



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.

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

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

Table 1: Overview of Recommendation Questions and Good Practice Statements





	O • Nurse competence [with	O • Nurse competence [with	
	using technology] nurse	using technology] nurse	
	acceptance of technology	acceptance of technology	
	nurse sensitive outcomes (falls	nurse sensitive outcomes (falls	
	pressure injuries pain) purse	pressure injuries pain) purse	
	involvement in the technology	involvement in the technology	
	life avala ware confidence	life avala ware confidence	
	inecycle, nurse confidence	inecycle, nurse confidence	
	[with using technology], nurse-	[with using technology], nurse-	
	person therapeutic relationship.	person therapeutic relationship.	
Should education about	P: All nurses practicing in	P: All nurses <i>and other health</i>	Recommendation statement 2.0:
elational care and	virtual care settings or in-	<i>providers</i> , and persons	The expert panel suggests that
nterpersonal communication	person digital health	receiving care.	health-service and academic
kills be recommended or not	environments, and persons	I: Comprehensive education	organizations provide ongoing
or nurses practicing in	receiving care	about relational care and	education to nurses and health
virtual care settings and in-	I: Education about relational	interpersonal communication	providers that focuses on
erson digital health	care and interpersonal	skills (<i>in general</i> , or specific to	interpersonal communication skills
environments?	communication skills [specific	digital health technologies).	when using digital health
	to digital health environments]	C: Standard education (or no	technologies.
	C: No education about	education) about relational care	(Conditional)
	relational care and	and interpersonal	
	interpersonal communication	communication skills.	
	skills [specific to digital health	O: Person, caregiver or	
	environments]	family's experience or	
	O: Person/caregiver/family	satisfaction with care received,	
	experience or satisfaction,	nurse competence [with using	
	nurse competence [with using	technology]. nurse confidence	
	technology], nurse confidence	[with using technology]. nurse-	
	[with using technology]. nurse	person therapeutic relationship.	
	-person therapeutic	person, caregiver or family	
	relationship person/caregiver/	involvement and engagement	
	family involvement and	in care.	
	engagement in care	in cure.	
	hould education about elational care and nterpersonal communication kills be recommended or not or nurses practicing in irtual care settings and in- erson digital health nvironments?	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.hould education about elational care and nterpersonal communication ror nurses practicing in irtual care settings and in- erson digital health nvironments?P: All nurses practicing in virtual care settings or in- person digital health environments, and persons receiving careI: Education about relational care and interpersonal communication skills [specific 	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.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.hould education about elational care and intrue care settings and in- erson digital health environments?P: All nurses practicing in intrual care settings or in- person digital health environments, and persons receiving careP: All nurses and other health providers, and persons receiving care.I: Education about relational care and interpersonal communication skills [specific to digital health environments]P: All nurse settings or in- person/caregiver/family experience or satisfaction, nurse competence [with using technology], nurse- or setsfaction, nurse competence [with using technology], nurse- or setsfaction, nurse competence [with using technology], nurse- or satisfaction with care received, nurse competence [with using technology], nurse- person therapeutic relationship, person/caregiver/ family involvement and engagement in care.O: Person, caregiver or family involvement and engagement in care.





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





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





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. 	 satisfaction with care received, nurses are able to define what their role is [within the distributive model]. 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], 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	competencies is a known standard of practice for many health
technology], Nurse experience	professions.
of entry to practice.	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:	This is a good practice statement that
It is good practice that nurses and health providers complete an initial assessment, and	does not receive a GRADE rating of the
on an ongoing basis as needed, of the skills, preferences and capacity of persons and	certainty of the evidence or strength.
families and the suitability of the digital health technologies being used in care.	
Good Practice Statement 2.0:	This is a good practice statement that
It is good practice that nurses and health providers provide education to persons and	does not receive a GRADE rating of
families related to the digital health technologies being used to deliver care.	certainty of evidence or strength.
Good Practice Statement 4.0:	This is a good practice statement that
It is good practice that organizations provide nurses and health providers with protected	does not receive a GRADE rating of
time for education related to the digital health technologies being used to deliver care.	certainty of evidence or strength.
Good Practice Statement 5.0:	This is a good practice statement that
It is good practice that organizations implement policies related to digital health	does not receive a GRADE rating of
technologies to protect privacy, security, and confidentiality.	certainty of evidence or strength.