Provincial Health Services Authority

Office of Virtual Health
Practice and Education

Literature Review Summary:

Virtual Health Competencies

July 2022

Table of Contents

Acknowledgement

PHSA's main office is located on the unceded, ancestral, and occupied, traditional lands of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish) Nations.

We wish to acknowledge with gratitude that this report will be received on the traditional, ancestral and unceded territories of many BC First Nations who have cared and nurtured this land for all time and give thanks for allowing us as visitors to live, work and care together.

We also acknowledge that there are other Indigenous people that live on these lands that originate from their own respective territories outside of these lands, the Chartered Communities of the Métis Nation B.C., and Inuit.

1. Introduction

The purpose of this review is to gain insight from the existing literature on the knowledge, skills and attitudes recommended to provide quality virtual health care. The evidence-based recommendations will then inform the development of a PHSA virtual health competency framework which will serve to support practice and education of all health care providers engaged in virtual care within PHSA.

The literature search strategy included searching MEDLINE and gray literature using key search terms: clinical competence; professional competence; telemedicine; best practice; and framework. The search was limited to the past 5 years and English language only. Forward and backward reference searching of citations in highly relevant papers was also completed. Inclusion criteria included a focus on developing or recommending virtual health competencies or developing education to deliver virtual health competencies. The review did not assess articles for quality.

While limited in numbers, examples of virtual health competency frameworks for health care providers from allied health to nursing to medicine do exist (See Appendix A). A number of articles describe the robust and rigorous process (1–11) while others propose recommendations based on virtual health experience and profession-specific competency work (12, 13). An important component of the process for some frameworks included community, patient and/or family engagement (1, 2). A common theme presented across all frameworks is the need to develop standard competencies in virtual care to support best practice, enhance quality of care and serve as the foundation to building professional virtual health capacity within academic and practice settings (1, 2, 12).

2. Key Findings

The literature review revealed themes in virtual health competency across the spectrum of journal articles, systematic reviews, practice guidelines, major reports and profession-specific position statements. To support translation of knowledge to practice, the key findings presented here are organized such that each heading represents a domain relevant to the development of the PHSA's Virtual Health Competency Framework. Within each section, the findings from the literature that expand upon the competencies recommended to support best practice in the specified area are discussed.

It is important to note that the recommended domains reflect the stages of the process required to provide safe and accessible virtual health care. Starting from consideration of the foundational policies, guidelines and infrastructure needed, to the appropriate use and delivery of virtual care services, and finally, the evaluation and improvement of virtual care encounters. The domains are also familiar to other profession-specific competency and health care system frameworks identified in the literature (see Appendix A). They reflect the main domains recommended for health care professional core competencies as outlined by Al Jabri et al (14) in their systematic review of core competency tools.

2.1 Legal, Regulatory and Workplace Policies

It is clear in the literature that most proposed competency-based frameworks recommend providers begin their engagement with virtual care by ensuring they are aware and knowledgeable of the legal, professional, and practice regulations, policies and guidelines supporting the work (1, 2, 10–13). It is also important to have the ability to identify concerns with regulatory issues that could cause fragmented care and ultimately impact quality of care (15). As outlined in PHSA's Virtual Health Policy and OVH Handbook, the standard of care of virtual health must be equivalent to or better than in-person visits as per respective professional standards.

Explains how legal and professional practice regulations inform and guide delivery of virtual health care.

Applies virtual health practice policies and guidelines to identify concerns and recognize opportunities for safe and effective virtual health care.

2.2 Quality, Safety Privacy, Security, Access and Interoperability

While the design of technological tools is not typically in the sphere of health care providers practice, the literature did discuss the importance of having health care providers, patients and their families be a part of the design process (3, 6, 16, 17) to improve quality of care. To support this, access to population-level data to inform the co-design virtual care process appropriately is important (6, 17).

It was also highlighted that to support culturally safe care, a participatory approach is needed to support engagement with community to understand social structures, norms, cultural beliefs and health practices and gain a shared perspective on what is needed and what outcome is desired for the virtual health intervention. This engagement is recommended throughout the design process (16).

Finally, advocating for access to the technological infrastructure needed to engage with virtual care was highlighted as a role both health care systems and providers need to embrace (6). As described in more detail below (Section 2.3), an equity-oriented analysis will improve the planning process of establishing the right technology to support safe, accessible, and effective virtual health care.

Applies relevant principles of patient and community engagement and participatory approaches to inform design and adoption of virtual health tools.

Supports advocacy efforts and leverages resources to promote increased accessibility for technological infrastructure.

The approach to integration of technology is an important consideration to quality care (9). As discussed by Perry et al (6), health care teams should avoid simply implementing telemedicine technology on top of current systems, rather, fully integrating telemedicine requires a broader look at delivery of services and shifting the entire system appropriately. Additionally, awareness and consideration of functionality and interoperability issues when choosing a tool are important. A tool needs to be easy to use and fit into the clinical workflows. If it doesn't, it can create a significant burden for HCPs and risk the quality of care provided (18).

Applies implementation science approaches to integrating virtual health tools into the clinical setting.

When discussing integration of technology, it is of course important that health care providers adopt a positive attitude towards the use of virtual health platforms and that they develop the knowledge and skills to trouble-shoot challenges with the technology when using it in their practice (8). Perry (6) discusses the impacts of human factors on system designs, outlining foundational principles for reliable and safe virtual health programs, some of which include standardization and simplification in design and ensuring the provider and the patient are prepared to use the technology.

Demonstrates leadership in virtual health by adopting a positive attitude towards virtual health opportunities and challenges.

Finally, the health care provider needs to have the knowledge of how to ensure the tools incorporated into clinical practice maintain the privacy, security and safety of patient data (9). Having a baseline understanding of the safety of digital tools and that they received formal certification by independent 3rd parties is a consideration for the adoption of technology into practice (18). Additionally, knowledge and skill in appropriate documentation to ensure adequate charting and that the information is available to patients and their caregivers and/or for medical auditing is a fundamental component of quality care (19).

Demonstrates awareness of the privacy, security and safety data of the virtual health tools adopted in the clinical setting.

Integrates into practice the appropriate virtual health documentation standards to ensure quality care.

2.3 Equity and Ethical Standards

With the rapid expansion of virtual health due to the pandemic, it is clear there are research gaps on virtual health care outcomes. However, the literature does offer recommendations on key elements to consider in choosing the appropriate model of care to support safe, equitable, patient-centred care (6, 13).

For example, Totten et al (20) in their systematic review highlighted that the discussion on the right mode of care for the right patient for the right issues is more clear in certain clinical areas, such as among monitoring chronic conditions or providing psychotherapy, than others, such as the ICU, maternal and child health settings. The Doctors of BC position statement (15) also recommends that virtual health is often best used to complement in-person care, not replace it, with patients engaged in longer term relationships with their health care providers. It was also noted by Honey et al (21) that the adoption of telehealth was more successful among experienced nurses which reveals factors related to provider comfort and ability to combine clinical experience with virtual care as important considerations (8). Ultimately, when making the decision on the appropriateness of virtual care, the patient and the provider need to consider if the virtual platform will be safe and improve care delivery (22). Across the literature, it was identified that, to maintain patient and family-centred care, virtual health programs should honour the patient/family preferences as long as it is deemed clinically safe (1, 3, 6).

Demonstrates the knowledge and judgement to determine if a virtual health visit will complement, enhance or fragment overall care for the client.

Another significant element to consider in the decision-making process is equity. Virtual health visits often appeal to both the health care provider team and their patients and families primarily due to their convenience. However, a more holistic assessment is needed, one that can be guided by adopting an equity-oriented perspective. The knowledge and skills required include an assessment of barriers and cultural safety considerations, which vary depending on the client and the context. For example, while a virtual visit is cost-saving for the patient related to travel and time, it could negatively impact their care due to poor internet connectivity, lack of access to a computer or phone or lack of privacy.

Integrates principles of health equity and cultural safety to determine if virtual care can improve access or exacerbate barriers to health care.

Additionally, the ability to consider culturally safe care when determining the model of care is vital. As described in Section 2.2, a shared perspective on what is needed and what outcome is desired for the virtual health intervention is important to determining if it is an appropriate platform to use.

Demonstrates cultural humility and sensitivity in virtual health practice and respects community, family and patient perspectives in determining access and appropriate use of virtual health care.

Finally, the literature was clear that trust and transparency are integral aspects of choosing the appropriate model of care and fostering ethical practice. As Chae et al (23) described, trust and ethics in telehealth need to include fidelity, competency, transparency and informed consent, privacy and confidentiality, and continuity of care. The concept of informed consent and risk disclosure requires close attention as it can be difficult to navigate (6, 24). It's important that health care providers have the knowledge and skills to provide information on risk to support an informed decision by the patient requesting a virtual health visit (1, 2, 6, 8, 13), especially when the virtual visit isn't appropriate, for example, if an in-person physical assessment is indicated based on the patient's concerns. Providing clear disclosures requires strong communication skills and if done well, it builds trust (19). It also allows the health care provider the opportunity to enhance patient's digital health literacy capacity, which also improves equity and quality of care (22).

Demonstrates the ability to discuss the risks and benefits associated with a virtual health care to support informed decision-making by the patient and family.

Ethics in decision-making is quite relevant when considering the impact of reimbursement schedules for models of care. It is important to emphasize that financial benefits should not play a role in clinical decision-making and it is imperative that the health care system addresses this risk. Fee-for-service should not impact the overuse or inappropriate use of either in-person or virtual care (13, 19).

Demonstrates awareness of the risks and rewards associated with reimbursement structures on program and clinical decision-making in delivering virtual care.

2.4 Delivering High-Quality Virtual Health Visits

While some argue that many virtual health clinical competencies are not novel competencies, rather, they are required in all health care encounters, there are some key competencies to examine when delivering virtual care.

The main competency discussed in the literature is clear communication (6, 11, 21, 24–27). Being prepared and outlining the purpose of the virtual health visit at the start of the session and summarizing key points and recommendations at the end of the session are key skills (7, 9, 26, 27).

Recommendations also included engaging in strategies such as teach-back and self-reflection as they have been shown to promote confidence and competence among health care providers in the virtual environment (6, 25–27). Additionally, specific skills such as active listening, asking both open-ended questions and focused questions to elicit more information on a concern, paraphrasing, avoiding information overload and medical jargon, and using motivational interviewing techniques were identified as effective communication skills (6, 8, 26, 27).

Awareness of the different communication strategies required for synchronous, asynchronous and in-person communication was also found to be important (1, 11, 28) to a successful virtual experience.

Finally, Coleman (26) recommends a health literacy universal precautions approach, which assumes that all patients might be at risk for misunderstanding and miscommunication therefore maintain the same level of plain language and clear communication across all virtual health encounters.

Communicates clearly and professionally in the virtual heath environment.

Demonstrates knowledge and skill in applying effective and evidence-based communication strategies to improve the virtual health visit.

Successful integration of virtual health platforms into the clinical setting, as described in Section 2.2, will augment the health care provider's ability to transfer their clinical assessment skills from an in-person to a virtual health visit (8). To prepare the provider for the transition, the literature highlighted the following clinical competencies as important to providing high-quality virtual care: the development of keen observation and analytical skills and the capacity to interpret non-verbal and verbal expression appropriately during videoconferencing; creativity skills such as inviting patient to demonstrate health-related behaviours in the home (e.g. walk up stairs) or inviting, with the patient's permission, a family member or home care nurse to provide clinical input; promote literacy skills such as using videos and other materials to support teaching, and having the knowledge and skill to identify and escalate care for emergencies (1, 6–8, 26, 27, 29).

Demonstrates the knowledge and skills needed to safely and effectively complete a clinical assessment in the virtual health setting.

Other recommendations included the capacity to engage in coaching skills, a supportive attitude and have the capacity to express empathy in the virtual health environment (8, 27). The literature (3, 6, 7, 22, 29) also emphasized the need to foster the digital health literacy of patients and families during the clinical encounters by offering basic trouble-shooting and performance tips and to optimize the experience. This could include tips to enhance privacy (e.g. blurred backgrounds) or improve sound (use of headphones).

Recognizes and responds to the emotional, psychological, social and physical needs of the patient during the virtual health visit.

Anticipates, identifies, manages and optimizes technological issues for health care providers and patients, as appropriate.

2.5 Monitoring and Evaluating Services and Continuous Professional Development

Virtual health has been rapidly adopted in the past 2 years by many health care providers and patients due to the COVID-19 pandemic. This widespread uptake of virtual care offers a great opportunity to now take a step back and measure and evaluate the impact and sustainability of this model of care. As others have recommended, not only for local quality improvement initiatives, but also to contribute to the broader literature on quality and safety in virtual care (3, 6, 7, 9, 11).

Telehealth evaluation frameworks were suggested by both Rutledge (9), with their 4P's of Telehealth approach and their recommendation to consider the "National Quality Forum" framework to evaluate telehealth programs, and Perry (6), who recommend the Plan-Do-Study-Act cycle as outlined by the Model for Improvement. In addition to evaluation frameworks, the literature review also identified certain attitudes and behaviours that facilitate quality improvement work, such as the ability to be adaptive and flexible and eager to adopt new virtual health technologies and approaches if they have potential to improve quality of care (3, 13).

Demonstrates the knowledge, skills and attitude to monitor and evaluate virtual health care initiatives to contribute to quality improvement research.

Health Canada's report (17) on enhancing equitable access recommended providers be competent to deliver equitable virtual care. A health equity review by Shaw et al (22) provides insight on how this can be achieved, with recommendations to embrace a health equity analysis in evaluation, simplify complex interfaces and workflows, and build virtual health support teams to foster patient digital literacy and create evaluation processes that engage marginalized community members to inform planning and delivery of virtual care. To achieve this, investments in educational programs to support providers' ability to engage in equity work, such as anti-racism and anti-oppression initiatives will facilitate delivery of equitable virtual health care.

Integrates equity and cultural safety work into the development and evaluation of virtual health care initiatives.

The same Health Canada report also recommended leveraging best practice in virtual education from other countries. Overall, the literature highlighted that virtual health competency education is needed and makes a difference (21, 30) and that it should be provided in multiple formats, delivered with adult learning principles with an emphasis on both didactic and simulation methods applied, and that it could be offered in coordination with other types of education and in an interprofessional environment (3, 7, 9, 13, 29) but that training specific to each clinical setting is important (31). Hands-on training, telehealth etiquette, specialty experience & clinical assessment, mentorship and understanding the technology all support proficiency in telehealth nursing (9, 21).

The benefits of group-based discussion were outlined by (25) Morony as midwives in their study appreciated the learning opportunities available from self-reflection and hearing about others experience applying the Teach-Back method. Another study describing medical students experience with telehealth curriculum recommend deconstructing components of the virtual health visit (e-consults, interprofessional teleconferencing, televisits) to support providers gaining proficiency in specific tasks (28).

Reviews and applies best practice professional education strategies to staff training and development sessions.

3. Conclusions

Competency-based virtual health practice and education is needed to support safe and quality virtual health care. The process of competency framework development should be clearly outlined, evidence-based and equity-oriented and engage the appropriate stakeholders, including patient representatives, to ensure an outcome that is applicable to all providers and can be adapted for clinical or professional settings. The rapid evolvement of this model of care requires practice and education embrace an iterative design such that as new evidence emerges, the framework can be updated to reflect best.

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5. Appendix A

Summary of Key Virtual Health Competency Frameworks

RESOURCE	DOMAINS	COMPETENCIES
Expert Consensus: Telehealth Skills for Health Care Professionals (Galpin, 2021) Methods: Delphi process, 6 rounds, SME, informed the development of AAMC Competencies for Medical Students Year: 2021	9 Domains 1.Using Telehealth: Patient and Practice Readiness and Impact 2.Remote Clinical Evaluation and Care 3.Communicating using Telehealth 4.Professionalism 5.Information Technology 6.Privacy and Legal 7.Ethics 8.Patient Safety 9.Access and Equity	Each Domain includes a statement that captures the essence of the domain, followed by a list of skills. Example: Domain 9: Access and Equity An understanding of telehealth delivery that promotes equitable access, addresses and mitigates cultural biases, and accounts for non health-related community needs and limitations. Skills: 1. Assess patients' needs, preferences, and potential cultural, social, and linguistic barriers when considering telehealth. 2. Evaluate personal biases and their implications when considering telehealth. 3. Evaluate how technology can mitigate and/or exacerbate health inequity and socioeconomic gaps in access to care.
Association of American Medical Colleges (AAMC) **Competencies in Telehealth** Methods: 18 months, Telehealth Advisory Committee Year: 2020	6 Domains 1.Patient Safety & Appropriate Use of Telehealth 2.Access and Equity in Telehealth 3.Communication via Telehealth 4.Data Collection and Assessment via Telehealth 5.Technology for Telehealth 6.Ethical Practices and Legal Requirements for Telehealth	Use 3 tiers that represent developmental stages in physician development 1.Entry to residency or recent med grad 2.Entry into practice or recent residency grad 3.Experienced faculty physician or 3-5 years post-residency

RESOURCE	DOMAINS	COMPETENCIES
Development of a digital competency framework for UK Allied Health Professionals Methods: 1 year, part of Topol Review; Panel of 40 Allied Health Professionals Year: 2020	10 Domains: 1.General; 2.Data Management & Clinical Informatics; 3.Records, assessments & plans; 4.Transfer of Care; 5.Medicines management and optimisation; 6.Orders and results management; 7.Assets and resource optimisation(business & personal); 8.Decision support; 9.Digital therapeutics; 10.Meta-competencies	Examples of Profession-Specific Frameworks: Dietetics, Occupational Therapy, Physiotherapy. Each framework offers 8-10 specific competencies for each domain.
Digital Literacy Capabilities Framework (NHS) Methods: 12 months, stakeholder engagement Year: 2018	6 Domains 1. Communication, collaboration and participation 2. Teaching, learning and self-development 3. Information, data and content literacies 4. Creation, innovation and research 5. Technical proficiency 6. Digital identity, wellbeing, safety and security Domain #6 underpins all the above	4 levels identified across the 6 domains Level 1: I know Level 2: I can Level 3: I am confident Level 4: As an expert user

RESOURCE	DOMAINS	COMPETENCIES
Telemedicine: Ensuring Safe, Equitable, Person-Centred Virtual Care (Perry et al) **IHI White Paper** Methods: Panel of experts from around the world Year: 2021	6 Elements 1.Access 2.Privacy 3.Diagnostic Accuracy 4.Communication 5. Psychological and emotional safety 6. Human factors and system design	
Core Capability Framework for Physiotherapists (Davies et al) Methods: Delphi Process, International Delphi panel Year: 2021	6 Domains 1. Compliance 2. Patient privacy and confidentiality 3. Patient safety 4. Technology skills 5. Telehealth delivery 6. Assessment and diagnosis	
Competencies required for nursing telehealth activities: A Delphi-study (van Houwelingen et al) Methods: Delphi, 51 experts, 361 representatives Year: 2015	14 EPA's (tasks)	52 Competencies • Core Competencies: coaching skills, the ability to combine clinical experience with telehealth, communication, skills, clinical knowledge, ethical awareness, and a supportive attitude

RESOURCE	DOMAINS	COMPETENCIES
Telehealth competencies for Nursing Education and Practice: The Four P's of Telehealth (Rutledge et al) Methods: modified Delphi-study, 59 APN, 1 year, strict criteria Year: 2021	4 P's of Telehealth Framework: • Planning – for the implementation of a telehealth program • Preparing – the process of readying for telehealth implementation • Providing – delivering telehealth services • Performance Evaluation – evaluating the impact and outcomes of the telehealth program	Planning: - Telehealth definitions - Target populations/settings - Target health care issues Preparing: - Consent and confidentiality - Equipment, tech, space - Skillset Providing: - Beginning: setting the stage - Middle: conducting - End: Wrap-Up Performance Eval: - Access - Financial impact - Patient/Provider Experience - Effectiveness

RESOURCE	DOMAINS	COMPETENCIES
An Interprofessional Framework for Telebehavioral Health Competencies (Maheu, Hilty, et al) Year: 2017	7 topic domains 5 subdomains 1. Clinical Evaluation and Care, with three subdomains addressing Assessment and Treatment, Cultural Competence and Diversity, and Documentation and Administrative Procedures; 2. Virtual Environment and Telepresence; 3. Technology; 4. Legal and Regulatory Issues; 5. Evidence-Based and Ethical Practice, with two subdomains addressing Standards and Guidelines and Social Media; 6. Mobile Health and Apps; and 7. Telepractice Development.	51 Telebehavioral Objectives 149 Telebehavioral Practices Across 3 Competency Levels: Novice to Proficient to Authority
BC Telehealth Clinical Guidelines Year: 2019	• duty of care; • program suitability; • ethics; • client suitability; • informed consent; • protecting client privacy and confidentiality; • client identity; • documentation and client records; • quality measurements	

RESOURCE	DOMAINS	COMPETENCIES
It's not just FaceTime: Core Competencies for the Medical Virtualist (Sharma et al) Year: 2019	3 Domains: 1. Digital communication and web-side manner 2. Scope and Standards of Care 3. Virtual Clinical Interactions	1a. Optimal visualization, body language and speech 1b. Graphic-assisted communication 1c. Virtual technologies 2a. Licensing 2b. Billing & Insurance 2c. HIPAA compliance 2d. Prescribing 2e. Virtual Care Pathways 3a. Environmental assessment 3b. Virtual physical exam 3c. Group interactions
Principle-driven virtual care practice to ensure quality and accessibility (Ho et al) Year: 2020	4 principles differentiate virtual care from in-person practice: 1. Clinical 2. Medicolegal 3. Andragogic 4. Social	

OTHER	
A systematic review of healthcare professionals' core competency instruments Methods: Evaluation and assessment of core competencies Year: 2021	All these reviewed instruments measured important themes of core competencies that include: • professionalism • ethical and legal issues, • research and evidence-based practice, • personal and professional development, • teamwork and collaboration, • leadership and management, • patient-centered care, • quality improvement, • safety, • communication, and • Health Information Technology (HIT)
Royal College of Canadian Medical Education Directives CanMEDS is a framework that identifies and describes the abilities physicians require to effectively meet the health care needs of the people they serve.	Framework: • Medical Expert (the integrating role) • Communicator • Collaborator • Leader • Health Advocate • Scholar • Professional