Multi-Centre Implementation of a Nursing Competency Framework at a Provincial Scale: A Qualitative Description of Facilitators and Barriers

Running title: Nursing Competency Framework Implementation

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ABSTRACT

Rationale: Nurses are responsible for engaging in continuing professional development throughout their careers. This implies that they use tools such as competency frameworks to assess their level of development, identify their learning needs, and plan actions to achieve their learning goals. Although multiple competency frameworks and guidelines for their development have been proposed, the literature on their implementation in clinical settings is sparser. If the complexity of practice creates a need for context-sensitive competency frameworks, their implementation may also be subject to various facilitators and barriers.

Aims and objectives: To document the facilitators and barriers to implementing a nursing competency framework on a provincial scale.

Methods: This multi-centre study was part of a provincial project to implement a nursing competency framework in Quebec, Canada, using a three-step process based on evidence from implementation science. Nurses' participation consisted in the self-assessment of their competencies using the framework. For this qualitative descriptive study, 58 stakeholders from 12 organizations involved in the first wave of implementation participated in group interviews to discuss their experience with the implementation process and their perceptions of facilitators and barriers. Data were subjected to thematic analysis.

Results: Analysis of the data yielded five themes: finding the 'right unit' despite an unfavorable context; taking and protecting time for self-assessment; creating value around competency assessment; bringing the project as close to the nurses as possible; making the framework accessible.

Conclusion: This study was one of the first to document the large-scale, multi-site implementation of a nursing competency framework in clinical settings. This project represented a unique challenge because it involved two crucial changes: adopting a competency-based

approach focused on educational outcomes and accountability to the public and valorizing a learning culture where nurses become active stakeholders in their continuing professional development.

Keywords: competency-based education, competency framework, nursing, continuing professional development, lifelong learning, self-assessment, implementation

INTRODUCTION

With the current emphasis on quality and accountability in healthcare, nurses are responsible for engaging in continuing professional development (CPD) to maintain and enhance competence throughout their careers. [1] In competency-based CPD, professionals are considered lifelong learners who commit to ongoing reflection on their practice beyond initial education. [2] This implies that they use tools to assess their level of development, identify their learning needs, and plan actions to achieve their CPD goals. [1,2]

Competency frameworks represent a viable and relevant option to support competency-based CPD. Competency frameworks—sometimes called professional standards or standards of practice—define the competencies required for a particular profession. [3] They are essential tools to guide education and management in clinical and educational settings. [4] They provide vocabulary and conceptual guidance for those who wish to self-assess their development and reflect on their practice from a perspective of self-regulation and lifelong learning. [2]

Competency frameworks for nursing and healthcare have proliferated in recent years. A scoping review [5] found 65 studies on the development of nursing competency frameworks published before 2018. To explain these numbers, the authors argue that such frameworks must capture the complexity of practice, which emerges from "regional or contextual variability, unique practice patterns, the role and attributes of individuals and individuals within teams, […] shifts in patient demographics or societal expectations, the role of technology, and changes in organizational structures" (p. 914). Furthermore, differing conceptions of clinical practice and the meaning and components of competence sustain the need for local, context-sensitive, and clearly articulated representations of nursing competencies.

Since 2012, a competency framework specific to nursing practice in the province of Quebec, Canada, has been developed and validated through ongoing collaboration between researchers

and clinicians. [6] The latest version of the framework, whose content was validated through a Delphi process with 42 nurses with diverse roles and expertise, includes seven competencies related to clinical judgment, humanism, continuity of care, scientific rigor, clinical leadership, collaboration, and professional development. [7] Each competency consists of two to three components and their associated indicators, which are provided to nurses to determine their stage of development (i.e., advanced beginner, informed nurse, resource person, or clinical expert). This competency framework strongly reflects nursing practice in Quebec and the specific societal, institutional, and regulatory context. Nevertheless, it shares similarities with other frameworks, such as the Quality and Safety Education for Nurses [8] or the Competency Outcomes and Performance Assessment [9] frameworks, both created in the United States.

Although multiple competency frameworks and evidence-based guidelines for their development have been proposed [5], the literature on their implementation is sparser. A scoping review [10] found that the implementation of competency-based education in family medicine has been chiefly examined in pre-licensure education and that CPD has received considerably less attention, a finding that echoes prior work. [11,12] A narrative review [13] focused on assessment in family medicine and found that most competency-based CPD efforts were at the stage of development rather than implementation. In nursing, reports on competency-based CPD primarily discuss implementing Wright's [14] model [15,16] or educational interventions based on existing competency frameworks. [17]

Prior work highlights several factors that may affect the implementation of a competency-based approach in education and CPD. It stresses the importance of constructive alignment and continuity between teaching, learning, and assessment from education to practice. [10,11,18,19] A competency-based approach represents a shift in educational paradigm, particularly concerning the role of assessment for learning instead of regulation [20-22]—some have reported fear of

confronting learners or low responsiveness to feedback. [23] The stakeholders' visions must align with the needs of the healthcare system and the population it serves. [11,19-21,24] Leadership for this type of project should come from various levels of an organization [11,15], and those responsible for implementation must be aware of the potential resistance to change. Therefore, providing appropriate support and education regarding competency-based education is often considered imperative. [10,11,15,17,24,25] Finally, the use of technology to improve accessibility [11,23] and the search for appropriate means of communication to large groups [20] are essential.

Although these various reports provide helpful guidance, clear guidelines for implementing competency-based CPD are lacking. Furthermore, the use of competency frameworks by nurses engaging in CPD is little documented. If the complexity of practice creates a need for context-sensitive competency frameworks, their implementation may also be subject to various local contingencies. Thus, documenting the factors that facilitate or hinder the implementation of competency frameworks for CPD appears as a relevant exercise to guide similar efforts.

METHODS

This study used a qualitative descriptive design to document the facilitators and barriers to implementing a competency framework in Quebec, Canada, based on group interviews with 58 stakeholders from the 12 organizations involved in the first wave of implementation. This dataset comes from a parent study aiming to evaluate the multi-centre implementation of the competency framework in one hospital unit in each of the 33 organizations of the Quebec healthcare system. [26] Qualitative description is particularly suited to studying a phenomenon through the perspectives of those involved. [27] Based on a naturalistic and subjectivist worldview, it aims to produce a description that remains close to the words of participants. The Research Ethics Board of the Centre hospitalier universitaire de Montréal approved this study (MP-02-2019-8232).

Implementation of the competency framework

Three waves involving 12, 10, and 11 units were initially planned to begin implementing the competency framework in Fall 2019, Winter 2020, or Spring 2020. The implementation procedure was based on the first three stages defined by Fixsen, Naoom, Blase, Friedman, and Wallace [28] from their review of evidence from implementation science: 1) exploration and adoption; 2) installation; and 3) initial implementation.

Implementation procedures

In the first stage, researchers presented the competency framework and the implementation procedures to the nursing directors of the healthcare organizations in March 2019; all agreed to participate. Each selected a unit where they formed two groups, one tactical and one collaborative. The tactical group consisted of individuals involved in management, education, and quality improvement at the organizational level; this group was responsible for coordinating and creating favorable conditions for implementation. The collaborative group was composed of nurses involved in day-to-day activities on the unit, including head nurses, charge nurses, nurse educators, and unit nurses; this group was responsible for adapting and carrying out implementation activities and supporting nurses using the framework. A project lead was part of both groups for each unit—a nurse educator or a head nurse. The rest of the implementation process proceeded independently for each unit.

In the second stage, researchers led a four-hour educational session for the tactical and collaborative groups to familiarize themselves with the competency framework, competency-based education and CPD, and a suggested implementation plan. A portion of the session was dedicated to planning local implementation strategies based on stakeholders' knowledge of their unit's context and resources.

In the third stage, the collaborative group introduced the project to unit nurses with support from the tactical group. Nurses' participation consisted of completing an online survey comprised

of a 30-min research questionnaire (sociodemographic data and a set of research instruments totaling 72 items) and a 90-min self-assessment questionnaire. Nurses who wished to participate received an individual link to access the survey on their phone, computer, or tablet; they could pause and resume the questionnaire at their convenience.

The first wave of implementation began in the Fall of 2019. Educational sessions were held on the twelve first-wave units from September 2019 to February 2020, and 162 out of 453 eligible nurses (36%) completed their self-assessment afterward. Because of the COVID-19 pandemic, implementation was interrupted in March 2020 and resumed in July 2020. Six of the twelve units from the first wave completed implementation beforehand, and six were interrupted and had to resume implementation in July 2020.

Self-assessment procedures

Based on the seven competencies from the framework, the self-assessment questionnaire included 191 indicators divided into four levels of development (i.e., *n*=56, 54, 48, and 39 indicators for the advanced beginner, informed nurse, resource-person, or clinical expert levels, respectively). The self-assessment proceeded in an incremental, stepwise manner. One competency at a time, nurses identified which indicators of the first level (i.e., advanced beginner) they had achieved; they moved on to the next level only if they had achieved over 50% of the indicators from the previous level, and so on. After completing one competency, they rated their perceived level of development (i.e., did they feel like an advanced beginner, informed nurse, resource-person, or clinical expert for that competency) and continued with the next. Upon completing the seven competencies, they rated their perceived overall level of development and formulated CPD objectives, priorities, and actions to pursue in the next year.

Nurses completed the self-assessment questionnaire once and received an individual report detailing their responses by email. On average, they rated most of their competencies at the

second level of development (i.e., informed nurse). The most advanced competency was clinical judgment and the least developed was clinical leadership. Detailed results of the self-assessment will be presented in a separate publication.

After about six months of unit nurses assessing their competencies, researchers aggregated self-assessment data into a non-nominal unit report, which presented the average level for each competency and nurses' professional development goals. Researchers presented the unit report to the tactical and collaborative groups in a one-hour meeting to target priorities and plan professional development activities for the coming months (e.g., orientation of new nurses, educational sessions, participation in various projects). The choice and implementation of actions were left to the tactical and collaborative groups.

Participants

A convenience sample was formed from the collaborative and tactical groups of the first wave of implementation (n=12/33 units). All individuals who had attended the educational sessions in the installation stage were invited by email to a group interview. They were encouraged to share the invitation with those involved in the implementation in their unit. No exclusion criteria were applied. Before the interviews, researchers sought attendees' written informed consent by email and reminded them that they were free to participate or not.

A group interview was conducted for each participating unit, and interviewees were invited to join the session for their respective units. In total, 58 members of collaborative and tactical groups, including 12 project leads, participated in 12 group interviews, which involved three to eight participants (median = 4). Participants were eight unit nurses (UN) and charge nurses (CN), 12 head nurses (HN), 10 nurse educators (NE), six clinical nurse specialists (CNS), 12 mid-level managers (MLM; coordinators and human resources representatives), and 11 nursing directors (ND) and their associates (AND).

Data collection and analysis

Between June 2020 and June 2021, 12 group interviews were facilitated by two research team members on Zoom (Zoom Video Communications, San Jose, CA) using an interview guide (Appendix A). The guide addressed participants' experience with the implementation process, their perceptions of facilitators and barriers (including the impact of the COVID-19 pandemic), and the advice they would give to another organization interested in implementing the competency framework. The interviews lasted from 15 to 45 minutes, with an average of 26 minutes; they were recorded and transcribed verbatim. Although the length of the interviews varied, the same questions were asked of all groups, and participants were invited to express their thoughts in detail; the interviews were closed when the participants felt they had nothing more to share.

In addition, the project leads on each unit documented the implementation progress in a logbook, which consisted of an online questionnaire with open-ended questions about implementation activities, challenges encountered, and proposed solutions. The implementation logbook was collected for each participating unit.

Data from the interviews and the logbooks were imported in MAXQDA 2020 (VERBI Gmbh, Germany) and subjected to thematic analysis [29], a data analysis approach consistent with qualitative description. [27] Two research assistants performed the initial coding of the transcripts inductively. The first set of codes was revised and discussed by two researchers until they agreed that they reflected the content and meaning of the transcripts. The two researchers then met with a third researcher who had read the transcripts to discuss their impressions of the data and identify potential themes. The three researchers then worked independently to organize the codes through an ongoing process of defining and refining the themes until they believed they captured participants' meaning and remained faithful to the data.

Rigor

This study followed suggested means to establish rigor in qualitative description. [27] The researchers engaged with participants over an extended period for the implementation (approximately one year) to build trust and rapport. An audit trail captured the data collection and analysis process. Two sources of data (interviews and logbooks) were used. Five research team members (two research assistants and three researchers) were involved in the coding and thematization process to ensure the exhaustiveness, accuracy, and truthfulness to participants' accounts. Findings were checked with interviewers to ensure accuracy. The current report provides a detailed context description and direct quotations to support the findings. Of note, ten interviews were conducted in French and two in both English and French; the data were analyzed in their original language, and the themes were formulated in French and English for reporting.

RESULTS

Analysis of the data yielded five themes related to facilitators and barriers to the implementation of the nursing competency framework: 1) finding the 'right unit' despite an unfavorable context; 2) taking and protecting time for self-assessment; 3) creating value around competency assessment; 4) bringing the project as close to the nurses as possible; 5) making the framework accessible. Table 1 summarizes these themes.

Finding the 'right unit' despite an unfavorable context

The first theme reflects participants' account of contextual conditions not conducive to nurses' CPD and characteristics of the nursing team that they felt counterbalanced these conditions. Participants described the high demands placed on nurses due to heavy workload and understaffing. Nurses often worked overtime—sometimes mandatory—and were not released for continuing education, which they had to pursue on their own time. The COVID-19 pandemic exacerbated nurses' workload and turnover, increasing nurses' fatigue. Participants explained that

these conditions decreased nurses' willingness to participate in projects beyond their clinical responsibilities, such as implementing a competency framework. However, they believed that competing demands on nurses' professional development were not solely due to the pandemic and were part of an ongoing problem:

> If we wait until there is no more nursing shortage, […] no more vacations, […] no more COVID, […] until everything is better, we will always be making excuses for professional development to wait. How can we make it part of the picture and not just a one-time thing when nurses are due for their contact hours? (NE-I4)

Despite these challenging conditions, participants detailed favorable conditions for implementing the competency framework. They believed that some nurses were naturally more interested and inclined to participate in such projects. They explained that a smaller team size made it easier to reach nurses to explain the project and follow up on their participation. They felt that the stability of the nursing team and management—i.e., having sufficient human resources who had worked on the unit long enough—fostered positive work relationships, which was of utmost importance for successful implementation. Together, these conditions were characteristics of what they called 'the right unit' for implementation:

> We chose the right unit. A stable unit […] with motivated staff who likes to participate in projects, […] where there are not too many changes […], where the head nurse has been in place for a long time, and where trust is established with the staff. For this type of project, […] you must pick the right unit. (MLM-I5)

Taking and protecting time for self-assessment

Participants noted that the self-assessment questionnaire was lengthy and required nurses to focus for a long time. This barrier made it challenging for nurses to find time to reflect and complete the questionnaire during their work shifts. They believed it would have been ideal to have additional human resources to cover the nurses while they were released from their clinical duties to complete their self-assessment. However, this was not attempted on any of the participating units.

Consequently, most nurses had to complete their self-assessment on their personal time, which most units paid as overtime. Participants believed this remuneration was an incentive and demonstrated the organization's commitment to nurses' professional development. However, some participants questioned the value of money as an incentive: "Considering the intensity of the work and mandatory overtime, I do not think getting paid for one extra hour does much. […] It is difficult to target the right things to attract them" (MLM-I6).

Creating value around competency assessment

Although participants from the tactical and collaborative groups saw the benefits of self-assessment with the competency framework, the third theme reflects how they had to create value—and be accountable—to encourage nurses to participate. From their perspective, competency self-assessment had tremendous potential to improve their organization's support for nurses' professional development, i.e., understanding their level of development, tuning into their needs, and targeting relevant CPD initiatives. They believed it provided an opportunity for long-term monitoring of nurses' development—perhaps through annual review—and to revise existing continuing education programs. Furthermore, they argued that the project created an opportunity to showcase and position nursing within their organization and make nursing research visible to unit nurses.

However, nurses did not see these benefits clearly: "It is quite theoretical in a sense, and it is not something that nurses do in day-to-day work. It is not a skill that they learned. It may be harder to see the immediate benefit of investing themselves" (CNS-I2). Although they believed it aligned with their organization's philosophy, they acknowledged that self-assessment was uncommon in practice and not fully integrated into the culture. Furthermore, nurses sometimes perceived self-assessment as punitive: "They were afraid I would hold disciplinary hearings regarding their competency" (UM-I3); "They were afraid we would judge them. I had to remind

them that it was anonymous. There were experienced nurses who thought their competence would be devalued" (NE-I8). As such, participants had to clearly emphasize the constructive purpose of the project and highlight its potential benefits for nurses:

> It is not a performance appraisal. Presenting it as something that was not threatening was a big success factor. We repeated it times and times again. […] It was all about our ability to show its importance without being perceived as blame. (ND-I4)

Another issue that participants raised was that nurses are regularly approached for various projects but "never see the results" (CNS-I2) or "get nothing back" (AND-I10). Thus, some saw the implementation project as another demand for which they would not see any result. Accordingly, participants felt compelled to share the results (i.e., unit report) and be accountable for following through on the promised benefits:

> It will be necessary for the staff on the unit to see how we use these results. […] We told them at the beginning that we would consider the results to develop our training according to the expressed objectives and needs. I think it is essential to keep our word. […] If there is a similar project in the future, people will say: "Well, the last time we participated, it led to something positive." (AND-I11)

In addition to explaining the project's benefits, various incentives were offered to encourage nurses' participation. Besides paying for overtime, offering three contact hours was considered one of the most effective incentives—nurses in Quebec must complete at least 20 hours of continuing education each year. However, participants explained that it was ineffective for nurses who had already met this requirement or after the licensing board suspended the requirement due to the pandemic. Besides, raffles were held in some units, but participants felt they were ineffective.

Bringing the project as close to the nurses as possible

The fourth theme revolves around strategies for dissemination and support, specifically on the effectiveness of those bringing the implementation project closer to nurses. Participants used a

variety of communication strategies to inform nurses of the project and send reminders (e.g., staff meetings, emails, posters, hospital newsletter, social media, badges). While some believed that direct contact and word-of-mouth were most effective, others suggested prioritizing technology to reach nurses on all shifts and allow them to consume the information when they are receptive, at a time of their choosing. Still, most favored a combination of face-to-face and digital contact—the medium of communication did not seem as important as having an ongoing discussion about the project to attract and maintain nurses' attention:

> I was looking for ways to get people talking, […] to engage them. I would walk around the hospital with my [project] badge, talking to students and people on other units. I was trying to make it part of an ongoing discussion. […] Little nods here and there, everywhere, so that people would talk about it and use [the project] as a lever to reflect on their practice. (CNS-I4)

Accordingly, participants recommended a short, intense implementation blitz to take advantage of nurses' motivation at the beginning of the project. Furthermore, they recommended frequent feedback on the unit's participation rate to create motivation based on achieving a common goal—a thermometer chart to track participation was a strong motivator.

Besides, the active involvement and leadership of head nurses, nurse educators, and clinical nurse specialists were noted in every group interview. Their good relationships with the nursing team helped promote the project and mobilize nurses. However, as explained by one head nurse: "I am still their head nurse, and I am in a position of authority" (HN-I3). Therefore, the involvement and leadership of charge nurses and unit nurses were instrumental:

> Having the nurses on the unit involved with the study is helpful. They can speak to their colleagues and explain things in ways that I could not. They also have better motivating factors because I do not work with them daily. (CNS-I2)

The role of charge nurses and unit nurses was to share information on the project with their colleagues and support them in their self-assessment (e.g., accessing the questionnaire, clarifying indicators). To prepare for this role, they attended educational sessions with the researchers and,

most importantly, completed their own self-assessment. Going through the entire process, navigating the questionnaire, and seeing the questions were essential to support their colleagues. In addition, it clarified the required level of investment, as nurses were under the impression that the project "would be very demanding. They did not know what they were getting into […] and thought it would take a lot of time and effort. So, explaining everything and having demonstrations [of the questionnaire] reassured them" (CN-I3). Their hands-on presence and immediate availability were appreciated.

Making the framework accessible

The fifth theme encompasses circumstances that promoted or limited the ability of nurses to access and use the competency framework. Participants commended the online format of the self-assessment questionnaire because nurses could easily access it at the time, place, and with the device of their choice. The online format allowed nurses to pause and resume the questionnaire later, diminishing their perception that "they had to sit for two consecutive hours in front of the computer" (UN-I6). However, participants explained that the online format could be a barrier for nurses who are less familiar with computers and need coaching to use the platform.

Participants identified the language used in the competency framework as a potential barrier. They characterized the vocabulary as "abstract," "academic," and "complicated," which was problematic for some nurses who had difficulty understanding the meaning of some indicators—participants suggested providing examples for clarity. Second, two participating units employed a significant proportion of nurses whose first language was English. Although most of them were bilingual, using a competency framework written in French was "too much of a challenge for them, and they would rather get their contact hours in some other way" (UN-I2).

DISCUSSION

Although competency-based education has gained momentum in schools of nursing and other health disciplines, competency-based CPD in clinical settings has been the topic of little research despite repeated calls for continuity and interdependence between educational and practice settings. [19,30] This study was one of the first to document the large-scale implementation of a competency framework to support nurses' CPD, an innovation consistent with the principles of competency-based education. In addition to capturing the specificities of nursing practice in the Quebec context, this competency framework portrays the development of nurses' competencies throughout their career, from their entry into clinical practice to expertise. It thus represents an essential tool for self-assessment, reflection, and ownership of their professional development as promoted by competency-based education. [1,2] Based on evidence from implementation science [28] and educational changes, [11,15,31] we adopted a stepwise implementation process building on collaborative leadership and the involvement of stakeholders at various levels. We offered extensive training and support to participating units to create local capacities to promote this innovation and competency-based CPD—which constitutes a substantial change in and of itself. [11,31] The project was part of a provincial effort endorsed by all nursing directors across Quebec, which created a strong collective mobilization for promoting the lifelong learning of nurses.

The examination of barriers and facilitators to this large-scale project yielded five themes that bear similarities to the challenges encountered in implementing competency-based education in other settings, such as stakeholder alignment, communication, or perception of the role of assessment in learning. [19-23,31,32] Nevertheless, they are unique in that they embody the relations between the innovation, the clinical setting, and the nurses involved. These three components represent important constructs from an implementation perspective. [33]

Regarding the characteristics of the intervention, the length, language, and level of reflection required to complete the self-assessment questionnaire represented undeniable challenges in

terms of compatibility with nurses' work. Despite efforts to maximize accessibility, the perceived complexity of the questionnaire combined with the competing demands that nurses faced made it difficult for them to take time during their work shift to self-assess their competencies, and they had to use their personal time to do so. These challenges echo well-known issues regarding nurses' work environment and work conditions (e.g., poor staffing, heavy workload, lack of funding and time for workplace training), which leave little opportunity for CPD and affect their ability to engage in lifelong learning. [34] Participants were aware of these issues and discussed various strategies to create a supportive environment, often with monetary incentives from the organizations' existing workforce development programs that, when offered, proved to be of limited effectiveness given the broader context. Nonetheless, they believed that structural and cultural characteristics of the settings (e.g., small team size, nurses' interest in new projects, organizational support) created favorable conditions for implementing the competency framework, despite an unfavorable context exacerbated by the COVID-19 pandemic.

This importance of finding the 'right unit' was a significant theme in participants' accounts and has not been discussed to the same extent as leadership or implementation strategies in the literature. Although the goal is to eventually implement the competency framework in all units of the participating organizations, this finding invites particular attention to the characteristics of the settings and groups of individuals affected by such change when planning for implementation. Although current formal measures of readiness for implementation appear to lack psychometric and pragmatic qualities, [35] participants still described three main features of what they perceived to be the 'right unit' for implementation: the nursing team's motivation and interest, small size, and stability. These features and the various contextual issues that participants discussed regarding nurses' workload and fatigue can be part of a heuristic assessment of whether the

context is conducive to implementing a similar innovation or whether additional upstream measures are needed to prepare the ground for such a project.

As for the implementation process, changes that affect CPD in healthcare systems can be challenging and complicated, and educators must consider how to implement them effectively. Although the barriers and facilitators identified are associated with the initial implementation stage, [28] the exploration, adoption, and installation stages were crucial in creating favorable conditions for this project. In a qualitative study of educational changes in postgraduate medical education, [32] having a clear vision and meaning, sharing responsibilities and power by involving colleagues and superiors, and having a long-term perspective contributed to successful implementation. These factors align with recommendations regarding leadership for implementing competency-based education in educational settings, [11,15] while pointing towards another essential principle of this approach: accountability for outcomes. As its name implies, competency-based education focuses on outcomes and builds on the understanding that education and training are designed to meet the needs of patients and populations while meeting the educational needs of learners. [2,19] Under this lens, healthcare professionals and institutions have a responsibility to demonstrate that they meet patients' and communities' needs. [19] For nurses, having meaningful, contextualized learning opportunities can be motivating, support their engagement in CPD, and boost the influence of external motivators such as monetary incentives or licensing requirements. [34] For institutions, dedicating resources to assessing and following up on nurses' competency levels and learning needs through broader CPD programs is equally important. Ultimately, it is about building an organizational learning culture that promotes dialogue, collaboration, and a joint vision of accountability to the public, and where leaders understand and value individual and collective learning to promote organizational performance. [36,37]

Future research could inquire into nurses' perception of this innovation, which the current study did not address. There were proportionately few unit nurses compared to other categories of stakeholders in the study sample, which represents a limit. Besides, we did not document nurses' use of the framework after completing their self-assessment. Longitudinal monitoring of nurses' competencies and exploration of other assessment modalities (e.g., co-assessment with peers or with a superior) are additional avenues to explore in the future.

CONCLUSION

Implementing a competency framework to support nurses' CPD represents a unique challenge because it involves two crucial changes: adopting a competency-based approach focused on educational outcomes and accountability to the public and valorizing a learning culture where nurses become active stakeholders in their CPD. Allotting time and organizational resources to support nurses' exploration and self-determination continue to be challenging but represent a source of reward for organizations who decide to capitalize on nurses' contribution to the health of patients and communities.

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REFERENCES

1. Harper MG, Maloney P. *Nursing professional development: Scope and standards of practice*. 3rd ed. 2016.

2. Campbell C, Silver I, Sherbino J, Cate OT, Holmboe ES. Competency-based continuing professional development. *Med Teach*. 2010;32(8):657-662. doi:10.3109/0142159X.2010.500708

3. Thistlethwaite JE, Forman D, Matthews LR, Rogers GD, Steketee C, Yassine T. Competencies and frameworks in interprofessional education: A comparative analysis. *Acad Med*. 2014;89(6):869-875. doi:10.1097/ACM.0000000000000249

4. Mills JA, Middleton JW, Schafer A, Fitzpatrick S, Short S, Cieza A. Proposing a re-conceptualisation of competency framework terminology for health: A scoping review. *Hum Resour Health*. 2020;18(1):15. doi:10.1186/s12960-019-0443-8

5. Batt AM, Tavares W, Williams B. The development of competency frameworks in healthcare professions: A scoping review. *Adv Health Sci Educ*. 2020;25(4):913-987. doi:10.1007/s10459-019-09946-w

6. Centre Hospitalier Universitaire Sainte-Justine (2014), adapted by Boyer L, Pepin J, Dubois S, Descôteaux R, Robinette L, Déry, J. Référentiel de compétences infirmières en milieu de soins hospitaliers québécois de l'enfant à l'adulte. https://www.cifi.umontreal.ca/documents/Publications/CIFI_Referentiel_Comptence_Hospitalier_190125_HR.pdf

7. Boyer L, Pepin J, Dubois S, et al. Adaptation and validation of a nursing competencies framework for clinical practice on a continuum of care from childhood to adulthood: A Delphi study. *Nurse Educ Today*. 2020;93:104530. doi:10.1016/j.nedt.2020.104530

8. Cronenwett L, Sherwood G, Barnsteiner J, et al. Quality and safety education for nurses. *Nurs Outlook*. 2007;55(3):122-31. doi:10.1016/j.outlook.2007.02.006

9. Lenburg CB, Klein C, Abdur-Rahman V, Spencer T, Boyer S. The COPA model: a comprehensive framework designed to promote quality care and competence for patient safety. *Nurs Educ Perspect*. 2009;30(5):312-317.

10. Campbell C, Hendry P, Delva D, Danilovich N, Kitto S. Implementing competency-based medical education in family medicine: A scoping review on residency programs and family practices in Canada and the United States. *Fam Med*. 2020;52(4):246-254. doi:10.22454/FamMed.2020.594402

11. Nousiainen MT, Caverzagie KJ, Ferguson PC, Frank JR, Collaborators I. Implementing competency-based medical education: What changes in curricular structure and processes are needed? *Med Teach*. 2017;39(6):594-598. doi:10.1080/0142159X.2017.1315077

12. Kitto S, Danilovich N, Delva D, et al. Uncharted territory: Knowledge translation of competency-based continuing professional development in family medicine. *Can Fam Physician*. 2018;64(4):250-253.

13. Danilovich N, Kitto S, Price DW, Campbell C, Hodgson A, Hendry P. Implementing competency-based medical education in family medicine: A narrative review of current trends in assessment. *Fam Med*. 2021;53(1):9-22. doi:10.22454/FamMed.2021.453158

14. Wright D. *The ultimate guide to competency assessment in health care*. 3rd ed. Creative Health Care Management; 2005.

15. Durkin GJ. Implementation and evaluation of Wright's competency model. *J Nurses Prof Dev*. 2019;35(6):305-316. doi:10.1097/NND.0000000000000575

16. Schanne LC, Stern S, Hand C, et al. From chaos to competency: Implementing a new competency model in a multihospital system. *J Contin Educ Nurs*. 2016;47(3):111-117. doi:10.3928/00220124-20160218-06

17. Goudreau J, Pepin J, Larue C, et al. A competency-based approach to nurses' continuing education for clinical reasoning and leadership through reflective practice in a care situation. *Nurse Educ Pract*. 2015;15(6):572-578. doi:10.1016/j.nepr.2015.10.013

18. Van Melle E, Frank JR, Holmboe ES, et al. A core components framework for evaluating implementation of competency-based medical education programs. *Acad Med*. 2019;94(7):1002-1009. doi:10.1097/ACM.0000000000002743

19. Caverzagie KJ, Nousiainen MT, Ferguson PC, et al. Overarching challenges to the implementation of competency-based medical education. *Med Teach*. 2017;39(6):588-593. doi:10.1080/0142159X.2017.1315075

20. Pasternack JR, Dadiz R, McBeth R, et al. Qualitative study exploring implementation of a point-of-care competency-based lumbar puncture program across institutions. *Acad Pediatr*. 2016;16(7):621-9. doi:10.1016/j.acap.2016.04.010

21. Hall AK, Rich J, Dagnone JD, et al. It's a marathon, not a sprint: Rapid evaluation of competency-based medical education program implementation. *Acad Med*. 2020;95(5):786-793. doi:10.1097/ACM.0000000000003040

22. Ferguson PC, Caverzagie KJ, Nousiainen MT, Snell L, ICBME Collaborators. Changing the culture of medical training: An important step toward the implementation of competency-based medical education. *Med Teach*. 2017;39(6):599-602. doi:10.1080/0142159X.2017.1315079

23. Crawford L, Cofie N, McEwen L, Dagnone D, Taylor SW. Perceptions and barriers to competency-based education in Canadian postgraduate medical education. *J Eval Clin Pract*. 2020;26(4):1124-1131. doi:10.1111/jep.13371

24. Mejicano GC, Bumsted TN. Describing the journey and lessons learned implementing a competency-based, time-variable undergraduate medical education curriculum. *Acad Med*. 2018;93(3):S42-S48. doi:10.1097/ACM.0000000000002068

25. Jippes E, Van Luijk SJ, Pols J, Achterkamp MC, Brand PL, Van Engelen JM. Facilitators and barriers to a nationwide implementation of competency-based postgraduate medical curricula: A qualitative study. *Med Teach*. 2012;34(8):e589-602. doi:10.3109/0142159X.2012.670325

26. Boyer L, Lavoie P, Déry J, Lavoie-Tremblay M, Paquet M, Pepin J. Projet RéCI: Référentiel de compétences infirmières. https://cifi.umontreal.ca/recherche/projet-reci/

27. Bradshaw C, Atkinson S, Doody O. Employing a qualitative description approach in health care research. *Glob Qual Nurs Res*. 2017;4:1-8. doi:10.1177/2333393617742282

28. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. *Implementation research: A synthesis of the literature*. 2005. https://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/resources/NIRN-MonographFull-01-2005.pdf

29. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101. doi:10.1191/1478088706qp063oa

30. Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *The Lancet*. 2010;376(9756):1923-1958. doi:10.1016/s0140-6736(10)61854-5

31. Dragoo A, Barrows R. Implementing competency-based education: Challenges, strategies, and a decision-making framework. *J Contin High Educ*. 2016;64(2):73-83. doi:10.1080/07377363.2016.1172193

32. Wijk H, Heikkila K, Ponzer S, Kihlstrom L, Nordquist J. Successful implementation of change in postgraduate medical education: A qualitative study of programme directors. *BMC Med Educ*. 2021;21(1):213. doi:10.1186/s12909-021-02606-x

33. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implement Sci*. 2009;4:50. doi:10.1186/1748-5908-4-50

34. Mlambo M, Silen C, McGrath C. Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. *BMC Nurs*. 2021;20(1):62. doi:10.1186/s12912-021-00579-2

35. Weiner BJ, Mettert KD, Dorsey CN, et al. Measuring readiness for implementation: A systematic review of measures' psychometric and pragmatic properties. *Implement Res Pract*. 2020;1:1-29. doi:10.1177/2633489520933896

36. Marsick VJ, Watkins KE. Demonstrating the value of an organization's learning culture: The dimensions of the learning organization questionnaire. *Adv Dev Hum Resour*. 2003/05/01 2003;5(2):132-151. doi:10.1177/1523422303005002002

37. Watkins KE, Marsick VJ. Conceptualizing an organization that learns. In: Örtenblad AR, ed. *The Oxford Handbook of the Learning Organization*. 2019:50-66.

Table 1. Summary of themes related to facilitators and barriers to implementation

Themes	**Facilitators**	**Barriers**
Finding the 'right unit' despite an unfavorable context	Interest and motivation Smaller nursing team size Stability of nursing team and management, positive work relationships	Fatigue and heavy workload Understaffing and high turnover Overtime (sometimes mandatory) No release for continuing education
Taking and protecting time for self-assessment	Paid overtime for self-assessment	Lengthy questionnaire, requires focus Self-assessment challenging during work shifts No release for self-assessment
Creating value around competency assessment	Clear benefits for tactical and collaborative groups Emphasis on the constructive purpose and potential benefits Sharing and following through on results Incentives (paid overtime, contact hours, raffles)	Unclear benefits for nurses Self-assessment is uncommon in practice, perceived as punitive History of lack of follow-up for this type of project on the participating units
Bringing the project as close to the nurses as possible	Combining diverse face-to-face and digital communication strategies Ongoing discussion about the project to attract and maintain attention, implementation blitz Presence and leadership of unit leaders	Contacting several nurses on different shifts Declining attention and motivation over time Perception that the project would be very demanding
Making the framework accessible	Online format	Lack of familiarity with computers Language barriers