN education included experiences in the perioperative setting, but today OR rotations are typically removed from the curricula of undergraduate nursing programs (Martin, 2011).

Another factor in retention is that when proficient or expert nurses from non-surgical nursing specialties return to being a novice in a new setting, they experience the challenges of learning new skills and knowledge in a complex environment, which can be a difficult transition (Vortman et al., 2019). An ongoing challenge to knowledge retention is the immense amount of information that must be disseminated to OR RN trainees in concept-based segments that must be linked to previous nursing knowledge to increase the retention of accumulated information over time.

Nursing education is content heavy and the shift to a conceptual learning approach has been on the horizon for many years. According to Giddens and Brady (2007), conceptual learning is a process by which students learn how to organize information in logical mental structures. This kind of learning fosters critical thinking skills and a deeper understanding of topics through the connections students make to past learning and having to apply concepts in multiple contexts (Giddens & Brady, 2007). Once the information has been presented in manageable concepts, one of the best ways to ensure a trainee will be successful long-term is to foster mentorships.

Preceptors are one of the most important sources of knowledge for nurses new to a specialty and have been shown to improve a nurses' competence of practice (Ke et al., 2017). Mentoring is also helpful in bridging the gap between generations of learners. New graduate nurses often feel uncomfortable in their roles and a mentor can provide direction, explain expectations, and demystify the learning curve new nurses often struggle with (Dunn, 2014). The CRNTP uses a preceptor model and adds a mentorship component helping to socialize new nurses to their professional role, which has been shown to increase job satisfaction and retention among new nurses (Ke et al., 2017). In addition, negative mentoring experiences affect job satisfaction among nurses due to bullying, which is common within the profession (Topa et al., 2014).

CONTENT

Nursing is challenging and frequently characterized as a profession that eats its young. This autophagy has been described as a devastating spiral with the power to swallow up new nurses (Dunn, 2014). Lateral violence and bullying are commonly reported by new nurses and the Operating Room (OR) environment can be especially challenging because it is isolated from other units in the hospital behind locked doors (Edmondson et al., 2019). Those locked doors are a means of traffic control and are intended to protect sterile fields and patients, but they also have the ability to isolate vulnerable new nurses. Mentoring partnerships between Registered Nurses (RNs) new to an environment and experienced preceptors is a strategy that can increase the acceptance of a new learner into established groups and bolster their proficiency, thereby increasing learner confidence, leading to improved retention of new nursing staff by increasing job satisfaction (Topa et al., 2014).

In the Main Operating Room at the University of New Mexico Hospitals (UNMH) a mentorship focused concept-based training program was written by the Unit-Based Educators (UBE) with an implementation date of January 2019. The UBE is a position held by a nurse at UNMH who embodies an expertise in the nursing specialty of the unit and answers the calling to be an

educational resource for that nursing unit. The intent of the novel, innovative training program was to accentuate the resource potential of the existing RN preceptors into formalized mentorships, include a pedagogy that had the ability to be adaptive to a wide variety of learners, and to be transferable between the three ORs that are included within the UNMH Surgical Services Department. The goals and outcomes of the Circulating RN Training Program (CRNTP) were to increase RN retention within the department, provide an adaptive OR clinical education to each individual learner, and to be culture forward by promoting a healthier work environment for all staff both during and after CRNTP completion.

The signs of a negative work environment are difficult to mask. Hospital units that always have jobs posted and are constantly hiring RN travelers to fill critical staffing shortages, can be identified simply by looking at the number of jobs posted for individual departments. Great units to work in are rarely looking to fill posted positions. Other warning signs include: increasing traveler to permanent staff ratios, a pattern of travelers only staying for the length of their original contract, and travelers declining to sign contract extensions.

In 2018 and 2019 the Main OR at UNMH lost a significant number of experienced RNs. In 2019, the Main OR initiated travel RN contracts for the first time in eight years. So far in 2020, the Main OR has seen minimal attrition of RNs and all of the RN travelers, who were offered contract extensions, chose to extend at UNMH. These numbers show a trend of increasing job satisfaction and culture improvement within the department. The upward trend of Main OR staff retention corresponds with the 2019 implementation of the CRNTP, and the concurrent advent of a committee whose purpose was to improve the preexisting unpleasant OR culture.

According to Jakubik et al. (2016, p.150), "The goals of mentoring are lifelong learning, professional advancement, employee engagement, and succession planning." Implementation of a mentoring structure has the potential to address learning environment deficiencies in the hospital workplace. In the OR, learners often have negative perceptions of learning experiences (Rhoda et al., 2016). Additionally, the loss of experienced OR nurses represents years of clinical expertise, which is a knowledge gap that can only be filled with time and the replacement of staff in a meaningful way. "Only a small percentage of all nurses are perioperative nurses...it is estimated that nearly 20% of those currently employed will retire while demand for nurses will continue to increase" (Messina et al., 2011, p.180).

Most learners in the hospital environment can memorize facts: lab values, nursing diagnoses, disease processes, or medication indications and actions. Many nurses grapple with the dilemmas of how to assimilate the massive body of ever-changing knowledge needed for safe patient care in the modern healthcare environment (Vacek et al., 2019). The OR environment is a highly specialized area of nursing that requires a high level of competence in many unique areas including: surgical procedures, surgical techniques, instrumentation identification and application, sterile techniques, implant application, specialty equipment, sterile processing, anesthesia application, patient safety, and patient advocacy. The surgical nurse educator faces the daunting task of teaching nurses new to the OR environment a potentially overwhelming amount of specialty knowledge while simultaneously empowering the RN learner to be an advocate for their patient, themselves, and their coworkers in a high-stress, high-stakes

environment. It is no surprise that ORs continuously rank in the top three for nursing specialties with the highest turn-over and lowest retention rates (Nursing Solutions, Incorporated, 2016).

With the combined estimates that it costs roughly \$60,000 to train one nurse to a new practice environment and that up to 30% of nurses leave the profession within 2 years of graduating and finding employment; it is an understatement to say that nursing needs a new action plan for RN training and retention (Littlejohn, 2019). In 2013, turnover for bedside nurses ranged from 4.4% to 44.6% depending on facility and specialty (Trossman, 2013). These statistics paint a frustrating picture of a workplace environment that takes a toll on both staff and individual hospitals. Sandhusen et al. (2014), demonstrated a positive return on investments after the implementation of a perioperative nurse fellowship program at their institution which resulted in an overall retention of 72 of 110 recruited nurses to their OR specific training program. It is advantageous to both the nurses and the facilities that employ them, to find effective long-term solutions for nursing turn-over and retention challenges.

Prior to the Main OR's adoption of the CRNTP, previous and current department UBEs had used a variety of training programs, including the Association of Operating Room Nurses' (AORN) formal training program, PeriOp 101, with mixed success (Conner et al., 2018). Previous training programs implemented at UNMH were expensive, classroom based, content heavy, lacked mentorships, and were viewed by the new generation of learners as antiquated. The millennial generation currently comprises a significant portion of newly hired nurses into the OR environment. Upcoming Generation Z nurses will expect learning to be geared towards themselves and millennial learners as they enter the nursing workforce.

Between January 2016 and December 2018 at UNMH in the Main OR and Pediatric OR, 68% of the RNs who began with no prior OR experience completed their training, but only 48% of those RNs had been retained in the OR at 18 months from date of hire. At 24 months post-training completion, that 48% retention number made another significant drop to 32% of those RNs who were still employed full time in the combined ORs. This data represents people, knowledge, time, money, and resources lost; all of which needed to be recaptured moving forward. Due to their clinical and education backgrounds, the UNMH Main OR unit-based nurse educators had ideas that they believed would improve how OR circulating nurses were trained and improve job satisfaction in the process. The intent was to shift from the traditionally structured content-heavy learning model to a more fluid concept-based model inspired by a unique New Mexico (NM) home-grown resource.

The New Mexico Nursing Education Curriculum (NMNEC) would become the inspiration for a new way to train nurses in the OR environment that would pace knowledge and educational experiences at a rate that was retainable. Utilizing broad concepts to build a foundation of knowledge and teaching learners how to identify and fill their own knowledge gaps as they were identified, is the generalized premise of how NMNEC restructured nursing education throughout the State of New Mexico. The Main OR educators were inspired by the NMNEC program and believed that the concept-based training structure could be adapted to education in complex hospital environments.

Concept-based nursing programs are reshaping how nurses are taught large volumes of medical and nursing knowledge in a short period of time where the desired outcome is not the regurgitation of facts, but the application of critical thinking skills and nursing assessment skills to make nursing decisions that both support and advocate for patients. “The New Mexico Nursing Education Consortium (NMNEC) was developed in 2009 as a collaborative of every state-funded nursing program across the state” with the broad goal of standardizing NM nursing programs into a statewide concept-based curriculum (NMNEC, 2020, p. 1). It focused not on minute details, but on the larger ideas of, “producing nurses who are patient centered, who think critically, and are able to recognize the needs of patients” (NMNEC, 2020, p. 1). These broad concepts that NMNEC successfully applied to the state-wide nursing education system were then narrowed down and applied to the only Level 1 Trauma Operating Room in the State of New Mexico by the UBEs with support from the UNMH Main OR leadership, staff, and providers.

The NMNEC Concepts and Required Exemplars were the starting place of the CRNTP; running parallel to pedagogy research (NMNEC, 2019). Circulating RN Trainees are adult learners with lives, families, and a wealth of experience that needed to be taken into consideration during program development (Bankert & Kozel, 2005). The UBEs believed that existing OR RN training programs were written with a previous generation of learners in mind. From interviews with the Operating Room staff and previous OR training program graduates, it was identified that there was a training/learning gap with the previous training programs employed at UNMH. A generational learning style shift had to be considered if the millennial and upcoming Generation Z learners were to be successfully recruited, trained, and retained as OR circulating nurses at UNMH. Modern learners want to have some control; they want to be heard and the want their input to be valued (Richmond & Issa, REDCap, 2019).

The collective body of work written by the Main OR UBEs is the Circulating RN Training Program, which is a multi-faceted transformational learning and training program (Richmond & Issa, 2019). Above all it is an original and unique application of the home-grown NMNEC concept-based curriculum which has become the pride of the UNMH Surgical Services Department by accomplishing the goal of transforming our greatest resource, people with raw nursing talent, into OR nurses. This paradigm shift in the training structure can be summarized by defining a CRNTP nurse’s primary purpose as being a patient advocate in the moment when most patients cannot advocate for themselves; during surgery. This is accomplished by focusing on the interconnected concept objectives of: advocacy, critical thinking, situational awareness, problem solving, time management, and resource management. These concepts are taught through a variety of tools and resources, including some through the UNMH Clinical Education Department.

The CRNTP is an adaptive framework unique to each learner. It is a 21-28 week program tailored to the learning style and pace of individual students, taking into account their previous experience and background. It is divided into sections which focus on different knowledge sets and outcomes. Built into the structure are rotations through all of the departments and specialties within Surgical Services in order to understand that the OR does not exist without its’ unique ancillary departments. Classroom learning is still a vital component, but has been

condensed into two parts which focus on the surgical environment and circulating nurse skill sets.

Two separate mentorships occur during the CRNTP timeline. The first is a foundational preceptorship which focuses on becoming comfortable in the OR environment, before rotating through each surgical specialty. Each specialty rotation narrows down learning to the unique aspects of those types of surgeries; the equipment and instrumentation associated with that specific surgical specialty. The second mentorship begins after completion of the surgical specialty rotations with a mentor of the learners' choosing, in order to consolidate their nursing practice before they begin to circulate surgical cases independently. This mentor eventually matriculates into the CRNTP's long-term mentor with the intent of weaving a safety net of resources for each new RN. The lengths of these mentorships are adaptive to the learner. For example, a Circulating RN Trainee with no previous OR exposure or a methodical learning style may need to utilize the entirety of the mentorship segments to achieve program success.

A common alternate track is the CRNTP learner who has graduated from nursing school with a previous career as a Certified Surgical Technologist (CST) in the OR environment. This unique trainee needs only minimal guidance in their transition from sterile to unsterile role within the surgical setting; this type of trainee will often excel with a shorter program due to their previous knowledge base and socialization into the environment.

No OR training program can teach a nurse how to be an expert in every surgical specialty upon completion. A concept-based training program can teach a RN new to the OR environment and/or role how to advocate for their patient, have the knowledge to get any surgery safely started, identify their situational knowledge gaps, then identify and utilize their resource safety net in order to fill their own knowledge gaps as necessary. In the concept-based framework, specialty knowledge can be built on a solid foundation that applies to all surgical specialties. The focus is on surgical similarities initially, then it transitions into the nuance of differences.

Socialization of new nurses in the OR helps build peer-groups, self-esteem, and continues weaving a safety net of resources. At the beginning and upon completion, the educators and OR leadership arrange a lunch, inviting current CRNTP learners, educators, and leaders within the ORs. These gatherings serve two purposes during the training cycle. New arrivals are celebrated as introductions are made for the incoming CRNTP cohort. Concurrently, CRNTP graduations are celebrated and milestones are acknowledged with a handoff of knowledge between cohorts. Slowly, a community is built. Up to this point, the focus has been on the success of the CRNTP mentee. Next steps include support, recognition, and continued training for preceptors and mentors to further strengthen both the training program and the learning process.

Through recruiting surgical service coordinators and senior staff to add their input in writing the learning outcomes that accompany each section and surgical specialty of the CRNTP, the program has truly been a collaborative effort. The Main OR team has strengthened and the feeling of community within the department has grown as the CRNTP has transitioned from UBE driven to staff supported. The OR staff was educated on the new program and all of the

resources available to the learners which were also made available to the Main OR staff. Communication is a focus: both communication skills and the transitional communication between preceptors, educators, and learners. Critical reflection on personal development and learning from clinical experiences characterizes the ongoing growth of the CRNTP learner, who can expect to debrief with the UBEs every one to two weeks during the program and then every four to six weeks after program completion in order to provide a continuity of learning and support for the nurse new to the OR environment (Bankert et al., 2005). Learning in the OR environment can be viewed through a time versus failure equation: the learner performs a task enough times to master it, or they fail at the task once and master it immediately. Supportive mentors and preceptors along with engaged UBEs greatly assist each CRNTP learner to grow in the clinical setting while providing a safe environment for patient care.

The CRNTP is not solely focused on the learners and educators. It was identified early on that OR culture was critical to the CRNTP's success and the ability of the Main OR to retain the RNs they trained. A committee was formed to address the OR culture, and engage OR staff in the process of culture reform. It does not matter how well a new nurse is trained if the culture is not supportive. Retention will remain low and the negative cycle will continue which affects overall recruitment and retention efforts. In addition to revamping the training program for OR circulating nurses, the Main OR UBEs recognized that the long-term effects of training nurses in a new way would only have limited success if those nurses were then placed in an environment that embodied the previous OR culture. In order to obtain a different result, the culture had to be revised, and therefore a committee solely focuses on culture change was initiated.

The culture committee is a multi-disciplinary group of staff and providers focused on bringing together staff in various roles to promote a culture change in the Main OR at UNMH. What started as a social committee quickly transitioned into a community service project which brought the OR staff together over the holidays by supporting two local families over the entire Thanksgiving and Christmas season of 2019. A sense of purpose and unity was created which has transitioned into the current project of hosting an off-site holiday party to give the staff a positive outlet in which to appreciate and celebrate each other.

The culture shift has also been brought about through consistent weekly recognitions and public acknowledgements of the incredible things that the staff and providers have started doing for each other. It seems that the staff were yearning for structure and recognition for the amazing work that they accomplish every day. There has been a revived sense of purpose and pride as the experienced staff see their own accomplishments and mentoring efforts reflected in the success stories surrounding the new CRNTP cohorts of learners. The current OR staff seem to be inspired to perform with renewed intensity when surrounded by their successful preceptees and mentees. The Main OR is transitioning into a desirable place to work and rewarding environment to contribute to on a daily basis. The CRNTP goals and program outcomes are being achieved, as evidenced by the declining turnover rates, increasing staff retention rates, and positive patient outcomes.

When analyzing the data set from January of 2016 to December of 2018 with the previous curricula and culture, the picture was bleak. The Main OR at UNMH was struggling to recruit

staff, retain staff, and morale was on the decline. Surgeons and staff were continuously frustrated with the inconsistencies caused by RN attrition rates. Since January 2020, 100% of the Circulating RN Trainees who started the program have either completed or are still in progress. The Main OR has lost only minimal staff and all attrition was due to natural life events, not as a result of job satisfaction. Retention in the Main OR has improved from 44% with the previous curricula, to 86% with the CRNTP curricula. Most notable, are the growing feelings of pride in being part of the UNMH Main OR community. The culture change is becoming palpable.

CONCLUSION

The Main Operating Room at UNMH has grown immensely since data collection began in 2016. Incorporating a mentoring focus into the CRNTP has been so successful that the program has been expanded to include the Surgical Technologist Training Program (STTP) which applies the same content-based learning structure and mentor pairings to the scrub techs in the OR. There are even cross role shadowing opportunities with the intent of creating role empathy and team building. In an unexpected development, word has gotten out and the experienced staff who previously left are beginning to return to the Main OR at UNMH. These returning staff members have reported being pleasantly surprised with the new levels of positivity and proactive culture that they have experienced upon returning. The CRNTP is working. Newly trained OR nurses and surgical techs feel prepared to rise to the challenges of the high surgical acuity and unpredictable patient population treated in the Main OR at UNMH; the only Level 1 Trauma Center in the State of New Mexico. Mentors have been woven into the safety net of resources that each new learner weaves during their CRNTP and STTP timelines, and those safety nets represent how strong the Surgical Services Department has become at UNMH.

REFERENCES

- Bankert, E.G., & Kozel, V.V. (2005). Transforming pedagogy in nursing education: A caring learning environment for adult students. *Nursing Education Perspectives* (National League for Nursing), 26(4), 227–229.
- Conner, R., Burlingame, B., Davidson, J., Denholm, B., Fearson, M., Giarrizoo-Wilson, S., ...Wood, A. (2018). Guidelines for Perioperative Practice. Denver, CO: AORN.
- Dunn, D. (2014). Smart Management. Where, oh where, are the OR nurses: Retention. *OR Nurse*, 8(5), 8–11. <https://doi.org/10.1097/01.ORN.0000453335.45094.5b>
- Edmonson, C., & Zelonka, C. (2019). Our own worst enemies: The nurse bullying epidemic. *Nursing Administration Quarterly*, 43(3), 274–279. <https://doi.org/10.1097/NAQ.0000000000000353>
- Giddens, J.F., & Brady, D.P. (2007). Rescuing nursing education from content saturation: the case for a concept-based curriculum. *Journal of Nursing Education*, 46(2), 65–69.
- Jakubik, L. D. (2016). Leadership Series: “How To” for mentoring. Part 1: An overview of mentoring practices and mentoring benefits. *Pediatric Nursing*, 42(1), 37–38.
- Ke, Y. - T., Kuo, C. - C., & Hung, C. - H. (2017). The effects of nursing preceptorship on new nurses’ competence, professional socialization, job satisfaction and retention: A systematic review. *Journal of Advanced Nursing* (John Wiley & Sons, Inc.), 73(10), 2296–2305. <https://doi.org/10.1111/jan.13317>
- Littlejohn, W. (2019). *Is the Honeymoon Over so Quick? Exploring Why New Nurses are leaving the Profession*. Presentation at: The Resilient Nurse: A Holistic Compass to Navigate Your 2019 Journey.
- Martin, K. K. (2011). Meeting the challenge of perioperative education. *AORN Journal*, 94(4), 377–384. <https://doi.org/10.1016/j.aorn.2011.01.014>
- Messina, B.A.M., Ianniciello, J.M., Escallier, L.A. (2011). Opening the doors to the OR: Providing students with perioperative clinical experiences. *AORN Journal*. 2011;94(2):180-188. doi:10.1016/j.aorn.2010.12.025.
- Meyer, R., Van Schalkwyk, S. C., & Prakaschandra, R. (2016). The operating room as a clinical learning environment: An exploratory study. *Nurse Education in Practice*, 18, 60–72. <https://doi.org/10.1016/j.nepr.2016.03.005>
- Mirbagher Ajorpaz, N., Zagheri Tafreshi, M., Mohtashami, J., Zayeri, F., & Rahemi, Z. (2016). The effect of mentoring on clinical perioperative competence in operating room nursing students. *Journal of Clinical Nursing* (John Wiley & Sons, Inc.), 25(9–10), 1319–1325. <https://doi.org/10.1111/jocn.13205>

- Nursing Solutions, Incorporated. (2020). 2020 NSI National healthcare retention & RN staffing report. East Petersburg, PA.
- New Mexico Nursing Education Consortium [NMNEC]. (2019). NMNEC concepts and required exemplars. <https://www.nmneec.org/curriculum/concepts/>
- NMNEC (2020). Creating opportunities for nursing education. <https://www.nmneec.org/wp-content/uploads/2020/02/Creating-Opportunities-for-Nsg-Ed.02.24.2020.pdf>
- Onboarding of staff should not be a haphazard, rushed event: During the onboarding process, identify good mentors who could help future new employees. (2018). *Same-Day Surgery*, 42(2), 18–19.
- Richmond, J., & Issa, C. (2019). Circulating RN Training Program (CRNTP). The University of New Mexico Hospitals: Albuquerque, NM.
- Richmond, J., & Issa, C. (2019). Research Electronic Data Capture (REDCap) – PeriOp completion survey. The University of New Mexico Hospitals: Albuquerque, NM.
- Richmond, J., & Issa, C. (2020). Research Electronic Data Capture (REDCap) – PeriOp completion survey. The University of New Mexico Hospitals: Albuquerque, NM.
- Rhoda, M., Van Schalkwyk, S. C., & Prakaschandra, R. (2016). The operating room as a clinical learning environment: An exploratory study. *Nursing Education in Practice* 18(2016), 60-72.
- Rothrock, J. (2015). *Alexander's: Care of the Patient in Surgery*. St. Louis, MS: Elsevier Mosby.
- Sandhusen AE, Rusynko BS, & Wethington NP. (2004). Return on investment for a perioperative nurse fellowship. *AORN Journal*, 80(1), 73–81. [https://doi.org/10.1016/S0001-2092\(06\)60845-4](https://doi.org/10.1016/S0001-2092(06)60845-4)
- Turnover rates plummet with Patient Care Intern training program. (2013). *OR Manager*, 29(9), 30–31.
- Topa, G., Guglielmi, D., & Depolo, M. (2014). Mentoring and group identification as antecedents of satisfaction and health among nurses: What role do bullying experiences play? *Nurse Education Today*, 34(4), 507–512. <https://doi.org/10.1016/j.nedt.2013.07.006>
- Trossman, S. (2013). Better prepared workforce, better retention. *American Nurse*, 45(4), 1–12.
- Vacek, J., & Liesveld, J. (2019) Teaching concepts to nursing students using model case studies, the Venn Diagram, and questioning strategies. *Nursing Education Perspectives*, <https://doi.org/10.1097/01.NEP.0000000000000514>
- Vortman, R., Bergren, M. D., Baur, K., & Floyd, V. (2019). Nurse retention in the Operating Room after Perioperative Core Curriculum completion. *ORNAC Journal*, 37(3), 13–27.