Registered Nurses' Association of Ontario
Clinical Practice in a Digital Health Environment Best Practice Guideline
March, 2024

Overview of Recommendation Questions and Good Practice Statements

Table 1 outlines the original recommendation questions determined by the expert panel, and their corresponding PICO questions (population, intervention, comparison, outcomes). For Recommendation Questions 1, 2, 3, 4, 5, and 6, after conducting the initial systematic review searches it was decided to look for further indirect evidence to support each question. Indirect evidence searches were conducted with the help of a health sciences librarian, by broadening the population, intervention and/or comparison for each recommendation question. Column D indicates the final decision that was made based on the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach and decisions by the expert panel; either a good practice statement, a recommendation statement, or no recommendation. For further details regarding the best practice guidelines (BPG) methods, please refer to Appendix C in the published BPG.

*Note: the bolded and italicized words in Column C indicate the broadened population, intervention and/or comparison.

Table 1: Overview of Recommendation Questions and Good Practice Statements

a) Original Recommendation Question	b) Original PICO Question	c) Indirect Search PICO Question	d) Final Decision Based on GRADE and Decisions by Expert Panel
1) Should practical (e.g., hands-on) professional development education focused on the use of digital health technologies within an organization be recommended or not for all nurses?	**P:** All nurses, at all levels of an organization (including RNs, RPNs, NPs), and persons receiving care. **I:** Practical or hands-on professional development education focused on the use of digital health technologies. **C:** Standard education (i.e., no practical component).	**P:** All nurses ***and other health providers***, and persons receiving care. **I:** Practical or hands-on professional development education (***in general***, or specific to digital health technologies). **C:** Standard education (i.e., no practical component).	**Recommendation statement 1.0:** The expert panel suggests that health-service and academic organizations provide ongoing education to nurses and health providers that includes hands-on training for the use of digital health technologies. (Conditional)

	O: Nurse competence [with using technology], nurse acceptance of technology, nurse sensitive outcomes (falls, pressure injuries, pain), nurse involvement in the technology lifecycle, nurse confidence [with using technology], nurse-person therapeutic relationship.	**O:** Nurse competence [with using technology], nurse acceptance of technology, nurse sensitive outcomes (falls, pressure injuries, pain), nurse involvement in the technology lifecycle, nurse confidence [with using technology], nurse-person therapeutic relationship.	
2) Should education about relational care and interpersonal communication skills be recommended or not for nurses practicing in virtual care settings and in-person digital health environments?	**P:** All nurses practicing in virtual care settings or in-person digital health environments, and persons receiving care **I:** Education about relational care and interpersonal communication skills [specific to digital health environments] **C:** No education about relational care and interpersonal communication skills [specific to digital health environments] **O:** Person/caregiver/family experience or satisfaction, nurse competence [with using technology], nurse confidence [with using technology], nurse -person therapeutic relationship, person/caregiver/ family involvement and engagement in care.	**P:** All nurses ***and other health providers***, and persons receiving care. **I:** Comprehensive education about relational care and interpersonal communication skills (***in general***, or specific to digital health technologies). **C:** Standard education (or no education) about relational care and interpersonal communication skills. **O:** Person, caregiver or family's experience or satisfaction with care received, nurse competence [with using technology], nurse confidence [with using technology], nurse-person therapeutic relationship, person, caregiver or family involvement and engagement in care.	**Recommendation statement 2.0:** The expert panel suggests that health-service and academic organizations provide ongoing education to nurses and health providers that focuses on interpersonal communication skills when using digital health technologies. (Conditional)

3) Should the implementation of interdisciplinary peer champion models in health service organizations be recommended or not to facilitate education for health providers on the use of digital health technologies?	**P:** Health providers at all levels of an organization, and persons receiving care **I:** Interdisciplinary peer champion model [to facilitate education for health providers on the use of digital health technologies] **C:** No interdisciplinary peer champion model **O:** Health provider competence [with using technology], health provider adoption of technology, health provider confidence [with using technology], health provider sensitive outcomes (falls, pressure injuries, pain), sustainability of education (i.e., knowledge and skills retention).	**P:** Health providers at all levels of an organization, and persons receiving care. **I:** Interdisciplinary peer champion model (***in general***, or specific to digital health technologies). **C:** No interdisciplinary peer champion model. **O:** Health provider competence [with using technology], health provider adoption of technology, health provider confidence [with using technology], health provider sensitive outcomes (falls, pressure injuries, pain), sustainability of education (i.e., knowledge and skills retention).	**Recommendation statement 3.0:** The expert panel suggests that health service organizations implement interdisciplinary peer champion models to facilitate education for nurses and health providers on the use of digital health technologies. (Conditional)
4) Should the use of predictive analytics software or systems (e.g., command centers and risk assessment software tools) for nurses providing care in all practice settings be recommended or not to inform clinical decision-making and improve clinical outcomes?	**P:** Nurses providing care in all practice settings (including RNs, RPNs, NPs), and persons receiving care **I:** Use of AI-driven predictive analytics **C:** No use of AI-driven predictive analytics **O:** Proactive/anticipatory care, critical incidents, failure to rescue, consistent application	**P:** All nurses ***and other health providers***, and persons receiving care. **I:** Use of AI-driven predictive analytics. **C:** No use of AI-driven predictive analytics. **O:** Proactive/anticipatory care, critical incidents, failure to rescue, consistent application of evidence-based practice,	**Recommendation statement 4.0:** The expert panel suggests that health service organizations implement clinical decision support systems or early warning systems that use artificial intelligence-driven predictive analytics to support nurses' and health providers' clinical decision-making. (Conditional)

	of evidence-based practice, nurse sensitive outcomes (falls, pressure injuries, pain).	nurse sensitive outcomes (falls, pressure injuries, pain).	
5) Should a distributive model (versus no distributive model or any other type of change management model) be recommended to integrate digital health competencies into the professional practice roles and responsibilities of nurses at all levels within an organization?	**P:** All nurses, at all levels of an organization (including RNs, RPNs, NPs), and persons receiving care **I:** Distributive model to integrate digital health competencies into professional practice roles and responsibilities of nurses at all levels within an organization **C:** No distributive model **O:** Nurse competence with using technology, nurse engagement [with using, developing, acquiring, and participating in education about the technology], nurse confidence [with using technology], person, caregiver, family experience or satisfaction, nurses are able to define what their role is [within the distributive model].	**P:** All nurses, at all levels of an organization (including RNs, RPNs, NPs), ***other health providers***, and persons receiving care. **Intervention:** A distributive model to integrate competencies into the professional practice roles and responsibilities of nurses at all levels within an organization ***(in general, or specific to digital health technologies)***. **Comparison:** No distributive model, ***or other types of change management models (e.g., 'top-down' approach, hierarchical organizational structure, vertical leadership, or others on a spectrum)***. **Outcomes:** Nurse competence [with using technology], nurse engagement [with using, developing, acquiring, and participating in education about the technology], nurse confidence [with using technology], person, caregiver or family's experience or	**No recommendation.** The expert panel determined that current evidence was insufficient to assess the certainty of effects of a distributive model compared to other types of change management models to integrate digital health competencies into the professional practice roles and responsibilities of nurses within an organization.

		satisfaction with care received, nurses are able to define what their role is [within the distributive model].	
6) Should the active involvement of nurses (in all roles) in all stages in the technology lifecycle (i.e., design, development, implementation, adoption, evaluation, and ongoing monitoring and optimization) be recommended?	**P:** All nurses in all roles (including RNs, RPNs, and NPs) **I:** Involvement of nurses in any/all stages of the technology lifecycle **C:** No involvement of nurses in any stage of the technology lifecycle **O:** Nurse satisfaction [with the ability to effectively use and integrate technology into the nursing process], nursing workload, nurse competence [with using technology], nurse confidence [with using technology], interprofessional collaboration.	**P:** All nurses ***and other health providers*** **I:** Involvement of nurses ***and other health providers*** in any stage of the technology lifecycle. **C:** No involvement of nurses ***or other health providers*** in any stage of the technology lifecycle **O:** Nurse satisfaction [with the ability to effectively use and integrate technology into the nursing process], nursing workload, nurse competence [with using technology], nurse confidence [with using technology], interprofessional collaboration.	Upon further discussion, the expert panel determined this to be a good practice area, as they noted there is linked evidence (e.g., seminal studies, reports, or grey literature that is difficult to collect and summarize) to reflect this practice. **Good practice statement 3.0:** It is good practice that nurses and health providers be actively involved and engaged in the procurement, adaptation, adoption and implementation of digital health technologies when used in clinical practice.
7) Should embedding digital health competencies into nursing entry-to-practice exams be recommended?	**P:** Any nurses writing entry-to-practice exams **I:** Embedding digital health competencies into entry-to-practice exams **C:** Not embedding digital health competencies into entry-to-practice exams	n/a	Upon further discussion, the expert panel determined this to be a good practice area, as they noted that there is lots of linked evidence (e.g., seminal studies, reports, or grey literature that is difficult to collect and summarize) to reflect this practice. Embedding

	O: Nurse competence [with using technology], Nurse confidence [with using technology], Nurse experience of entry to practice.		competencies is a known standard of practice for many health professions. **Good practice statement 6.0:** It is good practice that regulatory bodies embed digital health competencies into nursing and health provider entry-to-practice exams.

Table 2: Additional Good Practice Statements

Good Practice Statement 1.0: It is good practice that nurses and health providers complete an initial assessment, and on an ongoing basis as needed, of the skills, preferences and capacity of persons and families and the suitability of the digital health technologies being used in care.	This is a good practice statement that does not receive a GRADE rating of the certainty of the evidence or strength.
Good Practice Statement 2.0: It is good practice that nurses and health providers provide education to persons and families related to the digital health technologies being used to deliver care.	This is a good practice statement that does not receive a GRADE rating of certainty of evidence or strength.
Good Practice Statement 4.0: It is good practice that organizations provide nurses and health providers with protected time for education related to the digital health technologies being used to deliver care.	This is a good practice statement that does not receive a GRADE rating of certainty of evidence or strength.
Good Practice Statement 5.0: It is good practice that organizations implement policies related to digital health technologies to protect privacy, security, and confidentiality.	This is a good practice statement that does not receive a GRADE rating of certainty of evidence or strength.