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Registered Nurse Prescribing in Ontario: Learners' Perspective

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In response to evolving health care demands and the increasing need for accessible patient care, eight Canadian provinces (Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, Quebec, and Saskatchewan) have expanded the scope of practice for registered nurses (RNs) to authorize RN prescribing. The scope of practice of RN prescribers varies by province and employer needs; however, all listed provinces have expanded scopes that include diagnosing and prescribing specific medications. Under specific conditions, the British Columbia College of Nurses & Midwives (2024) allows certified practice RNs to prescribe certain controlled substances. Some provincial nursing regulatory bodies sanction ordering a limited number of laboratory and diagnostic tests (British Columbia College of Nurses & Midwives, 2024; College of Registered Nurses of Alberta, 2022; College of Registered Nurses of Manitoba, 2024; College of Registered Nurses of Newfoundland & Labrador, 2022; Nova Scotia College of Nursing, n.d.) and, in addition, performing minor surgical and invasive procedures (College of Registered Nurses of Saskatchewan, 2022).

Ontario is the latest province to approve RN prescribing authority for medications approved by the Ontario Ministry of Health and Long-Term Care (2023) and authorized by the College of Nurses of Ontario (CNO) (2023). This expansion is a significant step towards advancing health care delivery by optimizing the use of resources, improving access to care, and enhancing safe patient-centred care (Pearson et al., 2020); it opens up new possibilities for health care delivery in Ontario. RNs can prescribe medications only in practice settings or facilities in which RN prescribing is authorized by law and permitted by the employer; the *Hospital Act* prohibits RNs from prescribing in hospital settings (CNO, n.d.-b).

To become an authorized prescriber in Ontario, RNs must complete one of the four available CNO Council–approved RN prescribing education programs (CNO, n.d.-a). Upon course completion, the school verifies with the CNO that the RN has met the requirements for prescribing; the CNO updates the public register, noting that the RN is authorized to prescribe. As RN prescribing is new to Ontario, it is essential to assess the effectiveness of the educational programs that are preparing nurses for this new role. Thus, we conducted a quality improvement project (QIP) to gain learners' perspectives on one of Ontario's CNO-approved RN prescribing programs.

Background

Ontario University Consortium RN Prescribing Education Program

The Ontario University Consortium RN Prescribing Education Program is a collaborative effort of nine universities (Lakehead, Laurentian, McMaster, Ottawa, Queen's, Toronto Metropolitan, Western, Windsor, and York). Experts in nurse practitioner (NP) content from each university's primary health care NP program collaboratively developed the program's pedagogical approach and content modules; this 12-week program is offered through one site.

The program consists of educational modules reflecting the regulated and legal requirements of this expanded scope of practice. The following modules are covered: roles and responsibilities, general principles of pharmacology, over-the-counter medications, topical wound care, immunization/ anaphylaxis, travel health, contraception, and smoking cessation. Each module contains at least one slideshow presentation and interactive case study. The program instructors provide additional content on subjective assessments, prescription writing in Ontario, and government drug benefit programs. Weekly question-and-answer sessions with interactive case studies allow learners to apply program content. A

link to a survey at the end of each module provides the course instructors with feedback regarding the content of each module.

Learners in this program receive asynchronous and synchronous online learning throughout the course. Asynchronous learning allows learners to work through modules, quizzes, and case studies at their own pace. Synchronous learning is provided through weekly online meetings, allowing instructor and learner interaction through interactive case studies and question-and-answer periods. To complete the program, learners must pass a final exam, achieving a minimum of 70%; after passing the exam, they complete a virtual clinical experience that is reflective of all the modules in the program.

Benefits of RN Prescribing

Granting RNs the authority to prescribe medications allows patients to receive timely and efficient medication management while reducing lengthy wait times often associated with physician appointments (Pearson et al., 2020). Nurse prescribers may offer more detailed consultations and post-appointment medication support, providing a personalized, holistic treatment plan (Sunzi et al., 2024). Likewise, patients express higher satisfaction with prescriptions from nurses as they believe nurses are more empathetic and available for their needs than physicians (Short et al., 2024; Zhou et al., 2023). RNs with prescribing authority can use their clinical judgement without waiting for physician approval, leading to quicker and more effective care (Haririan et al., 2022; Wu et al., 2025). In addition, granting nurses the authority to prescribe medications may attract more people to the profession and improve retention rates (Fox et al., 2023).

Gaps of RN Prescribing Education

While RNs have made significant progress in expanding their scope of practice, gaps and inconsistencies exist. Educational deficiencies, particularly in pharmacology, represent a noticeable gap in implementing RN prescribing (Seck et al., 2024; Taasen et al., 2024). In addition, many RNs have less formal pharmacology training than physicians and advanced practice nurses (Zhou et al., 2023). Examining programs and gaining the learners' perspective before making changes is essential. Therefore, this QIP aims to examine the University Consortium Program's effectiveness in increasing the confidence of RN prescribers and their familiarity with the new CNO prescribing standards. Learners' perspectives were obtained through pre- and post-course survey responses via Qualtrics XM.

Methods

Ethics

This research was a QIP used to improve the Ontario University Consortium RN Prescribing Education Program; after discussion with the research ethics board (REB), the QIP was deemed to be program evaluation and exempt from REB review.

Design

We used a pre-course survey and a post-course survey to gather demographic information and obtain learners' perspectives regarding their motivation for taking the program and their employment plans for an expanded scope of practice. In addition, the survey provided pre- and post-course data on the learners' confidence in their ability to prescribe safely and their familiarity with the new CNO prescribing standards for RNs.

Population

We distributed a survey link to all 250 RN learners enrolled in the Ontario University Consortium RN Prescribing Education Program to access the Qualtrics platform. The survey employed bot detection and measures to prevent multiple completions by the same participant. No compensation was provided, and completion was voluntary.

Data Collection: Instrument

Qualtrics XM, a password-protected software platform, was used to create the pre- and post-course surveys. Demographic questions included age, highest level of academic achievement, primary clinical practice area, and years of experience working as an RN. Scale item questions reflected the practice standards and the medications authorized by the CNO to determine participants' knowledge regarding the scope of practice for RN prescribers. Additionally, Likert-scale items included preparedness to practise, motivation for taking the course, preparedness for the new role, and confidence in their ability to safely prescribe medications in their scope of practice. Survey questions were derived directly from the CNO regulated and legal requirements of the expanded scope of practice and the medications authorized to RN prescribers (CNO, 2023).

A link was provided on the course learning platform and electing to complete the survey implied consent. Participants could withdraw from the survey at any point by closing their internet browser. The survey used the anonymous setting in Qualtrics, and participants' IP addresses were not collected; there was no method of linking each survey back to its participants. The survey also employed bot detection and measures to prevent multiple completions by the same participant.

Response bias was mitigated by a) having neutral questions that did not demonstrate a preference for a particular answer, b) having scale answers instead of "yes" or "no," c) having content experts review the questions for clarity and conciseness, and d) presenting one question at a time.

Research assistants imported the data into IBM SPSS Statistics version 29. Survey results were stored on the password-protected Qualtrics website and in a password-protected file (SPSS) on a password-protected computer. Data were accessible only to the researchers and an external statistician. De-identified data were emailed to a statistician through the primary researcher's University of Windsor email address. Cronbach's alpha of 0.796 demonstrated the internal consistency of the survey scale items. An acceptable level of Cronbach's alpha is equal to or greater than 0.7 (Bannon, 2013).

Data Analyses

We performed a power analysis using G*Power 3. Using a medium effect size of 0.3, a 95% confidence interval, and a power of 80% determined the required sample size to be 122 participants. Before analysis, we examined the data set for missingness, normality, and assumptions. SPSS Statistics version 29 was used to analyze the data set. Frequency and central tendency measures were reported for participant demographics; Likert-scale items were analyzed based on the options of 1 = not at all familiar, 2 = somewhat familiar, and 3 = very familiar, reflecting knowledge related to the scope of practice for RN prescribers. Participants selected their confidence level (1 to 100) to practise within the RN prescriber's scope of practice. We computed composite familiarity and confidence scores for pre- and post-course surveys by summing the mean scores of the familiarity scale items and confidence continuous variable scores for both surveys. We conducted Mann–Whitney U non-parametric tests to determine any statistical difference between the median of the pre- and post-course composite scores (*familiarity scores*

and *confidence level*). Statistical inferences were based on a two-tailed alpha of 0.05 or a 95% confidence interval.

Results

A total of 194 pre-course survey Qualtrics questionnaires (78% response rate) and 136 post-course surveys (78% response rate) were completed. The course had an overall 30% attrition rate (75 students). Possible reasons for the course attrition include a learner's dropping the course, non-completion of required coursework, or being unsuccessful on the final exam; each circumstance resulted in the learner being removed from the course with no access to complete the post-course survey. The surveys were anonymous, making it impossible to determine the specific pre- and post-course survey responses per participant. No cases were removed due to a > 80% lack of responses.

Respondents' ages in the pre-course survey ranged from 22 to 75 (M = 38.6; SD = 10.94), while post-course survey respondents' ages ranged from 22 to 69 (M = 40.0; SD = 10.4). Years of experience as an RN ranged from 0 to 49, with most participants in both surveys having 0 to 6 years of experience. The average RN years of experience for pre-course and post-course survey respondents were 11.9 and 13, respectively. Most participants' highest level of education was a bachelor's degree in nursing. Most participants reported that their primary clinical setting was an acute care or post–acute care hospital (see Table 1).

Table 1

Demographics of Participants

	Pre-course survey (n = 194)		**Post-course survey (n = 136)**	
Age	***n***	**%**	***n***	**%**
20–27	30	15.5	14	10.3
28–35	**55**	**28.4**	37	27.2
36–43	51	26.3	**39**	**28.7**
44–51	26	13.4	25	18.4
52–59	19	9.8	14	10.3
60+	9	4.6	6	4.4
Missing	4	2.1	1	0.7
Years of registered nurse experience	***n***	**%**	***n***	**%**
0–6	**76**	**39.2**	**49**	**36.0**
7–14	56	28.9	38	27.9
15–22	33	17.0	27	19.9
23–30	17	8.8	9	6.6
31+	12	6.2	13	9.6

Primary clinical practice setting	***n***	**%**	***n***	**%**
Acute/post-acute care hospital	**58**	**29.9**	**43**	**31.6**
Community care access centre/home Care/community nurse	12	6.2	15	11.0
Long-term care/retirement home	6	3.1	7	5.1
Community primary care	46	23.7	28	20.6
Public health	34	17.5	22	16.2
Other	38	19.6	21	15.4
Highest level of education	***n***	**%**	***n***	**%**
Bachelor's degree (BN, BScN)	**160**	**82.5**	**103**	**75.7**
Master's degree (MN, MScN)	31	16.0	30	22.1
Doctorate (PhD)	3	1.5	3	2.2

Note. Highest responses in each category are bolded; other = rehabilitation, mental health, corrections, education, sleep clinic, independent practice, hospice, pharmaceutical, administration, injection nurse, occupational nursing, and parish nursing; community primary care = NP-led clinics, RN-led clinics, community health centres, family health teams, Indigenous health centres, physician offices, primary care clinics, and community health services; BN = bachelor of nursing; BScN = bachelor of science in nursing; MN = master of nursing; MScN = master of science in nursing.

Most respondents were not encouraged by their employers to complete the course, and participants indicated "maybe" when asked whether they would work as an RN prescriber in their current workplace. The top motivators for taking the course were career advancement and personal goals. In the pre- and post-course surveys, participants rated their confidence above 90% (0 to 100) in their ability to prescribe within the RN scope of practice.

Participants reported on their familiarity with regulatory standards of practice. More respondents reported being somewhat familiar (pre-course survey) and very familiar (post-course survey) with the list of authorized medications for RN prescribers and the CNO RN Prescribing Practice Standard. They reported being very familiar with the CNO Medication Practice Standard and the CNO RN Prescribing Scope of Practice Standard in both surveys (see Table 2).

Table 2

Confidence and Familiarity With RN Prescribing

	Pre-course survey (*n* = 194)		**Post-course survey (*n* = 136)**	
Confidence to prescribe medications as an RN prescriber	***n***	**%**	***n***	**%**
Below 49	27	13.9	5	3.7

50–59	14	7.2	1	0.7
60–69	13	6.7	5	3.7
70–79	24	12.4	22	16.2
80–89	32	16.5	46	33.8
90+	**84**	**43.3**	**57**	**41.9**
Familiarity with list of authorized medications for RN prescribing	***n***	**%**	***n***	**%**
Not at all familiar	11	5.7	0	0
Somewhat familiar	**137**	**70.6**	34	25
Very familiar	46	23.7	**102**	**75**
Familiarity with CNO Medication Practice Standard	***n***	**%**	***n***	**%**
Not at all familiar	8	4.1	1	0.7
Somewhat familiar	82	42.3	19	14
Very familiar	**104**	**53.6**	**116**	**85.3**
Familiarity with CNO RN Prescribing Practice Standard	***n***	**%**	***n***	**%**
Not at all familiar	23	11.9	0	0
Somewhat familiar	**129**	**66.5**	16	11.8
Very familiar	42	21.6	**120**	**88.2**
Familiarity with CNO RN Prescribing Scope of Practice Standard	***n***	**%**	***n***	**%**
Not at all familiar	2	1.0	0	0
Somewhat familiar	52	26.8	12	8.8
Very familiar	**140**	**72.2**	**124**	**91.2**

Note. Highest responses in each category are bolded; RN = registered nurse; CNO = College of Nurses of Ontario.

Composite Score: Familiarity Score

For both surveys, a composite familiarity score was computed by summing the mean scores of the familiarity Likert-scale items reflecting participants' knowledge regarding the scope of practice for RN prescribers. The distribution of the continuous variables familiarity score for both surveys was non-normal, as evidenced by Shapiro-Wilk ($p < 0.001$) and the ratio of skewness and kurtosis to the standard error of –2.15 and 0.63 (pre-course survey) and –9.68 and 7.52 (post-course survey). There was no change in the normality by removing outliers. Results demonstrated an increase in the mean and median between the pre- and post-course survey familiarity scores ($M = 2.37$; $Mdn = 2.50$; $SD = 0.38$; and $M = 2.85$; $Mdn = 3.0$; $SD = 0.284$).

We conducted Mann–Whitney U non-parametric tests to determine any statistical difference between the median of the pre- and post-course composite familiarity scores. Distribution of the familiarity scores for pre- and post-course surveys were similar, as assessed by visual inspection. The median familiarity score for pre-course (2.50) and post-course (3.0) surveys was statistically significant (U = 4141.5, z = –10.93, p < 0.001).

Composite Score: Confidence Score

For both surveys, a composite confidence score was computed by summing the mean scores of the confidence scale items, reflecting participants' confidence in their ability to prescribe safely within the scope of practice of RN prescribing. The distribution of the continuous variables confidence level for both surveys was non-normal, as evidenced by Shapiro-Wilk (p < 0.001) and the ratio of skewness and kurtosis to the standard error of –6.09 and 0.80 (pre-course survey) and –7.84 and 10.14 (post-course survey). There was no change in the normality by removing outliers. Results demonstrated that the confidence levels increased between the pre- and post-course surveys (M = 75.6; Mdn = 80.5; SD = 24.41) (pre-course range 1 to 100) and (M = 83.6; Mdn = 85.0; SD = 14.39) (post-course range 25 to 100), respectively.

We conducted Mann–Whitney U non-parametric tests to determine any statistical difference between the median of the pre- and post-course confidence composite scores. The distribution of confidence for pre- and post-course surveys was similar, as assessed by visual inspection. The median confidence score for pre-course (80.5) and post-course (85.0) surveys was not statistically significant (U = 11629, z = –1.843, p = 0.065).

Discussion

This QIP examined participant responses to pre- and post-course surveys regarding their experience with the Ontario University Consortium RN Prescribing Education Program. Between the pre- and post-course surveys, participants reported increased confidence regarding their ability to prescribe safely within the RN prescribing scope of practice and an increased knowledge regarding the scope of practice for RN prescribers. These findings suggest that the course effectively improves specific competencies linked to prescribing practices, including knowledge of the list of authorized medications an RN can prescribe and the accompanying CNO standards. An area for further quality improvement within the course curriculum could be examining components of the educational experience that were most helpful to their learning.

Most participants reported that their primary clinical setting was an acute care or post–acute care hospital. Therefore, it was not surprising that they were not encouraged by their employers to complete the course or that they indicated "maybe" when asked about working in their new role in their current workplace. According to the Ontario *Public Hospitals Act* (1990), physicians, dentists, midwives, and NPs (RN extended class) are permitted to "attend a patient in the hospital" (regulation 965. 1(1)).

The official designation and practice settings for RNs with prescribing authority vary across Canada. Nova Scotia College of Nursing (n.d.) sanctions RNs Authorized to Prescribe (RN-APs) only in areas and specific client conditions endorsed by the employer. In Manitoba, an RN (Authorized Prescriber) or RN(AP) can practise in travel health, reproductive health, and diabetes health (College of Registered Nurses of Manitoba, 2024). Similarly, the British Columbia College of Nurses & Midwives (2024) allows RNs (Certified) to work in practice designations such as reproductive health, remote practice, RN first call, and opioid use disorder. The College of Registered Nurses of Newfoundland & Labrador (2022) authorizes RN prescribers to work in rural, remote, or community settings based on specific health needs (e.g., travel), care required (e.g., wound care), or medical diagnosis grouping (e.g., diabetes). Likewise, in

Alberta, RN prescribing is allowed in specific clinical practice areas based on the type of care (e.g., wound care), practice setting (e.g., emergency department), specific issue (e.g., sexually transmitted infection), or medical diagnostic grouping (e.g., diabetes) (College of Registered Nurses of Alberta, 2022). The College of Registered Nurses of Saskatchewan (2022) allows the RN with Additional Authorized Practice (AAP) to treat limited medical conditions in a setting supported by the employer, who ensures access to a physician or NP for collaboration. In Ontario, the scope of practice is limited for RN prescribers compared to other provinces. Using RN prescribers to their full potential would require an amendment to the Ontario *Public Hospitals Act* and significant buy-in from employers. Providing RN prescribers with the ability to practise in hospital would open up additional settings and provide access similar to other provinces.

The top motivators for taking the course were career advancement and personal goals, suggesting that students may have taken the course with aspirations to move out of the acute care sector into settings that permit RN prescribing now that their registration allows them to do so. The implementation of RN prescribing in primary health care and other community care settings will be an important indicator for continuing student enrolment in the course.

Even though the RN prescribing education course demonstrated a 30% attrition rate, this rate is comparable to undergraduate nursing attrition rates globally, which range from 10% to 45% (Craig, 2014). A potential factor in this study's attrition rate could be that the program was fully funded for students regardless of completion, meaning that if students elected not to complete the course or were unsuccessful, they were not required to pay back the tuition. The reasons for attrition were discussed in the results section. However, further studies need to explore individual participants' perceptions by conducting exit interviews. Addressing participants' perspectives regarding attrition would provide valuable information to tailor future courses.

Most participants were between 28 and 34 years old, yet the program completion rate of older, more experienced RNs was higher than that of younger, less experienced RNs. These results are consistent with the literature; more mature students are returning to school to upgrade their education (Craig, 2014). Craig (2014) also noted that mature students are more successful as they have developed coping skills that assist them with balancing academic and life demands. These findings indicate a need for tailored support and retention initiatives for learners with less life and work experience; findings could help inform admission criteria for future applicants.

Implications for Research

This QIP provides opportunities for future research. As previously stated, a well-designed, multi-site research project could explore reasons for attrition to tailor admission criteria and promote program retention. Also, examining newly established RN prescribing roles can provide essential information to aid employers and policy makers in making decisions about facilitators, barriers, and strategies to safely implement this role. In addition, a follow-up mixed-methods study to examine the RN prescriber role in Ontario is in progress. Additional studies that evaluate long-term retention and application of prescribing skills would provide information to help solidify the role of an RN prescriber.

Implications for Nursing Practice

The implementation of RN prescribing in Ontario represents a pivotal step forward in health care delivery, showing clear strengths in improving access to care, prompting patient-centred treatments, and improving nurses' job satisfaction. Nevertheless, the successful implementation of nurse prescribing requires supportive policies in the workplace and at the provincial and federal levels and precise

legislation to support RN prescribing. Addressing these issues calls for a comprehensive strategy that includes ongoing education and a robust legislative framework to enable the safe and effective practice of RN prescribing in Ontario. Likewise, it is vital to recognize the additional prescribing responsibilities through financial incentives, or RNs will be reluctant to take on prescribing roles (Earle et al., 2011).

Limitations

The results of this study should be interpreted in the context of several limitations. First, this project was completed at a single site for one of the four programs in Ontario, limiting the generalizability outside of the site and Ontario. Collecting data through multiple sites and programs may produce different results, and a comparative analysis involving other provinces would provide more generalizable conclusions. Second, the survey was administered immediately after completion of the course, which could produce variability in findings with longer time lapses among students completing the self-directed online program. Third, given the 30% attrition rate of the course, researchers did not complete an exit interview with learners who decided to drop the course. Exploring their reasons for dropping the course would help design retention initiatives in the future. Fourth, given the nature of the self-report and its susceptibility to response bias, whether these subjective statements reflect learners' objective practice is unclear. Finally, pre- and post-course surveys were used to assess learners' perspectives, presenting limitations in capturing longitudinal outcomes.

Conclusion

The introduction of RN prescribing in Ontario significantly advances health care service delivery. The University Consortium's inaugural RN prescribing program reflected the regulated and legal requirements of this expanded scope of practice. It incorporated eight modules with weekly question-and-answer sessions and interactive case studies delivered via synchronous and asynchronous learning modalities. Upon completing the program, participants felt more confident in their ability to prescribe safely within the RN prescribing scope and gained a better understanding of the role and responsibilities of RN prescribers. Even with participant attrition throughout the program, the launch of this RN prescribing course signifies a major step towards improved access to care, patient-centred treatments, and enhanced potential for nurses' job satisfaction.

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