Development of an Orientation Toolkit for the Eastern Health Remote Patient Monitoring Program

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Abstract

Background: The Eastern Health (EH) Remote Patient Monitoring (RPM) Program identified the need to develop an electronic orientation toolkit for the orientation of newly hired staff members. Materials previously existed for orientation; however, a more robust toolkit was required as the original information was limited and not available electronically

Purpose: To develop an electronic orientation toolkit for the EH RPM program.

Methods: The four methods were: 1) **i**ntegrated literature review, 2) **c**onsultations with the EH RPM team members via semi-structured interviews, 3) an environmental scan conducted with other RPM programs in Canada via email, and 4) development of an orientation toolkit.

Results: The need for an orientation toolkit and the content to include was confirmed by completing an integrated literature review, an environmental scan, and consultations with EH RPM staff members. Specific competencies identified were enhanced communication skills, computer and technology skills. Orientation to these competencies was also identified as essential to fulfilling daily duties. Based on these findings, an orientation toolkit was developed. The toolkit consists of five modules: 1) Introduction to orientation, 2) Introduction to Remote Patient Monitoring, 3) Computer Technology, 4) Educational Components, and 5) Virtual Presence. Each module contains learning objectives, program information, checklists, and reflection exercises. All newly hired staff members must complete these modules, along with simulation activities and other learning activities with their mentors.

Conclusion: The orientation toolkit will orient all newly hired staff members to the EH RPM program and promote a comprehensive and consistent orientation for all new employees.

Key Words: *Orientation, Telehealth Nursing, Remote Patient Monitoring, Virtual Care*

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Introduction

Remote Patient Monitoring (RPM) is a health monitoring term covered under a broader definition of telehealth (Ali et al., 2015); Fronczek et al., 2017). Comprehensive education and training related to telehealth are essential for delivering professional telehealth activities (Carius et al., 2016; van Houwelingen et al., 2016). The development of an orientation toolkit was identified as a priority by the Eastern Health (EH) RPM program to provide a comprehensive and consistent orientation to newly hired nurses. It is essential that nurses who begin working in RPM become confident and competent in telehealth nursing skills.

An integrated literature review, environmental scan, and consultations with members of the EH RPM program were completed to validate learning needs. Completing these processes allowed for the collection of information and ideas regarding what needs to be included in an orientation toolkit for this field of nursing. Using the information identified through these methods, an orientation toolkit specific to the needs of this program was created. The developed toolkit includes five modules that a newly hired staff member is expected to complete during their four week orientation period. Knowles Adult Learning Theory was used to guide the development of these modules as the theory focuses on integrating personal and professional experiences to foster learning, and Benner's Novice to Expert Theory was utilized to individualize the learning process.

This practicum report provides an overview of the project's objectives and the methods undertaken, followed by a discussion of the key findings from the literature review, consultations, and environmental scan. A description of the developed resource will be provided,

as well as the Advanced Nursing Practice (ANP) Competencies demonstrated during its development. This report will conclude with a plan for the next steps.

Objectives

The purpose of this practicum project was to develop an electronic orientation toolkit for all newly hired staff who are deployed or hired to work with the Eastern Health Remote Patient Monitoring Program.

The practicum objectives were to:

1. Identify the need for orientation, content, and strategies for the area of remote patient monitoring;
2. Assess the learning needs of nurses new to the Remote Patient Monitoring Program at Eastern Health;
3. Identify the content of other nursing orientation manuals and resources utilized by nurses in other remote patient monitoring programs throughout Canada;
4. Develop an orientation toolkit for all newly hired nurses who work within the Remote Patient Monitoring Program at Eastern Health;

   and
5. Demonstrate advanced nursing practice competencies.

Overview of Methods

For the development of this practicum project, three primary methods were used to obtain relevant information. An integrated literature review, consultations with staff members working within the EH RPM program, and an environmental scan that involved contacting other RPM programs in Canada were completed. Each method provided valuable information and ideas related to items and processes to include in the EH RPM orientation toolkit. The literature review

and literature summary tables are included in Appendix I, the consultation report is included in Appendix II, and the environmental scan is included in Appendix III. A detailed summary of each method is presented below.

Summary of the Literature Review

The integrated literature review involved searching PubMed and CINAHL for English language studies published between 2000 to 2020. Of the articles retrieved, few focused on nursing orientation needs in this setting. A broader search was conducted to retrieve articles regarding nursing attitudes, nursing experiences, and patient experiences within telehealth. It was believed these terms would provide outcomes relevant to knowledge and education needs. Additionally, a search was conducted in other nursing areas to retrieve articles related to educational strategies to use during the orientation process, as some common themes, such as mentorship, exist in several areas of nursing orientation. The literature review identified key themes to include in telehealth technology orientation. The full literature review is found in Appendix I.

Need for Orientation

Several key results were identified from the integrated literature review. First, an identified need for orientation in this area of nursing exists as there appears to be a lack of telehealth education provided to nurses. Often nurses begin careers in telehealth with no additional formalized training (Honey & Wright, 2018; Carter et al., 2010). The lack of education begins with minimal telehealth exposure and experience provided in undergraduate programs. This concern continues into the employer setting, where there is a lack of employer-led professional development for telehealth nursing.

Additionally, there exists a shift in the nurse-patient relationship. Studies have found that

nurses experience the loss of human touch and personal contact when communicating with patients strictly through technology (Green et al., 2016; Sharma & Clarke, 2014; Tuxbury, 2012). Nurses and other telehealth experts have identified experiencing the loss of physical touch working in this setting. The development of a nurse-patient relationship is unique to this setting, as all interactions are completed through technology. It was found that it is important to consider educating and preparing nurses for this different way of providing nursing care. Also, this setting presents the need for different privacy and confidentiality parameters when sharing patient information virtually. It is important to provide education to ensure these legislated safeguards are maintained in the telehealth setting.

Skills and Competencies Needed

Findings suggested the need for specific skills and competencies when working in the field of telehealth nursing. Studies have frequently recommended that enhanced communication skills are essential for telehealth nursing (Carius et al., 2016; Carter et al., 2010; Henry et al., 2017; Honey & Wright, 2018; Knudsen et al., 2018; van Houwelingen et al., 2016). Studies have also recommended that technology and computer skills are important in telehealth nursing (Basu et al., 2010; Carter et al., 2010; Green et al., 2016; Sharma & Clarke, 2014). Communication skills in the telehealth environment require more than basic competency. Enhanced verbal communication skills are required to ensure nurses can address problems and challenges, support emotionally stressed patients, and engage them in this avenue of health care. Engaging the patient has been found to be achieved by using open-ended questions, and one option found within the telehealth setting was Motivational Interviewing (MI). MI skills have been adapted for use in telehealth technology and can enhance nursing communication skills and help patients achieve personal goals related to chronic disease self-management.

Additionally, technology and computer skills are required to coordinate patient care and to rectify issues through collaboration with the patient through technology. It is therefore important to determine the newly hired nurse's computer literacy level. Training may be required on basic competencies before in-depth telehealth technology training. Additionally, a technical skill identified in the field of telehealth nursing is troubleshooting. Nurses need to adjust their workflow and support their patients when technical issues occur and need to have proficient computer skills to handle technical difficulties (Carter et al. 2010; Sharma & Clarke, 2014). It is important to recognize that patients are concerned and anxious about learning how to use technology. When this occurs, nurses need to be confident and proficient to assist patients and alleviate technological issues given the identified patient concerns.

Educational Strategies

Telehealth educational strategies identified in the literature review included simulation, online learning, and mentorship (Badowski et al., (2019); Basu et al., 2010; Gifford et al., 2012; Green et al., 2016; Honey & Wright, 2018). Research involving teaching and learning in other nursing programs was also explored to identify orientation methods, and it was found that mentorship, E-learning, and simulation based training were important. (Bramer et al., 2020; Bulut et al., 2010; Hegland et al., 2017; Pasila et al., 2017; Rasheed et al., 2020; Strauss et al., 2016).

Positive orientation experiences result from a balance between classroom teaching and clinical training, support from the preceptor, and an individualized orientation (Pasila et al., 2017). Additionally, it was found that a structured orientation program and a professional preceptor who was supportive and knowledgeable contributed to a positive orientation experience (Strauss et al., 2016). Therefore, it was important to develop a comprehensive,

structured toolkit to provide the newly hired nurse with the ability to individualize orientation to their learning needs. Mentorship was also included and explained in the toolkit, as the program utilizes a shared mentorship model that involves all RPM nurses who provide patient care, sharing the responsibility of mentoring the newly hired nurse. The newly hired nurse would spend time during the orientation period being mentored by each RPM nurse.

Simulation based training is another important educational strategy identified in the literature for telehealth education. According to Hegland et al. (2017), simulation based training effectively improves nurses' skills compared to other learning. Within telehealth nursing, simulation based learning focuses on using computer software to provide a test or practice site. This is important as it allows the nurse to become familiar with using the various technology platforms before monitoring and caring for actual patients. Time was, therefore, allotted during orientation for the newly hired nurse to participate in simulation based learning.

E-learning is another educational strategy identified in the literature. E-learning has been interchangeably used with web-based learning, online learning or education, computer-based instruction, technology-enhanced learning and virtual learning (Regmi & Jones, 2020). Several types of E-learning were incorporated in the toolkit development. Mentorship, as well as education sessions completed by outside vendors, are arranged and completed virtually through the Microsoft Team platform. Additionally, both the organization and program vendor's mandatory self-paced learning modules are all located electronically and hyperlinked within the orientation toolkit.

Guiding Theoretical Frameworks

Nursing theory has been defined as a “conceptualization of nursing to describe phenomena, explain relationships, predict consequences, or to establish nursing care” (Fronczek,

2019, p.36). Two theoretical frameworks were applied in the development of this orientation toolkit for the EH RPM program. First, concepts from Knowles' Adult Learning Theory (ALT) (1978), which focuses on gaining knowledge and meaning through experiences and integrating personal and professional experiences to foster learning, were incorporated (Candela, 2016). A self-assessment competency checklist was developed by applying principles from this framework. The self-assessment competency checklist will assess individual learning needs and provide a customized orientation for the newly hired nurse. Knowles (1978) also claimed that adults are more likely to learn if they perceive the information as personally relevant, essential and useful. By using a self-assessment competency tool, newly hired nurses will have input into their individualized learning plans.

Benner's Novice to Expert theory, which identifies five clinical nursing practice levels essential to consider when evaluating educational needs (Cooper, 2009), was also applied in developing this toolkit. Each level, from novice to expert, requires support explicitly related to the transition process. All new nurses will be considered novice within telehealth practice; however, past clinical experience will be incorporated, and orientation adjusted accordingly. Benner's Novice to Expert theory was used to develop this orientation toolkit as processes and tools within the toolkit focus on the newly hired nurses' previous knowledge and is designed to build on new knowledge.

Summary of Consultations

Consultations were completed with all nursing team members of the EH RPM program to identify their thoughts and ideas on what should be included in an orientation toolkit. All team members were interviewed in a group setting. Separate one-on-one interviews were conducted with the program manager, the team lead, and a newly hired nurse to discuss the practicum

project objectives and explore team members' needs, wants, experiences, and expectations related to orientation. All interviews were conducted through Microsoft Teams and recorded to verify notes taken during the interview process.

Key themes identified during these consultations were related to content and process. Content referred to all written material to be included in the toolkit, and process referred to all actions or steps a newly hired nurse would experience during the orientation period. All participants stated that the toolkit should contain a brief overview of the program and the chronic diseases currently being monitored. Participants also stated that chronic disease management training was important as the program's focus was on behavior management changes and supporting the patient to take ownership of their chronic diseases through self-management. The participants also viewed content related to the technology used and the computer skills required to work as an RPM nurse. Using the platforms to review biometric data, send a caring note to the patient, and begin a video call were all tasks identified as important training components. Computer skills related to different computer programs were essential to include as staff members must navigate these programs to meet role responsibilities.

Another important content item identified was motivational interviewing, which is a skill that assists the nurse in establishing a therapeutic relationship and supporting the patient in behavior modification as part of chronic disease self-management. Each newly hired nurse should receive motivational interviewing training, which can be arranged through the program vendor.

The EH RPM program staff members are also involved in program development and integration of the telehealth platform with other clinical services within EH and regional health authorities throughout the province. For these reasons, participants indicated that adult learning

principles and practical skills, such as developing a PowerPoint presentation, were important parts of the content to be included in the orientation toolkit.

Process focused on all feedback received related to ideas to be considered for inclusion in the EH RPM program's orientation process. All participants strongly voiced the need to focus on the virtual aspect of providing health care and, therefore, simulation and online learning are important educational strategies. They suggested that the continuation of current practices was important such as using Teams as a mentorship platform, practicing in the test system on the telehealth platforms, and practicing video calls with the mentor. Regular feedback from the mentor was viewed as important, as well as feedback from the manager at the end of the orientation period. Staff stated that continuous communication between the mentor and mentee helped to identify areas where additional training was required and suggested the development of checklists within the shared mentorship process to assist in the communication process.

Summary of Environmental Scan

An environmental scan, which included contacting four other RPM programs in Canada, was completed. These four programs were chosen in consultation with the program manager as she had established working relationships with these programs since the EH RPM program began in 2015. These programs were contacted through e-mail and asked if they had any orientation manuals or resources developed for staff members orientation and if they were willing to share them. A response was received from two programs, one in Western Canada and one in Central Canada. Both of these programs shared the information they currently use for orientation. Two common processes found in the information received involved education specific to using technology to deliver health services and education related to the specific chronic diseases these programs monitor. In addition, the Central Canada Program provided me

with resources on their training program, which included a clinical training curriculum and e-learning modules. The resources provided covered the topics of health coaching, resolving ambivalence, action planning and problem solving, behavior change approach and information security for telehomecare, which are all important considerations for orientation. I did not focus on the information received on education related to the specific chronic diseases these programs manage because during the consultations completed with members of the EH RPM team, it was found that education related to chronic disease was not a priority.

Summary of the Resource

The topics included in the developed orientation toolkit were based upon the information gathered through the literature review, consultations with staff and the environmental scan. The toolkit contains an overview of the orientation process, a master table of contents, an orientation schedule, and five learning modules, containing several subtopics and common items such as learning objectives and Pause and Think Questions. Modules also include checklists, practical tips, video links, further resources, and the opportunity to complete practice through simulation exercises. Knowles Adult Learning Theory was applied in the development of this toolkit as it focuses on gaining knowledge and meaning through experiences. These experiences include online learning, demonstrations from the mentor, and opportunities to complete return demonstration by the mentee. Additionally, Benner's Novice to Expert Theory, which identifies five clinical nursing practice levels essential to consider when evaluating educational needs (Cooper, 2009), was utilized to individualize the learning process. Newly hired nurses bring with them clinical experiences, which will be identified by completing the self-assessment checklist. Some competencies may require more education and training based on the nurses' past experiences. Applying this theory during the toolkit development provided newly

hired staff members with the ability to individualize the orientation to suit their identified learning needs. The five modules contained in the toolkit are:

- Module One: Introduction to Orientation
- Module Two: Introduction to RPM
- Module Three: Computer Technology
- Module Four: Educational Components
- Module Five: Virtual Presence

The completed toolkit can be found in Appendix IV, and each module will be briefly described next.

Module One: Introduction to Orientation

Module One provides an overview of the orientation process and what the newly hired nurse can expect during the four week orientation period. It describes computer simulation, mentorship, education sessions and learning modules. It also provides an orientation schedule that lists weekly activities, a checklist that allows the nurse to keep track of learning, a self-assessment competency checklist that helps individualize the orientation experience, and a learning plan. Developed checklists and schedules will provide a way for the newly hired nurse to keep track of their learning and will be used as a communication tool during the mentorship process. Checklists will be used throughout the orientation process to verify that each required learning activity is completed. Each newly hired nurse will initial and date when the learning activity is completed on the checklist's identified section. As the EH RPM program uses a shared mentorship model, these tools are important in the coordination of orientation and the

communication process. Module One sets the foundation to individualize the orientation experiences to the learner's needs.

Module Two: Introduction to RPM

Module Two begins by introducing the RPM program and includes the purpose, mandate, vision, benefits, and history. Next, information related to how the RPM program works and the nurse's role in the program is explained. An overview of the shared mentorship process is provided, and the importance of communication within this shared mentorship model is highlighted. Module Two also contains a video link demonstrating the use of technology from the patient's perspective. The video illustrates how a daily session appears on the patient's iPad, including a series of biometrics, symptoms response questions, and education slides specific to the patient's chronic disease.

Module Three: Computer Technology

Module Three introduces the computer technology platforms utilized by the EH RPM program. The platform used to monitor patient biometrics and responses to symptom management questions is described and an opportunity is provided to triage data and acknowledge alerts in a test system. An introduction to the suite of electronic business tools utilized by the program to work virtually is presented. The EH RPM program uses Microsoft office tools for communication and sharing of information among staff. These tools include the platform on which the patient's electronic health record is stored. Instructions are provided on how to access the electronic health record and add to it. The PowerPoint platform is also discussed, and tips for PowerPoint development are provided as one of the RPM nurses' roles is

developing educational slides that are pushed out to the patient through the IPad. The newly hired staff member must be familiar with PowerPoint slide development and presentation.

Module Four: Educational Components

Module Four provides an overview of the educational materials needed to work as a new employee in the EH RPM program. It begins by providing a brief overview of the chronic diseases currently monitored by the program and providing linkages to additional information on each chronic disease should the newly hired nurse need additional education based on their self-assessed need. Chronic disease self-management tools such as health coaching, motivational interviewing, and behavior modification are discussed. Clinical algorithms are introduced and explained; they provide a standardized approach for the team to respond to symptom management responses. Additionally, documentation expectations are reviewed, and links to mandatory forms are provided. Lastly, adult learning considerations are introduced, which builds on the tips for PowerPoint development in Module Three. The population most often served by this program are seniors/older adults who have been identified as having unique educational needs and learning barriers. The newly hired staff member must be cognizant of font size and style, volume adjustment on devices, size of buttons and ease of use of the equipment.

Module Five: Virtual Presence

A nurse in the RPM program can use the technology platform for videoconferencing with patients. Engaging in health care through a videoconferencing application requires familiarity with proper camera placement and lighting, which will affect both the clinician and patient experience. Proper camera placement, lighting, and workstation set up are discussed and explained. Privacy and confidentiality in virtual health care are discussed as additional

parameters are in place to ensure the patient's privacy and confidentiality are protected when sharing health information through videoconferencing. Professional accountability is also discussed, which includes positive patient identification, consent, and documentation, which are unique in the virtual health care experience.

Discussion of Advanced Nursing Practice (ANP) Competencies

Advanced Nursing Practice (ANP) is a broad term used to define nurses' characteristics in advanced practice (Moralejo & Solberg, 2017). The Canadian Nurses Association (CNA) National Framework for ANP separates the competencies into six categories: direct comprehensive care, optimizing health system, educational, research, leadership, and consultation and collaboration (2019). These competencies involve expertise and in-depth knowledge in a designated area of nursing. During this project's development, several of these advanced nursing practice competencies were demonstrated and below are examples of the specific competencies utilized. The competencies of direct comprehensive care and consultation and collaboration were not directly related to this project’s development.

Research Competencies

According to the CNA (2019), advanced practice nurses are committed to producing, synthesizing, critiquing, and applying research. During the integrated literature search, relevant articles were appraised using the appropriate tools. The findings were synthesized and used to justify the need for a comprehensive and consistent orientation as well as topics to include in the orientation toolkit for the EH RPM program. Furthermore, research methods were utilized during the consultations with staff and the environmental scan. A semi-structured interview guide was developed and implemented during the consultations with staff members. Data from both the consultations and environmental scan were collected, analyzed and interpreted for common

findings, themes, and topics considered for inclusion in the toolkit.

Educational Competencies

Advanced practice nurses are continuously seeking opportunities to increase their knowledge and the knowledge of others through a commitment to continuous growth and learning (CNA, 2019). During this process, I expanded my knowledge base by identifying topics to include in this toolkit, which I would not have considered had I not completed a literature review, consultations with staff, and an environmental scan. I also expanded my knowledge and application of teaching and learning principles such as those identified in the frameworks by Knowles and Benner. Furthermore, this toolkit will help expand the knowledge of newly hired nurses orientating to the EH RPM program and my education and learning, as this toolkit will require regular review and revision to ensure processes and standards of practice are up to date.

Leadership Competencies

The CNA framework (2019) states, "advanced practice nurses are leaders in organizations and communities" (p.33) and are: change agents, self-aware and involved with the development and expression of a clear vision for nursing practice. I believe I demonstrated a leadership role by developing an orientation toolkit that will provide a comprehensive and consistent approach for orientation. I recognized the need to create a manual when I began working in this program, and during this course, that idea has expanded to the development of an orientation toolkit. I enacted a change in the nursing process for the EH RPM program by developing this toolkit, streamlining the nursing process for orientation. As a new team member, I was self-aware and would not consider myself an expert in this field of nursing; however, I have recognized that and have consulted with the appropriate experts. Additionally, leaders portray themselves as individuals with whom other staff members look to for advice and

direction. By taking on this project and developing this resource, I demonstrated a commitment to effectively changing work processes and creating a comprehensive and consistent approach to the orientation process.

Optimizing Health Systems Competencies

The CNA framework (2019) states that advanced practice nurses contribute to equitable client-centered health care by advocating for and promoting innovative system change. During this global pandemic, health care innovation has become an effective and efficient avenue to increase patient access to health care services. With an increasing demand for virtual health care delivery comes a need for additional human resources and processes to provide education and orientation for new staff members. By developing this orientation toolkit, I have provided a resource necessary for newly hired nurses orientating to the program. Additionally, as this program expands to other Regional Health Authorities in Newfoundland and Labrador, this manual can be used as a resource for integration with other disciplines and clinical programs and services.

Next Steps

Several steps have been planned for the dissemination and implementation of this learning resource. Initially, the toolkit will be stored on the programs SharePoint platform; however, the Learning and Development Department within EH has been contacted to add the resource to their online learning platform. If this request is approved, the toolkit will be available on the LEAP learning platform within EH.

It has been decided that the toolkit will be implemented during the next orientation period. Staff members have been provided with the toolkit to review and become familiar with their role as mentors during the orientation process. Additionally, this toolkit will be used as a

reference tool for integration with other Regional Health Authorities and clinical program areas in EH. As these other areas may function differently than the RPM program and consist of health professionals from multiple professions, this toolkit will be modified to suit the need of the integrating health authority or profession.

Once the toolkit is implemented, an evaluation will consist of three methods: discussions with newly hired staff members and the RPM program members, completion of an orientation evaluation form, and an audit of the orientation checklists to ensure all content was completed as identified in the toolkit. Based on the feedback received, revisions, if required, will be implemented. Discussions with all team members will take place immediately following the orientation process, and an audit of the orientation checklists will be completed as part of signing off the orientation process as indicated in the EH policy. An orientation evaluation form will be developed and disseminated for the mentors and mentees to complete. The evaluation form will also be provided at the end of orientation, and time will be allotted for completion. The form will identify if: orientation was delivered on time and as planned, any problems or issues occurred during the orientation process and using the toolkit, and any additional material that could be added. An additional section will be included on the evaluation form for newly hired nurses, which will focus on the support received during the transition into their new role and how they viewed the orientation process and the materials provided in the toolkit.

The toolkit will also be indirectly evaluated through planned chart audits, including identified processes discussed and explained during the orientation process. Additionally, patient outcomes and satisfaction will reflect the nurse's ability to function in the assigned role. Communication skills (Carius et al., 2016; Carter et al., 2010; Henry et al., 2017; Honey &

Wright, 2018; Knudsen et al., 2018; van Houwelingen et al., 2016), as well as technology and computer skills (Basu et al., 2010; Carter et al., 2010; Green et al., 2016; Sharma & Clarke, 2014), have been frequently recommended from studies as an essential requirement for telehealth nursing. Patient surveys that are currently built into the technology and provided at the beginning, midway, and end of the program will provide qualitative feedback on these skills.

Conclusion

Comprehensive education and training related to telehealth are essential for delivering professional telehealth activities (Carius et al., 2016; van Houwelingen et al., 2016). Completing this practicum project, which involved developing an orientation toolkit for the EH RPM program, has identified key items necessary for the education and training of a newly hired staff member beginning to provide care to patients through technology. The integrated literature review, consultations with staff, and environmental scan all provided valuable insight into this orientation toolkit development. Additionally, the methods used in this project's development have enhanced my advanced nursing practice skills in the competencies of research, education, leadership, and optimizing health systems.

The development of this toolkit will provide a comprehensive and consistent approach for orientating newly hired staff members to the EH RPM program. Providing the necessary education and training on the identified topics will help optimize the nurses' ability to function as an RPM nurse. The implementation of this toolkit will begin with the EH RPM program, and both direct and indirect evaluations are planned. The toolkit will be used as a reference tool for other programs and RHAs integrating the technology into their areas of practice. Modifications to this toolkit and additional information specific to the program and health professionals

integrating the technology into their practice will be completed allowing for comprehensive and consistent education and training for all health care professionals utilizing RPM technology.

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Appendix I

A Literature Review for The Developing of an Orientation Manual for the Remote Patient Monitoring Program at Eastern Health

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The Eastern Health (EH) Remote Patient Monitoring (RPM) program was established in November 2015 within the province of Newfoundland and Labrador. RPM has been described as the use of technology to enable electronic communication and interactions between patients and healthcare providers who are located in different areas (Giger et al., 2015). Currently, the EH RPM program focuses on improving self-management of chronic diseases such as Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF), and Type II diabetes. Nurses are the core team members. They interact with patients through two-way video calls, through telephone contact, and by monitoring transmitted vital sign measurements such as weight, blood pressure, oxygen saturation, and blood glucose. The RPM program is currently expanding to integrate technology with other clinical programs within EH and other Regional Health Authorities (RHAs) in the province. Integration with other RHAs has been identified and supported by the Chronic Disease Action Plan: The Way Forward (Government of Newfoundland and Labrador, 2017).

RPM is a health monitoring term that is covered under a broader definition of telehealth. According to **Ali et al**. (2015), telehealth involves RPM, patient education and consultation. Similarly, Fronczek et al. (2017) described telehealth as using technology for video conferencing, RPM, and mobile health. Through the use of technology, health monitoring can improve access to care and health outcomes by monitoring patients remotely and providing prompt interventions. Telehealth aims to improve quality of life, patient safety, and quality of care (Purabdollah & Ghasempour, 2020).

Comprehensive education and training related to telehealth are essential for the delivery of professional telehealth activities (**Carius et al**., 2016; **van Houwelingen et al**., 2016). Nurses who begin working in RPM need to become confident and competent in telehealth nursing skills.

Currently, the RPM program within EH does not have a comprehensive orientation process for new staff orientating. Staff members are provided with a binder to review articles and are assigned to a nurse for mentorship. Having an orientation process has been related to increased job satisfaction, staff retention, professional growth, and improved quality of patient care (Kuhrik et al., 2011). Nurses transitioning to work in RPM must become familiar with providing nursing care through technology. In this paper, I will report on the findings of an integrative literature review to identify the skills and competencies required for telehealth nursing practice and the educational needs of orientating nurses to develop these identified competencies. Additionally, I will examine relevant nursing learning theories and report on options for teaching methods relevant in the development of this orientation process.

Literature Search Methods

For this review, information was obtained from searching PubMed and CINAHL for English language studies that were published since 2000. The following keywords were used in the search: telehealth, telenursing, telemedicine, remote monitoring, remote patient monitoring, telecare, staff development, employee orientation, orientation, onboarding, and nursing education. Close to 150 articles were retrieved on the use of telehealth technology in the provision of nursing care; however, few articles among these focused on nursing orientation needs in this setting. A broader search was conducted to retrieve articles regarding nursing attitudes, nursing experiences, and patient experiences within telehealth, as it was believed these terms would provide outcomes relevant to the orientation process. A search using these terms was completed and resulted in about 70 additional studies, which were mostly qualitative.

Furthermore, reference lists of articles retrieved were reviewed for additional articles. All articles retrieved were read and reviewed for appropriateness and, once selected for inclusion,

were evaluated and analyzed for quality using the Public Health Agency of Canada (PHAC) (2014) rating tool for quantitative studies and Critical Appraisal Skills Programme (CASP) (2018) for qualitative studies. Details of key articles selected for inclusion in this integrative review are located in the literature summary tables, which can be found in the Appendix; the authors' names will be in bold text throughout this paper.

Remote Patient Monitoring and Telehealth

In today's healthcare system, the integration of technology within health services and nursing practice has increased substantially. Technology has been identified as increasing access to service, especially for those living in rural and remote areas (**Gifford et al**., 2012; **Henry et al**., 2017; **Honey & Wright**, 2018). Amidst the global COVID-19 pandemic, there has been a higher demand for the use of technology to provide patients with healthcare services in all geographical areas (Khairat et al., 2020; Purabdollah & Ghasempour, 2020). Since COVID-19, there has also been an increased demand for RPM services within the EH RPM program. EH RPM developed and offered a program to COVID-19 positive patients, has integration with nurse practitioners who provide service to patients through the heart failure clinic, and has integrated with the Provincial Home Dementia Program. EH RPM continues to expand to other health authorities in the province and to other clinical programs within EH.

Definitions of RPM and Telehealth

Telehealth has been described as the provision of health care provided remotely through a variety of telecommunication tools such as telephones, smart devices and wireless devices, which may or may not include video connection (Dorsey & Topol, 2016). Though the use of technology, health monitoring can improve access to care and health outcomes by monitoring patients remotely and providing prompt interventions as needed. Telehealth aims to improve

quality of life, patient safety, and quality of care by providing this avenue of health care (Purabdollah & Ghasempour, 2020).

RPM is a form of telehealth delivery as it remotely monitors patients, typically with chronic conditions, through wireless devices that transmit patient data to the clinician. RPM is a health monitoring term covered under the broader definition of telehealth, which refers to all the technology modalities available to enhance health care through various telecommunication platforms (Fronczek et al., 2017). RPM is one form of telehealth as it uses specific technology to facilitate interactions between the nurse and the patient. EH RPM involves a variety of daily biometric readings inclusive of blood pressure, weight, temperature, oxygen saturation and blood glucose. These readings are transmitted from the patients' Ipad to the nurses' computer dashboard.

History of RPM and Telehealth

Telehealth programs have been evident in healthcare environments since the early 1870s and included the transmission of health information through telegraph, telephone, and transmission of radiological images and cardiac rhythms (Schuelke et al., 2019). In Canada, telehealth has had a slow uptake, presumably because of the change process involved with integrating technology into clinical practice as well as cost concerns and billing issues (CMA, 2019). A survey by the Canadian Medical Association (2019) identified that 8% of primary care providers had used a virtual visiting platform. One reason for this low number is the inability to bill for the provision of services. Similarly, this was a barrier in NL before the COVID-19 pandemic; however, the NL government has changed this legislation, and billing for service provided through technology can now occur (The Telegram, 2020). Buy-in from the physician group is essential to increase telehealth technology, increase interprofessional collaboration with

other virtual healthcare providers, and facilitate the promotion of the service among the patient population. **Walker et al**. (2019) conducted a systematic review and thematic synthesis of 16 qualitative studies from 7 different countries, including Canada. They found that patients were reluctant to use technology as they do not trust it. Patients typically have trust in their primary care provider; therefore, the barrier of reluctance may decrease with physician uptake and promotion of use.

The EH RPM program in NL enrolled its first patient in November 2015. During the past five years, the program has grown to take on a provincial lens and expand to include clinicians who are experts in the field of the identified health condition. The provincial government supports this service as it increases access to rural and remote areas and supports patients in self-management of their chronic disease. NL has high rates of chronic disease and a rural population higher than the national average (Diabetes Canada, 2019); therefore, RPM is recognized as a good fit for this province. Additionally, within EH, there are no outpatient interdisciplinary COPD clinics as there are in other areas; as a result, RPM within EH provides a service to a population where one does not currently exist.

Benefits of RPM and Telehealth

Studies have found several benefits of telehealth technology besides increasing access to health services. Evidence from two medium quality studies have found that using technology to deliver healthcare services has reduced hospitalizations, which results in cost savings (**Miguel et al**., 2013; **Walker et al**., 2019). An randomized controlled trial (RCT), which examined telehealth remote monitoring for community-dwelling seniors with COPD, studied the cost-effectiveness and associated benefits of telehealth monitoring for these individuals (Miguel et al., 2013). A total of 71 participants completed the trial, 35 in the control group, and 36 in the

telehealth group. The telehealth group received daily monitoring from a telehealth nurse. The study found a reduction in healthcare service usage that was large enough to result in significant cost savings. The telehealth group was hospitalized less than half as many times (M=0.22; SD=0.48) as the control group (M=0.49; SD= 0.85) and spent a total of 77 fewer days in the hospital. Similarly, a systematic review and thematic synthesis of 16 qualitative studies from 7 different countries concluded that RPM resulted in a reduced need for hospitalizations (Walker et al., 2019). Qualitative data were pooled from multiple studies to better understand the attitudes, values, and beliefs of RPM among patients with chronic disease. In 12 of the 16 studies synthesized, patients stated that having timely and accessible care resulted in early action and a decrease in hospital admissions and visits.

The use of telehealth technology has positively influenced health outcomes. Three studies, an RCT (Miguel et al., 2013), a qualitative systematic review (**Walker et al**., 2019) and an interpretive descriptive study (**Knudsen et al**., 2018) have found that patients who utilize RPM and other telehealth platforms have identified improved knowledge of their chronic condition. As previously described Miguel et al. (2013) examined telehealth remote monitoring for community-dwelling seniors with COPD in Western Australia. They found a clinically significant change in the telehealth group ability to self-manage their chronic condition between baseline and six months. Quality of life was measured using four domains, and mastery of chronic disease self-management was identified as clinically significant in the telehealth group as they improved by 2.3% compared to 1.3% improved in the control group. In the systematic review of 16 qualitative studies, Walker et al. (2019) concluded that patients gained increased awareness and understanding of their chronic condition, gained confidence to self-manage their condition and experienced a reduction in anxiety and stress. Although triangulation and a

standardized framework were utilized to evaluate the comprehensives of studies, only half the studies reported data saturation, which decreased the ability to drawn a conclusion from the results. Similarly, Knudsen et al. (2018) completed an interpretative description of rheumatoid arthritis (RA) patients' experience with telehealth follow up in Denmark. Semistructured interviews were conducted with 15 patients and found increased confidence in chronic disease management and reduced anxiety. This study's credibility was high as data reliability and validity were ensured by an ongoing discussion between all the authors. Findings from this RCT, qualitative systematic review and interpretive descriptive study suggest patients developed a deeper understanding of their condition, gained the ability to assess and manage symptoms, and experienced a reduction in stress-related to their health condition.

Need for Orientation

With the increasing demand for telehealth technologies, it is relevant and timely to focus on the need for telehealth orientation. It is essential to recognize that providing health care through the use of technology requires nurses to adhere to the same standards as nurses who provide care in traditional settings. There is, however, the need for telehealth nurses to rely heavily on verbal communication skills for patient assessment (CRNNL, 2010). Often nurses begin careers in telehealth with no additional formalized training (**Honey & Wright**, 2018; **Carter et al**., 2010). Healthcare organizations, as well as schools of nursing, do not have standardized educational components related to telehealth and have limited knowledge of telehealth educational needs (**Sharma & Clarke**, 2014; Carter et al., 2010). Although these study findings are 5-10 years old, no other studies have reported on this topic, which identifies the need for future research on the use of standardized educational components by healthcare organizations and nursing schools.

Shift in Nurse-Patient Relationships

During the development of telehealth nursing education, it is imperative to identify nursing experiences within the field of telehealth. Examining experiences can lead to the identification of essential components to be included in telehealth education development. Experiences of nurses discussed in the literature are both positive and negative, and it is essential to recognize and learn from these first-hand experiences. Negative experiences involving loss of physical touch (**Green et al**., 2016; **Sharma & Clarke**, 2014), which will be further discussed in the next section, is an important topic to include in education as newly hired staff will need to be prepared for this change in care delivery. Studies have found that nurses identified a need for previous clinical expertise to adapt to the change in the nurse-patient relationship when using telehealth technology. This shift included a change in how nursing care is delivered, how relationships are formed, and how privacy and confidentiality are maintained. (**Carius et al**., 2016; Green et al., 2016; **Koivunen & Saranto**, 2017; Sharma & Clarke, 2014; **van Houwelingen et al**., 2016).

Telehealth nursing is a change in healthcare delivery from the tradition of nursing as an art and science, with art focusing on the profession's caring and humanistic approach. While these nursing aspects still exist in telehealth nursing, the process of entering a caring moment with patients through telehealth alters the nursing experience. Watson (2010) defined caring moments to be when two people come together in a human sharing experience that is meaningful and authentic and leads to the discovery of self and others. Studies have found that nurses experience loss of human touch and personal contact when communicating with patients strictly through technology. Three studies, two interpretative phenomenology studies (**Green et al**., 2016; **Sharma & Clarke**, 2014) and an ethnography study (**Tuxbury**, 2012), found that nurses

experienced the loss of physical touch and the loss of face-to-face interaction when providing care through technology. The two interpretative phenomenology studies, Green et al. (2016) with 33 telehealth specialists in Australia and Sharma and Clarke (2014) with 16 staff members working with telehealth in Nottingham, United Kingdom, completed in-depth interviews. Green et al. (2016) conducted 12 months of field work while Sharma and Clarke (2014) conducted focus groups. In comparison, Tuxbury (2012) did an ethnography study with 6 nurses working in the Northeastern United States. All three studies found that nurses experienced the loss of physical touch when providing care through technology. Green et al. (2016) also found that telehealth technology resulted in depersonalization and a lack of face-to-face contact which negatively impacted clinicians. These studies were judged to have medium (Green et al., 2016; Sharma & Clarke, 2014) and high (Tuxbury, 2012) credibility as trustworthiness was established through data saturation, bracketing and a well-established review process respectively. Based on these three qualitative studies' results involving a small number of participants, the evidence should be used with caution. From an orientation and educational perspective, preparing nurses for a shift in the nurse-patient relationship as a result of the practice environment and preparing them for how presence will be experienced in telehealth nursing will be considered.

Nurses working within telehealth have also highlighted concerns related to confidentiality and privacy in this practice environment. Confidentiality and privacy are underpinnings of the nursing profession, as evident in practice standards, employer policy, and nursing code of ethics. The Personal Health Information Act (Government of Newfoundland and Labrador, 2011) also reiterates, through provincial legislation, the importance of the clinician's role involving personal health information. A qualitative systematic review of 21 studies (**Koivunen & Sarento**, 2017) and two studies, an exploratory study (**Carius et al**., 2016) and a Delphi study (**van**

Houwelingen et al., 2016), identified that both confidentiality and privacy were potential risks and barriers to nurses utilizing telehealth. The systematic review focused on nurses' telehealth experiences of facilitators and barriers to telehealth practice and used a rigorous review process, which added to its medium credibility. Results found that confidentiality concerns and privacy protection were seen as risks and a preventing factor to telehealth usage. This systematic review's credibility was judged as medium as data were extracted using a framework, and a rigorous review was enhanced by consulting with an information specialist. A total of 51 Dutch experts from nursing schools, hospitals, home care agencies, and technology departments participated in the study by van Houwelingen et al. (2016). They recommended nurses need to pay attention to privacy in remote contact and to be aware of limitations in collecting patient data. These findings were further supported by a qualitative exploratory study involving 15 German and Swiss telehealth executives who participated in semistructured interviews to explore the knowledge, skills and attitudes required for telehealth practice (Carius et al., 2016). The findings suggest that nurses need to be knowledgeable of legal and ethical issues inclusive of privacy and data management for the employer and employee's security. This exploratory qualitative study was judged to have high credibility as a semistructured interview guide provided dependability, and participants were invited to comment on their interviews. The Delphi study had a descriptive design and low quality because of a low response rate in round two and three respectively, which limits representativeness of the sample; therefore, the results must be used with caution. From these findings, it appears relevant to educate and train nurses on the specific safeguards required from an organizational perspective specific to telehealth technology. Educating staff members about these safeguards will address concerns related to privacy and confidentiality.

The requirement of nursing experience to work in the field of telehealth nursing is an important consideration. Telehealth nurses are more independent in their practice and utilize clinical experience to educate and monitor their patients. It has been considered that the change in the nurse-patient relationship will be an easier transition for nurses who have previous clinical experience interacting with patients and building relationships as compared to those with no clinical experience. Three studies involving telehealth nurses identified the need for previous clinical knowledge and expertise. Two descriptive qualitative studies (**Roing et al**., 2012; **Carter et al**., 2010), and an exploratory study (**Carius et al**., 2016), supported the need for broad clinical knowledge, the need for developed assessment skills and the need to rely on past professional experience as a strategy to assess patient symptoms. Roing et al. (2012) analyzed data collected through 18 months of recorded calls that 12 Swedish telehealth nurses had completed with patients. In comparison, Carter et al. (2010) recruited 138 Canadian telehealth nurses who completed open-ended questions through email, telephone, and face-to-face concerning telehealth nurses' educational needs. Similarly, Carius et al. (2016) conducted semistructured interviews with 15 German and Swiss telehealth executives to explore the knowledge, skills and attitudes required for telehealth practice. All supported the need for prior knowledge and experience. For example, Roing et al. (2012) suggested that relying on past experience was a strategy used by telehealth nurses when assessing callers' symptoms. Carter concluded that telehealth nurses required a broad knowledge base and advanced assessment skills. Carius et al. (2016) recommended that telehealth nurse candidates should have three to five years of nursing experience. The findings from these studies suggest that telehealth nurses need broad clinical knowledge and assessment skills developed from professional experience. These studies were judged to have medium (Carter et al., 2010) and high credibility (Carius et

al., 2016; Roing et al., 2012) as they produced themes of rich data that were rigorously analyzed. Recognizing that nurses who work with telehealth technology have an abundance of clinical experience, the orientation process should focus on and build from these experiences.

Lack of Education

Nurses are not prepared for the telehealth practice environment because there is lack of telehealth education offered from employers and nursing schools. Lack of telehealth education in nursing schools involves faculty members' lack of confidence and competency in telehealth nursing. Nurses learn from past experiences and integrate these professional experiences in the teaching and learning process, and faculty members are no different. It would be considered challenging for nursing educators to teach students telehealth concepts if they have no personal or professional experiences to integrate into the teaching/learning process. Faculty members have identified the need for education themselves to be able to teach telehealth concepts in the nursing curriculum. A cross-sectional descriptive study in the United States found that the lack of telehealth training for faculty was a barrier for integration into nursing curricula (**Ali et al**., 2015). Data were collected through online questionnaires; 77% of respondents felt they did not have adequate training, and 69% felt they lacked the required knowledge and skills. Although the study design was weak and the response rate was low (33%) limiting the generalizability and representativeness of the sample, the findings highlight the need for nursing schools to better prepare faculty members to integrate telehealth education into the current curriculum.

Nursing staff members have also identified a lack of knowledge related to a lack of employer-led professional development for telehealth nursing. A qualitative systematic review (**Koivunen & Saranto**, 2017) and two other qualitative studies (**Green et al**., 2016; **Honey & Wright**, 2018;) have identified concerns from nurses working in telehealth regarding the need

for adequate support, training and education. Koivunen and Saranto (2017) conducted a systematic review of 21 studies that took place in seven different countries, including Canada, and examined nurses' experiences related to telehealth applications. They identified that nurses did not have necessary keyboard skills, did not receive adequate support and training, and did not receive adequate telehealth experience for competency and skill development. Similarly, two qualitative studies, a phenomenology study (Green et al., 2016) and a descriptive study (Honey & Wright, 2018), conducted 45-60 minute interviews with nurses who had experience using telehealth technology and concluded that familiarity with technology and training was required. The credibility of the systematic review was judged as medium, and the two qualitative studies were judged to have medium credibility as rigour was present, which contributes to the trustworthiness of the results. These findings, although from weak evidence, provide some support for the need to take initiatives to enhance education and training for nurses who provide healthcare through technology.

Skills and Competencies Needed

As outlined by their licensing body, nurses are required to meet and maintain entry-level competencies within their scope of practice (CRNNL, 2019). The profession of nursing offers a variety of practice areas to care for differing patient populations. Telehealth provides nurses with the ability to practice in an environment that is somewhat different from traditionally bedside nursing. As a result, specific competencies are essential in providing quality nursing care. Nurses must expand or develop new skill sets to become proficient in the field of telehealth, where patient assessment is completed through telephone communication, videoconferencing, or text messaging. Communication skills having been frequently recommended from studies as an essential requirement for telehealth nursing (**Carius et al**., 2016; **Carter et al**., 2010; **Henry et**

al., 2017; **Honey & Wright**, 2018; **Knudsen et al**., 2018; **van Houwelingen et al**., 2016) however, studies have also recommended that technology and computer skills are important in the field of telehealth nursing (**Basu et al**., 2010; Carter et al., 2010; **Green et al**., 2016; **Sharma & Clarke**, 2014).

Communication Skills

Communication skills are taught to all nurses as entry-level skills for nursing practice. Nurses who begin practice in telehealth have developed communication skills through their undergraduate programs and from years of nursing experience. Still, communication skills in the telehealth environment require more than basic competency. Two studies as previously described, a descriptive qualitative study (Honey & Wright, 2018) and an exploratory study (Carius et at., 2016), consisted of semistructured interviews that were conducted face-to-face or by telephone and found that advanced verbal communication skills are required to ensure nurses engage the patient in this avenue of health care. These studies recommended strong communication skills to address problems and challenges, support the emotionally stressed patient, and engage the patient. Carius et al. (2016) was judged to have high credibility and Honey and Wright (2018) was judged to have medium credibility as dependability was established by using a semistructured interview guide. From these findings and the quality of these studies, the inclusion of education related to communication skills in telehealth nursing practice will need to be considered with caution.

Techniques to Enhance Communication

Engaging the patient can be achieved by using open-ended questions, which also allows the nurse to collect additional information. Using this approach as a communication skill is essential, and one option is to use Motivational Interviewing (MI) within the telehealth setting.

MI has been described as an evidence-based communication technique utilized to assist patients in making behavioural changes to improve health outcomes. MI has been adapted for use in telehealth technology (**Badowski et al**., 2019). A systematic review of 48 RCTs published between 1997 and 2011 evaluated the use of MI in medical settings (**Lundahl et al**., 2013). The magnitude of the difference between the control group and the intervention groups concluded MI has a positive outcome. It was found that the intervention group exercised more often (OR=1.47; CI= 1.19-1.81) than the control group, lost more weight loss (OR=1.17; CI=1.09-1.27) than the control group, and had a larger reduction in blood pressure (OR=1.65; CI=1.24-2.19) than the control group. A more recent study conducted by Badowski et al. (2019) examined the effectiveness of telehealth simulation based experience with MI. A total of 22 post-licensure nursing students completed online surveys and 80% strongly agreed/agreed that MI advanced their communication skills. The study design was weak and does not provide evidence of the effectiveness of MI compared to a systematic review of 48 RCTs that examined the use of MI on patient outcomes. It appears MI skills can enhance nursing communication skills and help the patient achieve personal goals related to chronic disease self-management. Based on these outcomes, MI will be considered for inclusion in the telehealth orientation manual.

Another technique to enhance communication involves the ability to videoconference with patients. A qualitative systematic review that included 45 publications between 2004 and 2015 described interpersonal clinician behaviors and attributes of care in telehealth delivery (**Henry et al**., 2017). In the rigorous review and data extraction, which was judged to have medium credibility, the need for proper camera placement was identified to assess patterns of non-verbal communication of both the clinician and the patient during videoconferencing and to provide amply non-verbal communication, such as head nodding and other actions to encourage

the patient's interaction. A more recent Delphi study (**van Houwelingen et al**., 2016) explored the knowledge, attitudes and skills nurses need to support community-dwelling patients. A total of 51 Dutch experts recommended communicating clearly during videoconferencing and knowing what to do to enhance contact. The study design is descriptive, and therefore, these results need to be considered with caution. Nevertheless, the systematic review conducted by Henry et al. (2017) provided results that can be considered in the development of a telehealth orientation manual.

Technology and Computer Skills

Two skills identified in the literature, which are unique to the field of telehealth nursing, are enhanced technology and computer skills. While most nursing staff document electronically and have a basic understanding of technology, telehealth nurses are required to coordinate patient care through technology and are required to rectify issues by collaboration with the patient through this technology. Studies have identified nurses involved in these interactions need technical skills and competencies to adapt in this practice environment. A qualitative systematic review (**Basu et al**., 2010), including 10 publications from 1999-2009, evaluated training programs and found that prior to learning telehealth technology and practices it is important to determine level of computer literacy as training may be required on basic competencies before in-depth telehealth technology training. The credibility of this systematic review was judged as medium as a rigorous interpretation process was established, and a standardized framework was used for coding of data. In a more recent interpretative phenomenological study (**Green et al.**, 2016) involving 33 telehealth specialists, previously described, it was recommended that familiarity with technology be assessed to ensure nurses possess adequate skills in the use of RPM software to ensure technical issues do not impede clinical expertise. It is important to

consider that these results were based on experiences of clinical experts and other health professionals working in the field of telehealth. Based on these finding, it will be important to assess newly hired nurses' computer and technology skills to individualize education to suit their learning needs.

Another technical skill unique to the field of telehealth nursing is troubleshooting. Nurses need to be able to adjust their workflow and support their patients when technical issues occur. Two qualitative studies with medium credibility, previously discussed, identified the need for technology and technical troubleshooting skills as core competencies required in telehealth nursing. In their study of 138 Canadian telehealth nurses, Carter et al. (2010) found the nurses recommended the need for computer skills to handle technical difficulties. Similarly, in their study of 16 telehealth staff members in the United Kingdom the findings of the study by Sharma and Clarke (2014) suggested the need for a skillset to deal with technical issues. From these recommendations from telehealth nurses, it will be important to consider training staff members to troubleshoot technical issues when the telehealth technology is not operating as is it designed.

It is also important to recognize that patients are concerned and anxious about learning how to use technology. A qualitative systematic review (**Walker et al**., 2019) involving 16 studies explored patient experiences using RPM and found that learning how to use the technology could be a burdensome and stressful experience. An interpretative description study of rheumatoid arthritis patients' experience conducted by **Knudsen et al**. (2018) found that some patients felt insecure about using technology and had concerns about communicating through technology. Based on this evidence, is may be helpful if nurses are confident and proficient to assist patients and alleviate technological issues given the identified patient concerns.

Educational Strategies

Research involving telehealth nursing provides recommendations on educational strategies; however, no studies evaluated interventions used for telehealth orientation. Educational strategies recommended from telehealth studies (**Badowski et al**., (2019); **Basu et al**., 2010; **Gifford et al**., 2012; **Green et al**., 2016; **Honey & Wright**, 2018) were related to mentorship, simulation, and online learning. Research involving teaching and learning in other nursing programs were also explored to identify orientation methods utilized to educate nurses in others fields of nursing (Bramer et al., 2020; Bulut et al., 2010; Hegland et al., 2017; Pasila et al., 2017; Rasheed et al. 2020; Strauss et al., 2016).

A 2017 qualitative systematic review that included 13 publications, with a date range from 2003 to 2015, aimed to describe the orientation experience of newly graduated nurses (Pasila et al., 2017). Results identified positive and negative experiences related to orientation. Positive experiences resulted from a balance between classroom teaching and clinical training, support from the preceptor, and an individualized orientation. Negative experiences resulted from dissatisfaction with the preceptor, length of orientation, and lack of feedback from staff members. Studies included in the review were screened independently by two researchers and disagreements between researchers regarding eligibility were resolved through discussion, which contributed to the credibility of the findings. Similarly, a cross-sectional study (Strauss et al., 2016) examined the effectiveness of orientation from the new graduate's perspective. A total of 79 new graduates in Israel were provided questionnaires containing open and closed ended questions. Participates indicated that a structured orientation program and a professional preceptor who was supportive and knowledgeable contributed to a positive orientation experience. Factors cited by graduates that contributed to a negative experience included a lack

of structured orientation, having different preceptors that caused a lack of continuity in training, and being provided a heavy workload. These finding suggest a structured orientation contributes to a positive orientation experience, however, the study design was weak, and therefore the results need to be considered with caution.

A qualitative systematic review (Basu et al., 2010) synthesized 10 studies that were published from 1999-2009 and explored the lack of pedagogical and professional development models related to telehealth nursing. Findings highlighted that telehealth education and training include more than learning technology; it also includes learning how to adapt practice and engaging in technology. Additionally, mentorship was emphasized as an important component in this transition. Two other studies, an uncontrolled before-after (**Bulut et al**., 2010) and the interpretative phenomenological study by Green et al. (2016) that was previously discussed, recommended mentorship be incorporated in the orientation process. The purpose of the study by Green et al. (2016) was to investigate how service providers experienced service separation through telehealth technology and they recommended the need for mentorship when transitioning into the telehealth role. This qualitative study provides weak evidence, and therefore the results need to be considered with caution. Bulut et al. (2010) conducted a study with first and fourth-year nursing students to evaluate a mentorship program's effectiveness in nursing education. Data were collected using questionnaires before and after a 13-week mentorship program. Results found that 71% of first-year students agreed that mentorship was supportive. An important finding was the mentor's attitude; 86% partly agreed that they were bothered by the mentor's attitude, which influenced the ability to establish a good connection in the relationship. The study design was weak, and therefore the results need to be considered with

caution. Based on the findings from the systematic review mentorship will be included as a part of the orientation process.

Simulation based training is an important educational strategy to incorporate within the field of telehealth technology. Simulation based training has been described as practicing realistic scenarios using a specialized manikin, computer software, or humans playing the role as patients (Hegland et al., 2017). Within telehealth nursing, simulation based learning focuses on the use of computer software to provide a test or practice site. This practice site provides two learning activities for the newly hired nurse. First, it allows the newly hired nurse to practice using the technology and secondly it allows for the triage of test patients and therefore the application of clinical nursing knowledge in a telehealth environment. A systematic review of 15 RCTs published between 2005 and 2016 evaluated the effect of simulation based training on nurses' skills and knowledge (Hegland et al., 2017). The findings suggest simulation based training seems to be effective in improving nurses' skills when compared to other learning strategies. Six studies in this review used different scales, such as multiple choice and questionnaires, to compare simulation-based training on nurses' skills. A mean difference was provided for each study. Hegland et al. (2017) calculated the mean of the mean from these six studies and computer-based simulation showed a standard mean difference of −1.06 (CI −1.50 to −0.62), which is a significant effect in favor of computer-based simulation. Additionally, the review found a positive effect of simulation-based training compared to other learning strategies on nurses' skills ($p < 0.0007$). Studies included in this review were independently screened and assessed for risk of bias by two researchers, which contributed to the high quality of this systematic review. From these findings, it appears relevant to included simulation as an educational strategy in the telehealth nursing environment.

Traditionally, nursing orientation is held face-to-face in a class setting; however, telehealth educational strategies also focus on online learning pedagogy, such as self-paced learning and ability to practice in a test system. A 2020 systematic review that included 30 qualitative publications with a date range from 2014 to 2018, focused on the challenges students face in the online component of blended learning. It was found that while challenges exist, such as level of computer skills and ability to access help, online learning supports the learner as long as the learner was at the center of the learning experience (Rasheed et al., 2020). The PRISMA reporting protocol was utilized and each author individually reviewed each article, which contributed to the credibility of the findings. Also, in 2020 a phenomenological study (**Bramer**, 2020) explored third-year adult nursing students' experiences with online learning. Focus groups were conducted with 12 preregistered adult nursing students in their third year and who had participated in online learning. It was found that while there were barriers, such as lack of relationship building, the experience had many positive results such as convenience, accessibility and individualized learning. This study was judged to have medium credibility as the researchers were not trained in focus group discussions. The findings of the systematic review and the results from the weaker qualitative study by Bramer (2020) will be used to support the inclusion of online learning as a learning strategy in the EH RPM orientation manual, and the identified challenges will need to be considered.

E-learning is another learning strategy using in the RPM setting. E-learning has been interchangeably used with the terms web-based learning, online learning or education, computer-based instruction, technology-enhanced learning and virtual learning. A 2020 systematic review that included 24 quantitative publications with a date range from 2005 to 2019 aimed to identify and synthesize the factors affecting e-learning in health education. It was found that several

enablers and barriers exist in the e-learning environment (Regmi & Jones, 2020). Barriers consisted of motivation, suitability of content, and information technology skills. The PRISMA reporting protocol with a two-stage approach was utilized to prevent exclusion of high quality studies and each author individually reviewed each article, which contributed to the credibility of the findings. These finding will be taken into consideration during the development of the EH RPM toolkit.

Summary of Key Literature Findings

Several key findings have been identified from the completion of this integrative literature review, which will be considered in the development of an orientation manual for the EH RPM program. First, studies have found there is a lack of available education for telehealth nursing. Telehealth technology has grown substantially, especially during the recent world pandemic. Nurses are transitioning to a technology-based practice setting with little to no formalized training and as a result, there exists a need for an in-depth, supportive orientation for nurses to practice proficiently in this setting. The EH RPM program recruits nursing staff members based on specific qualifications, including a minimum of five years of acute care experience within a medical or surgical unit. While the clinical requirements are based on experience there is no requirement involving telehealth experience. One potential reason telehealth experience is not a requirement is a result of the lack of formalized telehealth education. Many nurses have years of clinical experience and are competent care providers. However, using technology to provide care presents the need for growth and development of a different skillset (**Carius et al**., 2016; **Honey & Wright**, 2018; **Sharma & Clarke**, 2014).

Telehealth nurses have reported that the art of nursing is experienced differently through

the use of technology. Studies have found that nurses have experienced the loss of touch through this avenue of healthcare. It has been beneficial to examine nursing attitudes and experiences within this telehealth field, which has led to this discovery. It is important to consider educating new staff members on what they may experience in the telehealth field of nursing. This finding is important for the EH RPM program, as staff turnover has resulted from this technology-based environment.

Another common finding is the importance of communication skills for nurse-patient interactions through technology. Nurses receive education on therapeutic communication during nursing school and build on these skills through practical experience. The telehealth environment presents the need for additional education regarding communication, as nurses must be adequately prepared to work proficiently in this practice setting. These skills involve verbal communication, which can be enhanced through motivational interviewing. This is important for the nurses working within the EH RPM program, where the focus is on behaviour modification in chronic disease self-management. Patients will also benefit from the use of advanced communication skills as they will view the experience as engaging and welcoming, especially if they are apprehensive about using technology to deliver healthcare.

Potential educational strategies have also been identified related to telehealth education. Mentorship is seen as a valuable component of the orientation process as it assists the nurse in the transition process. Mentorship, which includes learning from an experienced nurse, is necessary for nurses to become familiar with providing care through telehealth technology and allows them to observe how to build and establish therapeutic relationships using technology. It is important to consider that mentorship has been viewed by telehealth nurses as an important

consideration in the orientation of newly hired staff. Nurses need to be provided with guidance from a clinical expert who will also be a resource when questions or concerns arise.

Simulation as a learning strategy has also been identified in this practice environment. Providing computer generated simulation will help nurses build confidence in using technology and monitor patients. Providing exposure through simulation will allow practitioners to practice and become familiar with the technology before providing patient care. Newly hired nurses should be provided the opportunity to avail of this educational strategy to become comfortable with providing care in this environment. Simulation is an educational strategy currently used by the EH RPM program to train newly hired nurses. Online learning, which incorporates computer generated simulation, is also an important educational strategy for EH telehealth nurses. Providing mentorship and support online through technology, especially during the current world COVID-19 pandemic, was an educational strategy utilized to orientate newly hired and deployed staff members.

The need for a comprehensive orientation program was supported by the literature findings. Nurses require a thorough orientation inclusive of education and training to transition into the telehealth nursing role. This in-depth orientation will include processes such as mentorship and simulation to support new nurses as they transition to the field of telehealth technology. The development of an orientation tool kit would seem to be a better fit than a manual alone to incorporate the identified requirements of a comprehensive orientation for the EH RPM program.

Guiding Theoretical Frameworks

Two theoretical frameworks will be applied in the development of this orientation manual for the EH RPM program. Nursing theory has been defined as a conceptualization of nursing to

describe phenomena, explain relationships, predict consequences, or to establish nursing care (Fronczek, 2019). It is essential to consider how nursing has evolved through a theoretical lens as the integration of technology into practice is another change in the profession's evolutionary journey. Two theoretical perspectives will be analyzed to obtain traditional nursing concepts to guide the development of this tool kit. Concepts from Knowles' Adult Learning Theory (ALT) (1978), which focuses on gaining knowledge and meaning through experiences, will be incorporated (Candela, 2016). These experiences will include online learning, a demonstration from the mentor, and a return demonstration from the mentee to gain new knowledge. Also, Benner's Novice to Expert theory identifies five levels of clinical nursing practice that are essential to consider when evaluating educational needs (Cooper, 2009) will be utilized to individualize the learning process.

Knowles' Adult Learning Theory

Knowles' Adult Learning Theory (ALT) (1978) claims adults learn differently than children and this difference in learning must be taken into consideration when planning education and professional development for the adult learner. ALT focuses on the integration of personal and professional experiences to foster learning (Candela, 2016). Newly hired nurses will bring with them clinical experiences, which will be integrated into the orientation plan. Some areas of orientation may require more education and training based on the nurses' past experiences. Using this principle, I plan to develop a self-assessment competency checklist that can be used at the being of the orientation process to assess individual learning needs. This tool will assist in providing a customized orientation to the newly hired nurse. Knowles (1978) also claimed that adults are more likely to learn if they perceive the information as personally

relevant, essential and useful. By using a self-assessment competency tool, newly hired nurses will have input into their learning plans.

Andragogy utilizes six assumptions about adult learning that guide adult learners in meeting their learning needs and goals (Cooper, 2009). These six assumptions are: self-concept, experience, readiness to learn, orientation to learning, motivation, and need to learn. These assumptions will be addressed with each newly hired nurse based on discussions with that individual. Again, the self-assessment competency checklist will be incorporated in this process. The checklist will be used to assess the adult learner's previous experience and to identify areas where learning is needed. Self-concept and orientation to learn will be determined by utilizing the self-assessment checklist, as adults have a desire to be autonomous and usually perform best in a self-directed environment. When adult learners recognize areas where learning is needed they may become motivated and ready to learn new skills that they have self-identified to increase their knowledge base and assist them in becoming proficient and competent in their role. Additionally, adult education can take place in various settings using different pedagogies. The learning setting is unique to the EH RPM program and incorporating simulation and online learning strategies using computer technology should be considered.

Recognizing these tenets of adult learning, the development of an orientation tool kit will be useful for newly hired nurses and existing staff members within the RPM program. Newly hired nurses will utilize the tool kit to guide the development of new knowledge related to telehealth nursing, for example, communication skills (**Carius et al**., 2016; **Carter et al**., 2010; **Henry et al**., 2017; **Honey & Wright**, 2018; **Knudsen et al**., 2018; **van Houwelingen et al**., 2016). Existing staff members who will be entering the mentorship role will use this tool kit to guide the newly hired nurse's mentorship process. The development of an orientation tool kit,

guided by the ALT, will provide mentors and mentees with tools to utilize during the orientation process.

Benner's Novice to Expert

Benner's theoretical model suggests that in the development of skills, one passes through five stages of proficiency: novice, advanced beginner, competent, proficient, and expert (Thomas & Kellgren, 2017). Benner's model is contextual, meaning when a nurse is placed in a situation with no previous experience, they will revert to using theory to guide practice. Nurses with many years of experience who are experts in their area of practice will revert to a novice practitioner when entering an area with no practical experience regarding the application of new knowledge. Understanding these levels and applying them on an individual base is essential in the education process (Cooper, 2009).

At a novice level, nurses have minimal experience and transition is based on the frequency and type of experience encountered. Technology could produce apprehension and frustration for the nurse; therefore, it is essential at this level, to focus on one task at a time (Thomas & Kellgren, 2017). Using this framework in the development of an orientation tool kit, initial processes will focus on the newly hired nurses' knowledge of technology and computer skills. According to Benner, advanced beginners begin to recognize situational elements that are relevant, and they may become overwhelmed by the skills required to function independently (Thomas & Kellgren, 2017), therefore mentorship is important in the transition process. A shared mentorship involving all clinical nurses mentoring the newly hired nurse will be outlined in the orientation tool kit. At the competent level, nurses can see the big picture and actively think about the future in planning for the present (Thomas & Kellgren, 2017). It will be important to

included case studies in the tool kit for the newly hired nurse to practice applying the new knowledge that has been acquired. Proficient nurses have mastered skills and can assess patients based on responses over time. At this stage, nurses spend less time on technical set up as they have mastered these skills. Telehealth nursing involves many new technical skills, and during this stage, satisfaction is obtained, as technical skills become familiar, and they begin to feel comfortable providing care independently. Finally, the last step of skill acquisition is the expert level, where the nurse recognizes what needs to be achieved from practical experience and can demonstrate how to achieve the desired outcomes (Cooper, 2009).

An orientation tool kit developed for the EH RPM program will utilize Benner's theoretical model in its development. Each level, from novice to expert, requires support explicitly related to the transition process. All new nurses will be considered novice within the practice area of telehealth; however, past clinical experience will be evaluated, and education adjusted accordingly.

Conclusion

Technology has increased access to healthcare services, especially for those living in rural and remote areas (**Gifford et al**., 2012; **Henry et al**., 2017; **Honey & Wright**, 2018). Access to service has been particularly important for all geographical areas during the current COVID-19 world pandemic. Nurses utilizing telehealth technologies should be educated on competencies and skills essential for telehealth practice. A literature review revealed that education and training in telehealth are important and can include communication skills, mentorship, and online learning. Both nurses and clients' experiences and attitudes also provide insight regarding the skills needed to practice in the telehealth environment. Although the

literature recommends key components for telehealth education, the quality of the studies analyzed and the limitations must be considered. One finding is the lack of empirical data and the need for future studies from a quantitative lens. A majority of the studies identified were qualitative studies and, therefore, opinion-based. Nevertheless, the findings were valuable as they are the opinions and experiences of the experts working with telehealth technology.

The development of an orientation manual was identified as a need by the RPM program, and it became clear that a manual alone was insufficient and a tool kit would be more appropriate. Developing this tool kit will provide a comprehensive process inclusive of telehealth specific content to support new nursing hires. The theoretical frameworks of Benner (Thomas & Kellgren, 2017) and Knowles (Candela, 2016) will be utilized to guide and support the development of this learning resource. Nurses new to the area of telehealth will be able to utilize this resource under guidance from their mentor to build on existing clinical knowledge and transition from novice to expert in the field of telehealth nursing.

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Appendix A

Literature Summary Table

Study/Design	Methods	Key Results	Comments
Authors: Ali et al. (2015) Methodology: Cross-sectional Purpose: To identify telehealth education trends in 43 schools of nursing	N=130 deans and directors of schools of nursing Setting: 130 Schools which offered baccalaureate, master's and doctorate programs in the United States Data collection: • Online questionnaire Outcomes: • Ranking of technology strategies • Academic institution and healthcare facilities support in providing telehealth education • Clinical and simulation learning experiences related to telehealth • Barriers to implementing telehealth education	**Proportion and Mean (M)** Ranking of education pedagogy: • Online education: 45.5% (M= 1.94, SD=1.06) • Clinical simulation 42.4% (M=1.88, SD=0.69) • Telehealth 6.3% (M=3.16, SD= 0.95) • Flipped classroom 6.3% (M=3.03, SD=0.90) Telehealth in program: • Confident telehealth integrated: 57% • Should be in program: 88.2% • Had in program: 71% • Lacked training 77%	Strength of Design: **Weak** Quality: Low • Low response rate (33%) which limits generalizability and representativeness of the sample • Multiple recruitment strategies utilized • Technological terms may have deterred completion used of questionnaires
Authors: Badowski et al. (2019) Methodology: Cross-sectional Purpose: To examine the effectiveness of telehealth simulation-based	N=A convenience sample of 22 post-licensure nursing students Setting: United States Data collection: • Online survey following	% strongly agreed/agree: • MI: 80% • SBE/Telehealth: 100% • Experience :100%	Strength of Design: **Weak** Quality: Low • Small sample size and single site limits the generalizability of finding • Survey developed by the investigators

Study/Design	Methods	Key Results	Comments
experienced (SBE) with Motivational Interviewing (MI)	participation in CBE/MI program Outcomes: • SBE/telehealth nursing benefit learning • Participants learned a new communication technique • Self-report of MI integration into practice following experience		• Social desirability bias from self-reported outcomes
Authors: Basu et al. (2010) Methodology: Qualitative systematic review Purpose: Describe the design and conduct of programs teaching telehealth	N=10 studies which were predominantly case studies of specific courses or programs Setting: Analysis took place in New Zealand however no studies from New Zealand were identified Data collection: • A systematic review of articles published from 1999-2009 • English language peer-reviewed • An evaluation of training programs	Recommendations: • Technological competencies assessment and training required before telehealth education/training • Need for availability and easy access to online learning Themes: • Role of context-availability of resource • Learner characteristics and preparedness • Availability and easy access to online learning • Course design and teaching and learning methods • Coaching and apprenticeship an important learning experience	Credibility: **Medium** • Rigour ensured through the interpretation process as two members of the research team independently selected studies and interpreted themes • PICO framework utilized for the development of codes which lead to themes • Review addressed the clearly focused research question • Some studies may have been missed based on listed inclusion criteria
Author: Bramer (2020) Methodology: Phenomenology	N=12 nursing students Setting: United Kingdom	Recommendations: • A blended learning approach involving online and face to face education	Credibility: **Medium** • Researchers were not trained in focus group discussions

Study/Design	Methods	Key Results	Comments
Purpose: Explore third-year adult nursing students experiences with online learning	Data collection: • Two focus groups • Five in one group and 7 in the other group • Auto recorded • Guided discussion	• Virtual Classroom for interaction and confidence building • Flexible approach which should be integrated into adult learning Themes: • Lack of relationship building • Convenience • Accessibility • Individualized learning • Enjoyed virtual classroom experience • Wider range of knowledge from an actual classroom	• Thematic analysis generated themes but does not specify how this occurred • Recordings transcribed verbatim • Clear statement of findings
Authors: Bulut et al. (2010) Methodology: Cross-sectional Purpose: Evaluate the effectiveness of a mentorship program in nursing education	N=62 first-year nursing students and 58 fourth-year students Setting: University in Turkey Data collection: • Questionnaires developed by the researchers Outcomes: • Students benefited from the mentorship • Attitude of the mentor was an important barrier	Mentorship: • Supportive: 71% agreed • Bothered by attitude:86% partly agreed • Mentor listened: 61% agreed	Strength of Design: **Weak** Quality: Medium • Weak statistical analysis reported • Random sampling was not used • Data collection instruments were tested with a sample of students before use
Authors: Carius et al. (2016) Methodology: Qualitative Exploratory	N=15 executives and 9 employees participated in semistructured interviews	Recommendations: • Structured on the job training • Knowledge of legal and ethical issues privacy and data management	Credibility: **High** • Dependability protected by a semistructured interview guide and final discussions among the researchers

Study/Design	Methods	Key Results	Comments
Purpose: Explore the knowledge skills and attitudes required for telehealth practice	Setting: Telehealth service centres in Germany and Switzerland Data collection: • semistructured interview guide utilized • Interviews were face-to-face or by telephone • final discussions among the researchers • Questions guided by current research, pilot tested and open-ended	Themes: • Strong communication skills • Active listening skills • Motivation and being assertive • Empathetic skills	• Credibility strengthened by including telenurses, managers and men and women with different experiences of telemedicine • Participants invited to comment on their interview transcript to increase trustworthiness • Data were analyzed thematically using content analysis
Authors: Carter et al. (2010) Methodology: Qualitative Exploratory Purpose: Explore the educational needs of Canadian telehealth nurses	N=138 telehealth nurses Setting: Canada Data collection: • Telehealth Nursing Needs Assessment Tool utilized • Open-ended questions completed through email, telephone and face-to-face and data collected coded for themes	Findings: • Telehealth competencies are developed through appropriate education • Continuing education through technology essential • New grads no advanced skills/experiences • Nurses have life and professional experience Themes: • Descriptors of an effective telehealth nurse • Day-to-day activities of a telehealth nurse • New graduate nurses' readiness for telepractice • Suggested knowledge, skills, and attitudes	Credibility: **Medium** • Data were analyzed using the Miles and Huberman-which involved rigorous data extraction- data reduction, data display and conclusion drawing verification • Researchers frequently met during initial analysis when codes were generated • Once codes were established a more in-depth analysis was conducted producing categories and sub-categories • Open-ended questions were not tested before use • Not all provinces in Canada were represented

Study/Design	Methods	Key Results	Comments
Authors: Gifford et al. (2012) Methodology: Uncontrolled Before-After (UCBA) Purpose: Explore the effects of Behavioral Telehealth Ethical Competency Training	N=21 Alaska native and non-native professionals Setting: Urban and Rural health centres in Alaska Data collection: • Pre and post-test • Self-report competency assessment • 3 day face-to-face instruction on behavioural telehealth competencies Outcomes: • Provided written responses to standardized prompts developed by researchers following pre and post video vignettes	**Proportion and Mean (M)** • Competency score: Before training: M=7.57; SD=4.2 After training: M= 12.07; SD= 4.2 • Participants competent in telehealth (M=4.3, SD=0.72) • 2 raters independently coded responses • Participants increased their overall skills	Strength of Design: **Weak** Quality: Medium • Control of confounders is weak as potential confounders were not controlled in the analysis • Single site limits the generalizability of results • Internal consistency reliability for perceived telebehaviour health competency (Cronbach's alpha = 0.96) • Coders reached an 86% interrater reliability
Authors: Green et al. (2016) Methodology: Interpretative Phenomenology Purpose: Investigate how service providers experience service separation through telehealth technology	N=33 telehealth specialists through snowball sampling Setting: Rural and regional hospital and home settings in Australia Data collection: • 12 months of fieldwork • In-depth interviews lasting 45 minutes	Findings: • Loss of physical touch • Lack of face-to-face contact had a negative impact • Discomfort with videoconferencing and need for proper camera set up • Need for mentorship and coaching • Familiarity with technology required	Credibility: **Medium** • Data saturation and repetitive themes identified after 11 interviews • Lincoln and Guba's constant comparative method used to extract themes and establish rigour • Data initially manually code by first author • A second intensive phase involved monthly meetings with all three authors

Study/Design	Methods	Key Results	Comments
		Themes: • Depersonalization • Clinical voyeurism • Negotiating intangibility Managing change	
Authors: Henry et al. (2017) Methodology: Qualitative systematic review Purpose: Describe interpersonal clinician behaviors and attributes of care in telehealth delivery	N=45 studies Data collection: • Comprehensive search of CINAHL, ERIC Psychinfo, Proquest and Pub Med.	Findings: • The need for interpersonal skill • Provider-patient interaction important educational need • Need for formalized training for videoconferencing inclusive of proper camera placement Themes: • Preinteractional • Verbal communication • Nonverbal communication • Relational • Environmental factors • Educational needs	Credibility: **Medium** • Extensive search with clear selection criteria • Clearly focused research question • Right studies included however low numbers retrieved • Independent review of each article by two authors • Through a series of discussions among all researchers data were classified and themes revised • Benefits worth the cost as it adds to the field of research
Authors: Honey & Wright. (2018) Methodology: Descriptive qualitative study Purpose: Explore what nurses consider important to confidently and competently participate in telehealth	N= 9 registered nurses recruited through snowball sampling Setting: New Zealand Data collection: • Single semistructured interviews • 40-60 minutes in length • Face-to-face, by telephone, or videoconferencing	Findings: • Education and training to alleviate anxiety and increase confidence • Training required related to videoconferencing • Advance physical assessment and critical thinking skills identified • Opportunity to observe telehealth before participating	Credibility: **Medium** • Rigour was established by providing the participants with the opportunity to review transcripts of the interview to validate findings • Dependability was established by semistructured interviews using a guide to ensure a consistent approach • Confirmability was illustrated through quotes from participants

Study/Design	Methods	Key Results	Comments
		Themes: • The journey from novice to expert • Hands on training • Initial use of telehealth • Mentorship • Technological know-how • Speciality experience	
Authors: Knudsen et at. (2018) Methodology: Interpretive description Purpose: Explore rheumatoid arthritis (RA)patients experience with telehealth follow up	N=15 patients with RA through purposeful sampling Setting: Rheumatology clinic in Denmark Data collection: • Semistructured interviews carried out in 3 phases • Each phase consisted of 5 interviews	• Natural to assume responsibility for own health outcomes • Confidence in responding to questions • Communication is essential and sometimes difficult through technology • Sense of security and confidence Themes: • A flexible solution • Responsibility • Knowledge of RA • Communication and involvement • Continuity • The keen and the reluctant	Credibility: **High** • Themes and main categories were ensured by an ongoing discussion between all authors • Transferability and external validity limited to this setting • Sample had low disease activities which could have provided a favourable outcome • Interviews conducted by the first author and were audiotaped and transcribed verbatim
Authors: Koivunen & Saranto. (2017) Methodology: Systematic review of qualitative studies	N=21 studies Setting: Studies took place in Canada, Finland, Netherlands, Norway, Sweden, United Kingdom, and the United States	Findings: • Lack of basic keyboard skills and handling technology equipment • Inadequate support, training and insufficient experience • Identified need for a new and effective method for	Credibility: **Medium** • Data independently reviewed by both authors • Clearly focused question • Data extraction completed using a framework and researchers collaborated and used a consistent approach

Study/Design	Methods	Key Results	Comments
Purpose: Synthesis research on nursing experiences of facilitators and barriers to telehealth nursing practice	Data collection: • Comprehensive search of international electronic databases PubMed, CINAHL, ERIC, Web of Science/Web of Knowledge, Pub Med, Scopus, and Finnish databases	education, training, and support in practice • Change from traditional face-to-face nursing requires support Themes: • Nurses skill and attitudes • Nurses work and operations • Organizational factors • Patient-nurse relationship	• Some relevant articles many have been missed as a result of search terms utilized
Authors: Lundahl et al. (2013) Methodology: Systematic review of randomized control trials Purpose: Examine the use of Motivational Interviewing (MI) in medical settings	N=48 studies Data collection: Comprehensive search of PubMed, Medline, CINAHL, Health Source: Nursing/Academic Edition, PsycARTICLES, PsycINFO, Web of Knowledge, Scopus, and Social Work Abstracts Outcomes: All studies independently coded by two authors	• The magnitude of effect of MI intervention compared to no MI intervention (OR=1.55) • MI intervention compared to no MI intervention on the same outcome measures: Exercise: OR=1.47; CI= 1.19-1.81) Weight loss: OR=1.17; CI=1.09-1.27 Blood pressure reduction: OR=1.65; CI= 1.24-2.19 • MI can be practiced by a variety of clinicians in different formats and settings	Strength of Design: **Strong** Quality: Medium • Study rigour was assessed using existing instruments and an 18-point scale • Each study was rated by two or more authors • Three comparison groups established and Odds Ratio was utilized for comparison • Included studies had high external validity • High inter-rater reliability (r=0.85)
Authors: Miguel et al. (2013) Methodology: Randomized controlled trial Purpose: Address the gap in knowledge on	N=80 participants with COPD randomized using STATA version 9 • Telehealth group (TG) n=40 • Control group (CG) n=40 • TG received telehealth equipment and were	• Success was defined as decreased health care utilization, cost effectiveness and QoL • TG were hospitalized less and spent 77 fewer days in hospital	Strength of Design: Strong Quality: Medium • The quality of life questionnaire was self-reported therefore social desirability bias possible • Power was not adequate due to small sample

Study/Design	Methods	Key Results	Comments
health service utilization, cost-effectiveness and associated benefits of telehealth for COPD patients	monitored daily by a telehealth nurse • CG received regular care Setting: Western Australia Data collection: • QoL measured using chronic respiratory questionnaire • Patient satisfaction evaluated by face to face interviews • Use of health services was recorded by the patient and was collected by monthly phone call Outcomes: • Telehealth monitoring and nursing intervention had a positive benefit on patients living with COPD and reduced emergency visits, hospital admissions and days in hospital	• Cost savings was identified in the TG ($2931 per person) • There was no statistically significant difference in QoL	• Face to face interview for patient satisfaction could be affected by interviewer bias • Use of health care services was by self-report which is not a reliable or valid tool • Study took place during summer when COPD patients are less likely to be hospitalized

Authors:
Roing et al. (2012)
 	
Methodology:
Descriptive qualitative study
 	
Purpose:
Explore issues that could threaten patient safety in
	N=12 telehealth nurses
	
	Setting:
	Mid-Sweden
	
	Data collection:
	• During an 18 month period all calls were recorded
	• The dialogue between nurse and patient transcribed as text
		Findings:
		• Safety issues in:
		  • gathering information
		  • cognitive processing
		  • output
		
		• Patient safety important part of telehealth experience
			Credibility: **High**
			
			• Analysis conducted by the first author with the second and third author acting as co-readers
			
			• Coding was generated with the assistance of a computer software program

Study/Design	Methods	Key Results	Comments

telenursing dialogues		• Telehealth nursing education to address safety concerns
		
		Themes:
		• Safety threats related to:
		  • surrounding society
		  • the organization
		  • telenurse
		  • caller
			• Codes compared for differences and similarities and sorted into categories
			
			• Confirmability evident in quotes utilized

Authors:
Sharma & Clarke. (2014)
 	
Methodology:
Interpretative Phenomenology
 	
Purpose:
Describe the experience and challenges of integration telehealth technology within existing care routines
	N=16 participants (Community matrons, congestive heart failure nurses, chronic obstructive pulmonary disease nurses and community support works)
	
	Setting:
	Nottingham, United Kingdom
	
	Data collection:
	• Three focus group discussion before using telehealth technology
	• 8 in-depth semistructured interviews were conducted I year after service roll-out
		Findings:
		• Threats to:
		  • Daily work routine
		  • Daily interaction
		  • Clinical expertise
		
		• Technical issues related to skillset
		
		• Challenges result of inappropriate training and lack of technical support
		
		Themes:
		• Change to clinical encounter
		• Change to the clinical routines
		• Change to skillsets and expertise
			Credibility: **Medium**
			
			• Confirmability was illustrated through quotes from participants
			
			• Bracketing used by the researchers
			
			• Symbolic interactionism used to apply symbolic meaning participants conveyed in interviews

Author: Tuxbury. (2012) Methodology: Ethnography Purpose: Evaluate the effects of telehealth technology on	N=6 nurses recruited with at least 3 years of telehealth experience Setting: Northeastern United States	Findings: • Identified experiences and presence in telehealth nursing • Experienced the loss of touch • Two examples of presence were identified	Credibility: **High** • Credibility enhanced by immediately reviewing the data and adhering to content analysis • Confirmability and dependability were assured by having three committee

Study/Design	Methods	Key Results	Comments
nurse-patient presence	Data collection: • Face-to-face individual interviews • Interviews were semistructured using 4 questions	using the five steps of- call, response, choosing, meeting, and relating	members review the results and data analysis • Two participants reviewed the results to evaluate confirmability
Authors: van Houwelingen et al. (2016) Methodology: Delphi Study with 4 rounds Purpose: Explore what knowledge, attitudes and skills nurses need to support community dwelling patients	N= 51 Dutch experts from nursing schools, a hospital, home care agency and technology recruited through snowball sampling Setting: The Netherlands Data collection: • First round online survey • Second round was a modified survey from first round results • Third round was a face-to face three hour meeting • Fourth round open discussion on third round result Outcomes: • Communication a required competency • Specialized knowledge attitudes and skills	Findings: • 27 competencies identified by expert panel • Communicate clearly and enhance contact: 63% agreed • Skills needed to support self-management and empowerment • Attention and education regarding privacy • limitations in collecting patient information	Strength of Design: **Weak** Quality: Low • Low response rate in round two and three respectively, (32%, 25%) which limits representativeness of the sample • Multiple recruitment strategy utilized • Opinion based approach for data collection

Study/Design	Methods	Key Results	Comments
Authors: Walker et al. (2019) Methodology: Systematic review and thematic synthesis of qualitative research Purpose: Explore patient experiences and perceptions of remote monitoring (RM)	N= 16 studies involving 307 patients Setting: United Kingdom, Denmark, Norway, Canada, United States, Taiwan, Australia Data collection: • MEDLINE, Embase, PsychINFO, and CINAHL, from inception to 2017 • Google Scholar and reference list of related studies reviewed • Excluded non-English studies and studies with structured questionnaires	Findings: • Increased awareness and understanding of their condition • Biometric monitoring prompted patient and clinician action • Reduced need for hospitalization • Promoted confidence to self-manage • Feelings of empowerment • Sense of safety/less fear of being alone • Reduced anxiety and stress • Fear of having personal face-to-face contact replaced Themes: • Gaining knowledge and triggering actions • Reassurance and security • Concern about additional burden • Jeopardizing interpersonal connections	Credibility: **Medium** • Researcher triangulation was utilized- two authors independently reviewed themes and discussed with first author • Comprehensiveness of studies utilized was evaluated using a standardized framework • Only half the studies reported data saturation • Excluded English studies and most studies were conducted in high-income countries • Thomas and Harden thematic synthesis utilized

Appendix II

Consultation Report: Development of an Electronic Orientation Tool Kit for the Remote Patient Monitoring Program at Eastern Health

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Consultations with team members involved in the orientation process have been essential in developing an electronic orientation tool kit for the Eastern Health (EH) Remote Patient Monitoring (RPM) program. Consulting and collaborating with team members allows for the identification of key processes and skills specific to this setting, both of which are considered essential for inclusion in an orientation tool kit. Consultations were carried out with team members in a group setting, and private interviews were conducted with the manager, the team leader, and a newly hired nurse. It is important to include all team members in the consultation process, and as this team is small, this approach was achievable. Results from the consultations will be used to inform the development of the orientation tool kit. In this report, I will provide the background for this practicum project, a summary of participants, an overview of data collection, management and analysis, ethical considerations, and how the information from the consultations will be utilized to develop an orientation tool kit for the EH RPM program.

Background

The RPM program within the Eastern Regional Health Authority of Newfoundland and Labrador had an orientation manual containing limited information required in the orientation process. The manual contains information on the program's background and different chronic disease processes and is provided to newly hired staff to review. The need for standardized processes and checklists when orienting newly hired staff has been identified, and the development of a tool kit will address this need.

The need for this tool kit was further strengthened during the COVID-19 pandemic. During this time, two changes to workflow processes occurred. First, all staff members were required to work from home, and secondly, additional staff members were deployed to the RPM program from other areas of health care. It was challenging to provide orientation during this

time as not all information was accessible online, and of the items accessible, they were not located in a centralized location. In addition to these challenges, no standardized checklists exist to ensure that newly hired staff members received the same comprehensive approach to orientation.

Furthermore, the RPM program is currently expanding to other clinical programs within EH and throughout the province. During this expansion, staff members will be integrating technology to provide increased access to services within their current workflow processes. The orientation tool kit will reference skills specific to providing health care using technology. It will be important to share this information with new clinicians integrating technology into their practice. Additionally, this tool kit can serve as a building block in developing orientation tool kits for different telehealth platforms and services.

Conducting consultations is an essential component in the development of this tool kit. Experiences and knowledge of staff members who have previously arranged and participated in newly hired staff orientation can provide valuable insight. In completing these consultations, I was able to capture the experiences of a newly hired staff member, the program manager, the team leader, and all other staff members who have fulfilled the nursing mentorship role. These consultations also provided the opportunity to recognize needs, wants, and expectations from staff currently working in the program. Furthermore, involving a staff member who recently received orientation provided valuable information related to their orientation experience.

The goal of the consultation process was to retrieve information that is specific and relevant to the orientation process within the RPM program at EH.

Specific objectives were:

1. To identify current orientation practices within the RPM program within EH.

2. To identify strategies, learning needs and expectations of staff related to the orientation process.
3. To identify what changes are required to provide a standardized orientation to all new staff.

Participants

A convenience sample for the consultations was identified; all participants were registered nurses (RNs) working within the EH RPM program. The nursing team consists of six registered nurses; four provide patient care, and two are in management positions. Input from all team members was obtained as they all have experiences to contribute to the discussion on developing an orientation tool kit. The program manager was interviewed one-on-one and the change management manager was not interviewed as I hold that position. Of the four RNs providing patient care, one is a team leader, and one recently began working with the RPM program. I interviewed three of these four nurses in a Microsoft Teams Meeting. One of these four nurses was on annual leave at the time of the scheduled interview and did not attend. In addition to their participation in the team meeting, I also interviewed the team leader and a newly hired nurse one-on-one. A newly hired nurse provided their experience and opinion from recently having gone through the orientation process and provided information about processes that may need to be amended or delivered differently. Additionally, consulting with the team leader as well as the program manager in a one-on-one interview was also essential as they have been a part of the program since it began in 2015, and they are consistently involved in the orientation of newly hired staff. The team leader and manager are instrumental in delivering orientation and could speak to how it has evolved over the past several years.

Recruitment involved explaining the practicum project's purpose and asking each individual if they were willing to participate. The script used to explain the purpose of the practicum project and the consultation process to staff can be found in Appendix A. All staff members were aware of the development of an orientation tool kit as it had been previously discussed during our staff meetings and they all verbally agreed to participate in the consultation process.

Data Collection, Management and Analysis

Four interviews were conducted through Microsoft Teams, as all team members worked from home during the current global pandemic. Interviews took place during July 2020 in individual home offices, which were quiet and private. Data were collected using semi-structured interviews. Interview questions contained probes to assist in uncovering key concepts and assist in keeping the interview on track. Participants were encouraged to ask questions, provide comments and speak freely about the orientation process. During the interview process, I took notes as well as recorded all interviews using Microsoft Teams. I clarified any information that I did not understand by repeating to the participants what I had heard. Following each interview, I compared the recording to my notes to ensure I did not miss any information. Each interview conducted was approximately fifteen minutes in duration.

The list of the questions used to guide these interviews can be found in Appendix B. The questions were developed using information retrieved from the integrated literature review as well as from information received from other RPM programs in Canada, which was received through the environmental scan. Interviews were held one-on-one and in a group setting. Common questions were asked to all participants in a group setting, and the manager was asked

the same questions in a one-on-one interview. The team leader and a newly hired nurse were interviewed one-on-one and were asked questions specific to their experiences.

Ethical Considerations

Ethical considerations incorporated in the consultation process included informed agreement and ensuring voluntary participation during the interview process. Before beginning each interview, I explained the interview's purpose and advised all participants that participation was voluntary. I recorded the interviews using Microsoft Teams, with permission from the participants. I ensured participants that I would be the only individual to listen to the recorded interviews to verify the notes I had taken. Additionally, all participants were aware that any information received would remain confidential and only shared with my practicum supervision for the development of this project. A review by the Health Research Ethics Review Board was not required for this consultation process. According to the form found in Appendix C, which identifies B>A, this process's purpose is quality/evaluation, not research; nevertheless, confidentiality and autonomy were maintained, and all participants were treated with respect and dignity.

Confidentiality was maintained by scheduling separate private interviews through a secure video conferencing computer program that connected me to each participant's home office. All video recordings were securely stored on my computer and will be destroyed once the tool kit is developed. Microsoft Word documents that contained notes taken during the interview process were shared with my practicum supervisor through a password-secured email and stored on the same password encrypted computer with a secure firewall.

Consultation Results

Answers to interview questions were analyzed for content and themes, and responses to each question by the different interviewees were compared for similarities and differences. All participants were asked common questions, and some team members were asked additional questions based on experiences they could provide from their role in the program. The three main themes found following analysis of the data were content, process and mentorship.

Content

Content was chosen as a theme to include all feedback received on ideas related to content to be included in the orientation tool kit for the EH RPM program. All participants stated a brief overview of the program and the chronic diseases currently being monitored were important topics to include in the tool kit. It was suggested that these topics be included as a brief overview as nurses who are hired for the EH RPM program must have previous knowledge and experience related to chronic diseases. Also, it was voiced that providing an in-depth orientation specific to chronic diseases would be overwhelming. While participants viewed chronic disease education as a small part of the orientation process, they stated that chronic disease management training was important. As the EH RPM program focuses on behavior management changes and supporting the patient to take ownership of their chronic diseases through self-management, participants stated that chronic disease management training was an important skill for newly hired staff to acquire.

All participants voiced the need for orientation to the technology used and the computer skills required to work as an RPM nurse. Using the platforms to review biometric data, to send a caring note to the patient, and to begin a video call were all tasks identified as unique to the RPM program. Newly hired nurses would not have previous experiences to reflect upon and would

need adequate support and training to become comfortable using the telehealth platforms. Participants also indicated that computer skills related to different computer programs were an important part of the orientation process. The use of Excel spreadsheets, Meditech, Healthe NL Viewer, SharePoint, and the shared drive are all computer programs used by nurses working in the RPM program. Participants voiced that learning how to use the RPM technology and the different computer programs involved online learning and support from the mentors. Developing the knowledge to work within each of these programs was viewed by participants as essential in providing service to the patients and meeting the requirements of the position.

Establishing a therapeutic relationship using technology was also an idea voiced by participants that should be included in the orientation tool kit. Engaging in a field of nursing where the nurse can not touch or sometimes see the patient requires enhanced communication skills (Honey & Wright, 2018; van Houwelingen et al., 2016). Participants stated the importance of motivational interviewing (MI) to assist in establishing a therapeutic relationship and to support the patient in behavior modification as part of chronic disease self-management. Each newly hired nurse should receive MI training, which can be arranged through the program vendor.

The EH RPM program staff members are also involved in program development and integration of the telehealth platform with other clinical services within EH and regional health authorities throughout the province. For these reasons, participants indicated that adult learning principles and how to apply them in the development of education sessions, including PowerPoint presentations, were an important part of the content to be included in the orientation tool kit. Also, from the discussion on program integration, participants indicated that the content

of the orientation tool kit should be generic where possible to allow for adaptation for other health care professionals integrating the technology into their practice.

Process

Process was chosen as a theme to include all feedback received on ideas to be considered for inclusion in the EH RPM program's orientation process. All participants strongly voiced the need to focus on the virtual aspect of providing health care and, therefore, online learning. They suggested that the continuation of current practices was important such as using Teams as a mentorship platform, practicing in the test system on the telehealth platforms and practicing video calls with the mentor.

Participants viewed communication and feedback as important processes during the orientation period. Participants indicated that regular feedback from the mentor was important, as well as feedback from the manager at the end of the orientation period. Staff stated that continuous communication between the mentor and mentee helped to identify areas where additional training was required. Additional training was easy to achieve, using the current customized orientation process, which each newly hired nurse received. Participants stated EH RPM program orientation is not a group process, and they stated this individualized approach to orientation was important to focus on the needs of the individual. Each newly hired nurse brings different nursing experiences. Participants indicated that some newly hired nurses did not need to spend a lot of time learning the technology because they could catch on easily. In this situation, it was good to be able to individualize the orientation process and to allow the newly hired nurse to spend this time on other areas of orientation.

Mentorship

Mentorship was another process that was repeatedly identified during the consultation interviews and is an important part of the communication process. Participants suggested that the development and use of checklists within the shared mentorship process would assist in the communication process, as they would be used during shared mentorship. Shared mentorship involves all RPM nurses who provide patient care sharing the responsibility of mentoring the newly hired nurse. The newly hired nurse would spend time during his or her orientation being mentored by each RPM nurse. Checklists would assist during this process, ensuring that all content and processes were reviewed with the newly hired nurse during the orientation period. Participants stated that the shared mentorship process was unique to the EH RPM program and was a valuable way to experience how all nurses care for patients using technology. Participants also viewed mentorship as a way to learn how to organize the workday as each nurse verbalized having a slightly different approach to organizing and fulfilling their role. All nurses stated they triaged their patients at the beginning of the shift, however, the organization of workload following triage was slightly different among participants. Participants said that shadowing different mentors throughout the orientation process provided education related to communicating with the patient through technology and how to organize workload. Shared mentorship is a process participants stated was beneficial to reinforce common skills utilized by all staff members as well as skills that individual staff members used in building relationships with their patients and fulfilling their daily work requirements.

Implications for Consideration and Conclusion

The results from the consultations with all nursing members of the EH RPM program provided valuable information to assist in the development of an orientation tool kit. As shown in Table 1, several topics and processes were deemed necessary for inclusion in the tool kit.

Table 1

Summary of Recommended Topics and Processes

Topics	Processes
• Overview of RPM • Overview of disease processes • Chronic disease management training • Technology training • How to establish a therapeutic relationship • MI training • Adult learning principles • Self-management of chronic diseases • Paper manual	• Virtual aspect – online learning • Communication and feedback • Individualized and customized • Shared mentorship • Communication skills • Computer skills • Checklists • Organization and workflow • Modifiable for other disciplines

Key topics for inclusion are: 1) MI training, 2) chronic disease management training, 3) online learning, 4) virtual aspect of providing care, 5) continuous communication between the mentee and staff during the orientation process, 6) comprehensive checklists, and 7) shared mentorship. Some of these findings were also found in the literature review and the environmental scan. The environmental scan identified the need to include education on the virtual aspect of telehealth technology and online learning. The literature review found the need for education related to communication skills, such as MI, was important in this area of nursing.

Completing these consultations, which involved the nurses who will utilize this tool kit, ensured they were involved in this tool kit's development process and allowed them to contribute

their thoughts on valuable education components required in the tool kit. Their invaluable experience working in telehealth technology was necessary and relevant to the development of this tool kit, which will be used as part of their workflow during periods of orientation.

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Appendix A
Script Used for Staff Consultations

As you are aware, I am currently enrolled in the Master of Nursing program at Memorial University, and I am developing an orientation tool kit for the EH RPM program. The development of this tool kit will meet two objectives. It will fulfill my program requirement, which involves a practicum project, and it will provide the RPM with an orientation tool kit to use with newly hired nurses. Participation in this interview is voluntary, and any information obtained will remain confidential. Information will only be shared with my practicum supervisor in the development of this tool kit. Also, with your permission, I would like to record this interview so I can compare my notes with the recording following the interview. All data collected and recorded will be destroyed upon completion of this tool kit. I am asking for your participation in this process, as I believe you will provide me with valuable information from your experiences with the orientation process, and your input will provide insight into key items to be included in the tool kit.

Appendix B
Common Questions for all Interviews and Manager Interview

(Note: prompts can be found in parentheses after each question)

1. What aspects of orientation are unique to RPM compared to other areas of nursing? (What about communication skills, video conferencing skills, building a therapeutic relationship, assessment skills?)
2. What information do you believe is essential to include in an orientation tool kit? (What about checklists, learning modules, privacy and confidentiality documents, documentation standards, standard operating procedures, policies?)
3. Do you believe it would be important to include disease-specific information related to the chronic conditions you are monitoring? If so, what types of information should be included? (What about living well with COPD, parameters for COPD as per GOLD classification, New York Heart Association Functional Classification, Diabetes Canada clinical practice guidelines, Canadian Respiratory Guidelines - COPD action plan?)
4. Do you have any suggestions around the orientation process? Any changes required? (What about mentorship/preceptorship, simulation training, length of orientation, online access?)
5. What barriers do you foresee with the implementation of an orientation tool kit? (What about keeping the tool kit updated, access to items identified in the tool kit, for example, Motivational Interviewing as this training is outside of EH?)
6. Do you have any questions or comments?

Semi-structured Team Leader Questions

1. What problems or issues, if any, do you see with nurse orientating to the program? (What about computer skills, knowledge of chronic diseases, communication skills, assessment skills?)
2. What type of questions are you asked during the orientation period? (What about using a new documentation system, losing a sense of personal connection with the patient, concerns about privacy and confidentiality?)
3. How do you establish a therapeutic relationship through telehealth technology? (What about the tone of voice, eye contact, engaging family members?)
4. What are some challenges to the orientation process? What processes are easy to follow? (What about virtual orientation, availability of patients from all programs to provide experience, fulfilling the mentorship role?)
5. How do you fulfil the mentorship role using telehealth technology? (What about having the nurse shadow you, you shadowing the new hire. Providing examples of personal experience, letting the nurse ask questions, being supportive?)

Semi-structured Newly Hired Team Member Questions

1. What questions did you find yourself asking other staff members? (What about how to access the telehealth platform, initiate a video call, deal with difficult patients, and meet enrollment criteria?)
2. What did you like the most about the orientation process? (What about the accessibility of mentor, ability to ask questions, practicing skills with guidance?)

3. What do you think is missing from orientation and would like to see added, and why? (What about onsite training, simulation exercises, standardized checklists, learning modules?)
4. Do you feel your orientation was sufficient? How was it sufficient or insufficient? (What about the length, support provided, opportunity to ask questions?)
5. How was your orientation and training on the use of the technology used to deliver health care services? (What about the opportunity to perform video conferencing, sending caring messages, collaborating with other healthcare professionals in a telehealth visit?)

Appendix C
Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review		☒
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?		☒
	IF YES to either of the above, the project should be submitted to a Research Ethics Board. **IF NO** to both questions, continue to complete the checklist.		
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	X	
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?		☒
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?		☒
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?		☒
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?		☒
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)		**1**	**6**
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	x	
9.	Is the project intended to define a best practice within your organization or practice?	☒	
10.	Would the project still be done at your site, even if there were no opportunity to publish the results or if the results might not be applicable anywhere else?		☒
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program, Organization, or region, rather than using more general terminology such as rural vs. urban populations?	☒	
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?		X
LINE B: SUBTOTAL Questions 8 through 12 = (Count the # of Yes responses)		**3**	**2**

	SUMMARY **A=1 and B=3, therefore, B>A**		

Highlight the Appropriate Interpretation:

- If the sum of Line A is greater than Line B, the most probable purpose is **research**. The project should be submitted to an REB.
- If the sum of Line B is greater than Line A, the most probable purpose is **quality/evaluation**. Proceed with locally relevant process for ethics review (may not necessarily involve an REB).
- If the sums are equal, seek a second opinion to further explore whether the project should be classified as Research or as Quality and Evaluation.

These guidelines are used at Memorial University of Newfoundland and were adapted from ALBERTA RESEARCH ETHICS COMMUNITY CONSENSUS INITIATIVE (ARECCI). Further information can be found at: http://www.hrea.ca/Ethics-Review-Required.aspx.

Appendix III

Environmental Scan Report: Development of an Electronic Orientation Toolkit for the Remote Patient Monitoring Program at Eastern Health

Carolyn Gosse

Memorial University of Newfoundland School of Nursing

Conducting an environmental scan is an important way to gather information related to orientation tools and processes utilized by other Remote Patient Monitoring (RPM) programs in Canada. Information received will be reviewed and considered in the development of an electronic orientation tool kit for the Eastern Health (EH) RPM program. Four RPM programs in Canada were contacted by email and asked if they had any information on the orientation process and if they were willing to share it. Two programs responded to my request and provided information used in their organizations for staff orientation. Results from the environmental scan will be used to inform and provide insight into the development of this orientation toolkit for the EH RPM program. In this report, I will provide the background for this practicum project, a summary of informants, a description of how informants were chosen, a description of ethical considerations and results, and how the information from the environmental scan will be utilized in the development of an orientation tool kit for the EH RPM program.

Background

The EH RPM program provides orientation to all new staff, however, there are no standardized checklists or processes located in a toolkit for easy access. I plan to develop an orientation toolkit consisting of processes and tools that can easily be accessible during times of orientation. Recently, during the COVID-19 pandemic, all staff members were required to work from home and with the deployment of staff to the RPM program during this time, it was challenging to provide orientation for two reasons. First, not all information was accessible online, and secondly, the items that were accessible were not located in a centralized location. In addition to these challenges, no standardized checklists exist to ensure a newly hired nurse has been educated on all the components required to work independently in the RPM setting.

Completing an environmental scan is an essential component of this project to determine

if other RPM programs within Canada have an orientation toolkit or process for new staff members being orientated. Contacting other established programs and asking them to share any tools, content, and processes they have related to the orientation of new staff members will help me in the development of this orientation toolkit. The information I received was reviewed and provided information on current practices in other organizations. The information received was also used to inform the development of the questions asked during the consultation interviews. Orientation to health services provided through telehealth technology, such as RPM, requires focusing on unique nursing competencies, such as video conferencing assessment skills and enhanced communication skills (Honey & Wright, 2018; van Houwelingen et al., 2016). It is helpful to identify if and how other RPM programs provide orientation to these telehealth specific nursing skills as I plan to incorporate these processes into the orientation toolkit for the EH RPM program.

Sources of Information

As part of the environmental scan, four RPM programs in Canada were contacted by email and asked if they would share information related to their orientation process. These four programs were chosen in consultation with the program manager as she had established working relationships with these programs since the EH RPM program began in 2015. Additionally, RPM in Canada is not available in every province, therefore, I was limited to the areas I could approach to request information related to RPM orientation.

I contacted Island Health in British Columbia, Prince Edward Island Remote Patient Monitoring Program, Ontario Telehomecare Program and The South Central Community Development Corporation in London, Ontario. I explained that I am developing an orientation toolkit as part of my Master's practicum project, and I would like to discuss any processes or

toolkits they have in place. I also asked them if they would share any material. I advised them that any information they provided would remain confidential and would only be shared with my practicum supervisor for the practicum project. I also advised them if I considered using any of the information they provided to me, I would request permission from them first. The email sent to all potential information sources can be found in Appendix A. A follow-up reminder was sent 9 days after the initial email to those who had not responded.

Ethical Considerations

Ethical considerations incorporated in the environmental scan were informed agreement and ensuring voluntary participation during the process. I provided the key contacts with adequate details of the environmental scan rationale and allowed them to freely choose to participate. Key contacts were advised that all information provided would remain confidential and only shared with my practicum supervisor for the development of my project. I also advised key contacts that if I decided to use any information they shared, I would request their permission first. All information collected was stored securely on a password-encrypted computer, which has a secure network and firewalls installed to protect from unauthorized individuals accessing stored information. The computer also requires two passwords to access any information. A review by the Health Research Ethics Review Board was not required for this environmental scan. According to the form found in Appendix B, which identifies B>A, this process's purpose is quality/evaluation, not research.

Results

A response was received from two programs, Island Health in British Columbia and Ontario Telehomecare Program. Both of these programs shared with me the information they currently use for orientation. Island Health in British Columbia provided me with their learning

passport and what they called an outdated skills checklist. The learning passport involved a list of 7 self-directed activities that the nurse must review and directions regarding a one-on-one mentorship process. The self-directed activities were home health monitoring education, heart failure (HF) education, chronic obstructive pulmonary disease (COPD) education, diabetes education, an anxiety screening tool, a depression screening tool, and a pain screening tool. The outdated checklist coincided with the learning passport and indicated whether the nurse met the educational requirements identified in the learning passport.

The Ontario Telehomecare Program also responded to my request and provided resources on their training program, which included a clinical training curriculum and e-learning modules. The clinical training curriculum provided six steps a newly hired nurse must go through during the orientation process. These steps were: 1) complete e-learning curriculum, 2) review key COPD, HF, and self-management support resources, 3) attend remote web/teleconference sessions, 4) job shadow/mentor with a colleague, 5) complete mandatory post remote training modules and 6) attend next scheduled in-person health coaching training. The mandatory post remote training modules, which consist of post-tests following education, included: 1) management of COPD, 2) management of HF, 3) management of diabetes, 4) management of hypertension, 5) management of dyspnea, 6) integrating tobacco interventions into daily practice, 7) embracing cultural diversity in health care, 8) telehomecare privacy training and 9) telehomecare security training. Each step of the six-step training curriculum was given time in hours for completion and listed the newly hired staff member's core competency following the completion of each step. They also provided me with access to five e-learning modules covered in the first step of the clinical training curriculum. These e-learning modules covered the topics of health coaching, resolving ambivalence, action planning and problem-

solving, behavior change approach and information security for telehomecare. Each e-learning module provided education using PowerPoints, and all of the e-learning modules had a narrated presentation with the slides except for the information security for telehomecare module.

Implications and Conclusion

Two common processes found in the information received from the environmental scan involved education specific to using technology to deliver health services and education related to the specific chronic diseases these programs monitor. From the consultations completed with members of the EH RPM team, it was found that education related to chronic disease was not a priority as new staff members already had clinical experiences and knowledge in this area; however, education related to telehealth technology was essential to include in this toolkit. The literature also focused on the need for education on telehealth technology and the skills required in the telehealth environment, such as enhanced communication skills and videoconferencing presence. The findings from the environmental scan, notably the Ontario Telehomecare Program e-learning modules, provided me with ideas to explore to incorporate education related to telehealth technology into the orientation toolkit for the EH RPM program. I will explore the layout and presentation of orientation checklists, as well as the topics included in the PowerPoint educational modules provided.

The completion of an environmental scan involving other RPM programs in Canada provided educational strategies and content to consider for inclusion in the EH RPM tool kit that otherwise may not have been considered. Materials on topics received, such as information on behavior modification, information security, and motivational interviewing, were helpful as well as the idea of post-tests and narrated presentations. The results from this environmental scan validated the need to provide education on topics related to the use of telehealth technology,

which were findings that had also emerged from both the literature review and the consultations interviews.

References

Honey, M., & Wright, J. (2018). Nurses developing confidence and competence in telehealth: Results of a descriptive qualitative study. Contemporary Nurse, 54(4-5), 472-482. https://doi.org/10.1080/10376178.2018.1530945

van Houwelingen, C. T. M., Moerman, A. H., Ettema, R. G. A., Kort, H. S. M., & ten Cate, O. (2016). Competencies required for nursing telehealth activities: A Delphi-study. Nurse Education Today, 39, 50-62. http://doi.org/10.1016/j.nedt.2015.12.025

Appendix A
Email of Inquiry

To [Name],

I am writing to ask if you have any information or materials on the orientation of new staff within your program. I received your name and contact information from the Remote Patient Monitoring program manager at Eastern Health (EH) in Newfoundland and Labrador, Kim Ghaney.

My name is Carolyn Gosse, and I am a Master's of Nursing Student at Memorial University of Newfoundland as well as a Change Manager with the RPM Program at EH in Newfoundland and Labrador. I am completing my practicum project, which involves the development of an orientation manual for new staff hired within the RPM program at EH.

As part of my environmental scan, I am interested to know if your program has a standardized orientation process in place or an orientation manual and if you are willing to share it or talk about it with me. Should you chose to provide me with information, it is entirely voluntary, and any information provide will be held in confidence and shared only with my practicum supervisor. Should I consider using any information that you share, I will request permission before using it.

If you have any questions, I can be reached by email or through the contact number listed below. I appreciate any assistance you can offer in the development of this educational resource for the RPM at EH in Newfoundland and Labrador.

Sincerely,

Carolyn Gosse

709.699.4850

Carolyn.gosse@easternhealth.ca

Appendix B
Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review		☒
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?		☒
	IF YES to either of the above, the project should be submitted to a Research Ethics Board. **IF NO** to both questions, continue to complete the checklist.		
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	☒	
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?		☒
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?		☒
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?		☒
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?		☒
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)		**1**	**6**
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	x	
9.	Is the project intended to define a best practice within your organization or practice?	☒	
10.	Would the project still be done at your site, even if there were no opportunity to publish the results or if the results might not be applicable anywhere else?	☒	
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program, Organization, or region, rather than using more general terminology such as rural vs. urban populations?	☒	
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?		**x**
LINE B: SUBTOTAL Questions 8 through 12 = (Count the # of Yes responses)		**4**	**1**
	SUMMARY **A=1 and B=4, therefore, B>A**		

Highlight the Appropriate Interpretation:

- If the sum of Line A is greater than Line B, the most probable purpose is **Research**. The project should be submitted to an REB.
- If the sum of Line B is greater than Line A, the most probable purpose is **quality/evaluation**. Proceed with locally relevant process for ethics review (may not necessarily involve an REB).
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Appendix IV

Electronic Orientation Toolkit for the Remote Patient Monitoring Program

Carolyn Gosse

Memorial University of Newfoundland School of Nursing

ORIENTATION

EASTERN HEALTH REMOTE PATIENT MONITORING PROGRAM

FALL 2020

WELCOME

Welcome to the Eastern Health (EH) Remote Patient Monitoring (RPM) Program. This orientation toolkit has been developed to orientate newly hired staff to the EH RPM program. It may also be used as a resource tool to educate staff in other clinical programs that are integrating the technology into their clinical practice areas.

The development of this toolkit has been completed in consultation with registered nurses (RNs) working in the EH RPM program. Additionally, important information and topics for consideration were found through an integrated literature review and an environmental scan involving other RPM programs within Canada. This toolkit will help offer a consistent orientation to all newly hired staff and focus on assisting in the transition to a technology-based work environment.

This learning resource will provide the necessary information that newly hired staff will need to begin using technology to provide service to patients remotely. A formal orientation with a duration of approximately four weeks will be provided to all newly hired staff. The length of orientation for transition staff will be based on their assigned tasks during the 13-week transition period. This toolkit will assist in guiding and tailoring orientation to the newly hired staff member's learning needs and will be accessible to all individuals involved in the orientation process, as it is available electronically.

TABLE OF CONTENTS

Module One: Introduction to Orientation

In this module, you will find information that will guide your orientation and learning experience. This module contains several components, such as learning objectives, an overview of orientation, an orientation schedule, a self-competency checklist, a learning plan, and a learning checklist. By completing this module, you will be able to individualize your orientation to suit your identified learning needs.

Learning Objectives

After completing this module, you will be able to:

1. Describe the orientation components and schedule;
2. Develop learning objectives from your self-assessment;
3. Develop an individualized learning plan;
   and
4. Customize an orientation schedule with your mentor, suited to your learning needs.

Overview of Orientation

Orientation will consist of four weeks of learning under the guidance of an assigned mentor from the EH RPM team. Your learning experience will consist of computer simulation, sessions with your mentor, education sessions, and self-directed learning.

Computer simulated learning will be available in the sandbox of the Maestro 2 platform. You will be provided with the opportunity throughout your orientation to assess and triage test patients and familiarize yourself with this platform.

Mentorship may be completed face to face or through Microsoft Teams. Mentorship is a continuous process that will extend beyond the orientation period. You will meet with your mentor on the first day to develop an orientation schedule that meets your learning needs. Each team member will provide you with support and guidance as you transition from novice to expert in the field of telehealth nursing.

Education sessions will be scheduled and provided during your orientation period. The dates and times of these sessions will be determined based on presenter availability. These sessions will be completed virtually through Microsoft Teams or Zoom. Your mentor will notify you of the confirmed dates and times of these sessions.

You will complete **learning modules** found in this toolkit during your orientation period. Modules have been scheduled for each week of your orientation. These modules are self-directed, and you will be provided time to complete each module. Your mentor will be available to answer any questions or provide further context to the material provided each week.

A detailed schedule can be found in the next section. Here is a brief overview of the orientation program:

You will spend the **first week** with the team lead, who will review important information specific to the program, and you will receive training on the use of the RPM platform.

During the **second week**, you will participate in simulated learning experiences within the EH RPM platform using test patients.

During the **third and fourth weeks**, you will be mentored by different members of the EH RPM team, where you be provided with the opportunity to shadow individual team members as they care for patients. You will be given the opportunity to complete follow-up calls to patients based on biometric alerts in the presence of your mentor.

Orientation Schedule

Each week of orientation, you will be required to complete learning modules and other activities to help you meet your learning objectives and action items identified on your self-assessment checklist. Your orientation checklist and schedule will be used to keep track of the items you complete and be used as a communication tool between yourself and your various mentors. During the first week of orientation, you will also need to develop your learning plan, and you will review and update the objectives in your learning plan weekly.

Pause & Think

Have you completed learning plans before? If so, was it helpful?

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Please use the following orientation schedule to keep track of your learning. Once you complete each week's activities, please enter the date that it was completed.

Week 1 and Module One: Introduction to Orientation and Module Two: Introduction to RPM	**Date Completed**
Day 1 • Complete all forms to complete for technology access • Complete the self-assessment competency checklist found in Module One • Complete your learning checklist found in Module One	
Day 2-5 • Complete Module One, which provides an overview of orientation • Complete your learning plan found in Module One • Complete Module Two, which provides an introduction to the EH RPM program and the mentorship process • Complete Leap learning modules as identified in the learning checklist • You will be scheduled for Maestro 2, HealthE NL viewer, workload measurement, and motivational interviewing training • Review all Standard Operating Procedures (SOPs) and policies with your mentor • Complete any additional computer education you have identified through your self-assessment	
Week 2 and Module Three: Computer Technology	**Date Completed**
• Review/revise your learning plan for week 2 found in Module One • Complete Module Three, which describes the computer technology platforms utilized by the EH RPM program • Review and update your learning checklist found in Module One • Review your self-assessment competency checklist found in Module One	
• Review different workflow processes such as datamining, enrolling a patient, calling to offer the program, and the introductory call with your mentor	

• Receive a demonstration on how datamining, screening and enrolling a patient will be linked to the use of Excel spreadsheets • Complete simulation exercises in the test site of Maestro 2	
Week 3 and Module Four: Education	**Date Completed**
• Review/revise your learning plan for week 3 found in Module One • Complete Module Four, which describes the different educational components required to fulfil your role as an RPM nurse • Review and update your learning checklist found in Module One • Review your self-assessment competency checklist found in Module One • Review information on PowerPoint presentations for program development provided by Care Innovations • Review the clinical algorithms to address biometric and symptom question alerts with your mentor • Shadow your mentor as he/she cares for patients using remote technology	
Week 4 and Module Five: Virtual Presence	**Date Completed**
• Review/revise your learning plan for week 4 found in Module One • Complete Module Five, which describes virtual presence • Review and update your learning checklist found in Module One • Complete your post-orientation self-assessment found in Module One • Review Care Innovation documents related to camera placement and lighting for video calls • Review guidelines related to confidentiality and privacy during virtual visits • Complete a video call with your mentor using the demo IPAD • Provide service to patients under guidance from your mentor • Meet with the program manager to review your self-assessment and provide feedback on your orientation experience	

Orientation Toolkit

In this toolkit, you will find modules that will guide your orientation and learning experience. This toolkit contains several components, such as a self-competency assessment, learning modules, and a schedule to assist you during the orientation process.
This toolkit can be found in Microsoft Office SharePoint. You will need to save it to your desktop and complete and update the various forms during your four-week orientation period.

There are five modules in the toolkit, which you are responsible for completing.

The **first module** introduces the orientation process and provides you with several components and tools to keep track of your learnings.

The **second module** introduces RPM, specifically the EH RPM program, focusing on the background, history, and mentorship strategy.

The **third module** focuses on the computer technology platforms you will need to be familiar with to fulfill your role as an RPM nurse.

The **fourth module** will discuss the disease processes of the conditions currently being followed by the EH RPM program as well as ways to assist patients in managing their chronic disease.

The **final module** will discuss virtual presence, which is essential during video conference interactions with patients.

Completing these modules and the orientation process will help you achieve the learning objectives created in your learning plan and advance your skills and knowledge in areas where you identified yourself as novice in your self–assessment competency checklist.

Self-Assessment Competency Checklist

Date: _____ Name: _____

Previous Work Experience: _____

The following is a list of skills and knowledge areas for you to review and self-assess. On the first day of orientation, complete the list by initialling and dating the appropriate columns. This will help you identify your learning needs so that your orientation will be structured to meets those identified needs. After completing this competency assessment, you will be prepared to create your learning plan. You will be required to review this document at the end of each week of orientation and update it accordingly. You will review this tool with your manager before the end of your probationary period and indicate what competencies you have obtained or improved upon in that period. At the end of your orientation, you will review the checklist and seek additional education and clinical guidance to perform competencies not available during the orientation or are not comfortable performing independently. The manager forwards the completed form to your employee file in the Department of Human Resources.

This self-assessment tool was developed using Benner's Novice to Expert theoretical model. Benner's model suggests that in the development of skills, one passes through five stages of proficiency: novice, advanced beginner, competent, proficient, and expert (Thomas & Kellgren, 2017). Please review the description of each stage and self-assess yourself accordingly.

Benner's Novice to Expert	
Novice	• Beginner with no experience
Advanced Beginner	• Has prior experience • Demonstrates acceptable performance
Competent	• Gains perspective from planning own action based on analytical thinking
Proficient	• Perceives and understands situations in whole parts • More holistic understanding
Expert	• No longer relies on principles or guides • Intuitive grasp of clinical situation

Skill/Knowledge	Novice	Advanced Beginner	Competent	Proficient	Expert	Comments
Computer Skills						
Microsoft Teams						
Excel Spreadsheets						
Microsoft Outlook						
SharePoint						
Share Drive						
Maestro 2						
HealthE NL Viewer						
Meditech						

Skill/Knowledge	Novice	Advanced Beginner	Competent	Proficient	Expert	Comments
Workload Measurement (under development)						
PowerPoint Development						
Remote Patient Monitoring Program and Disease Processes	**Novice**	**Advanced Beginner**	**Competent**	**Proficient**	**Expert**	**Comments**
Remote Patient Monitoring Program						
Maintenance Program						
Congestive Heart Failure						
Chronic Obstructive Pulmonary Disease						
Type II Diabetes						
Chronic Disease Self-Management						
Motivational Interviewing						
Charting	**Novice**	**Advanced Beginner**	**Competent**	**Proficient**	**Expert**	**Comments**
Nursing Assessment						
Consent						
Medication Reconciliation						

Charting	Novice	Beginner	Competent	Proficient	Expert	Comments
Action Plans (as applicable)						
Goal Setting						
Graduation Criteria						
Communication						
Videoconferencing						
Lightening and camera positioning						
Engaging the patient through technology						
Telephone contact/interaction						
Privacy						
Confidentiality						

Reviewed by Manager

Date: _____ RN Signature: _____

Manager's Signature: _____

Comments/ Further Actions:

_____

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Learning Plan

A learning plan will help you keep track of your learning objectives and identify how you will achieve these objectives. A learning plan is meant to be flexible. Therefore, as you implement your learning plan, you may modify learning objectives and add learning activities (Nurses Association of New Brunswick, n.d.). During week one, you are required to create learning objectives based on your self-assessed learning needs. You will need to identify the resources and strategies you will use to meet these objectives and identify the expected outcomes and timelines for meeting your objectives. You must review and update these objectives weekly and identify new learning activities as relevant. Please complete the table below each week in collaboration with your mentor. Your learning plan will also be used as a communication tool between you and your mentors as you progress through the orientation process.

	Learning Objective	Resources /Strategies	Expected Outcomes	Timelines
Week 1				

	Learning Objective	Resources /Strategies	Expected Outcomes	Timelines
Week 2				
	Learning Objective	**Resources /Strategies**	**Expected Outcomes**	**Timelines**
Week 3				

	Learning Objective	Resources /Strategies	Expected Outcomes	Timelines
	Learning Objective	**Resources/Strategies**	**Expected Outcomes**	**Timelines**
Week 4				

Learning Checklist

This checklist consists of learning activities that will help you achieve your learning objectives and provide you with the needed education you identified through your self-assessment.

Your mentor will arrange education sessions, which will be contingent on presenters' availability. Leap learning modules are self-directed and are to be completed independently. Your mentor will review policies and standard operating procedures during your first week of orientation. Please date and initial once these items are completed.

Documents to review/Sessions to complete	Date	Initial
Week 1		
Mandatory Leap Modules: Asbestos WHMIS		
Suggested Leap Modules:		
Customer Service in Healthcare		
Conflict Management-Frontline		
Conflict Management and Respectful Workplace		
Cyber Security Awareness		
Office 365 Outlook Overview		
Office 365 Windows 10-How to use		
Performance Management at Eastern Health		
Social Media in Health Care		
Policies Reviewed by Mentor:		
RPM Role of the Registered Nurse (125-RPM(NUR)-100) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=1654&policyType=P		
Telephone Advice and Positive Patient Identification (125-ADM-100) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=1644&policyType=P		
Privacy and Confidentiality (ADM- 030) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=154&policyType=G		
Retention and Destruction of Scanned Paper Personal Health Records (RM-CR(V)-220) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=601&policyType=G		

Security of Patient/Resident/Client Personal Health Information (RM-CV(VI)-100 http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=238&policyType=G		
Week 1		
Collection of Personal Health Information (ACP-020) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=373&policyType=G		
Documents to review/Sessions to complete	**Date**	**Initial**
Suggested Policies to review:		
Permitted Uses of Patient/Resident/Client Personal Health Information without Consent (RM-CR(I) -180 http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=375&policyType=G		
Consents (LEG-050) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=415&policyType=G Communicating Client Personal Health Information via Electronic Methods (RM-CR(VI)-020) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=168&policyType=G		
Medication Reconciliation at Transition in Care (QRM-070) http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?PolicyID=647&policyType=G		
Standard Operating Procedures Review by Mentor		
Weeks 1-4		
Mandatory Sessions to be Scheduled:		
Maestro 2 Training Session		
HealthE NL Viewer Training Session		
Workload Measure (under development)Session		
Motivational Interviewing Session		

Conclusion

Now that you have completed **Module One: Introduction to Orientation** and have individualized your orientation to suit your identified learning needs, you are ready to move on to **Module Two: An Introduction to RPM**.

Module Two: Introduction to Remote Patient Monitoring (RPM)

In this module, you will be provided with valuable information to know as an RPM nurse. This module contains several components, such as RPM definition and the purpose, mandate, vision, benefits, and history of the Eastern Health (EH) RPM program. The mentorship process will also be described and discussed, as well as the importance of communication during the mentorship process. By completing this module, you will have a better understanding of the EH RPM program and your role within the mentorship strategy utilized.

Learning Objectives

After completing this module, you will be able to:

1. Describe the history, mandate and vision of the EH RPM program;
2. Describe RPM and its benefits;
3. Describe the mentorship process and the mentorship strategy used by EH RPM program; and
4. Explain the importance of communication during the shared mentorship process.

Introduction to Remote Patient Monitoring (RPM)

As a new employee working in the EH RPM program, it is important to understand what RPM is and its value to improving access to health care services and peoples' overall health in the province. This next section will provide you with an understanding of RPM and a description of the EH RPM program.

What is RPM?

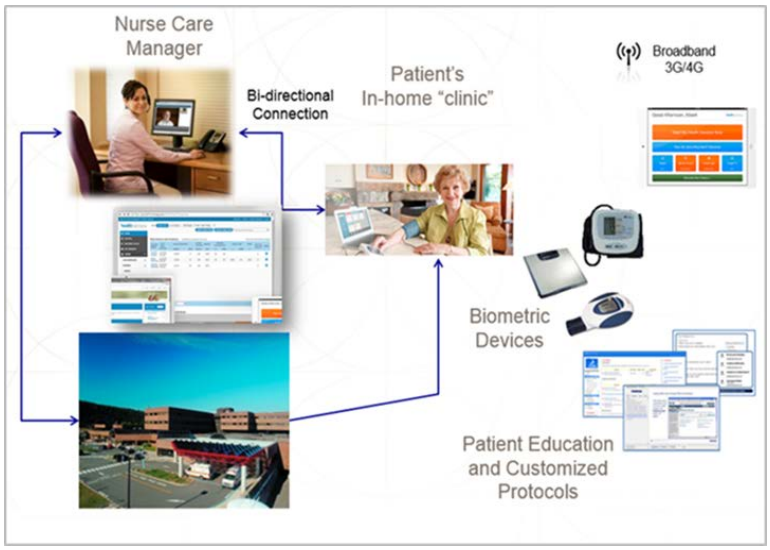
RPM is a health monitoring term covered under the broader definition of telehealth, which refers to all technology modalities available to enhance health care through various telecommunication platforms (Fronczek et al., 2017). RPM is a form of telehealth delivery that monitors patients remotely, typically with chronic conditions, through wireless devices that transmit patient data to the clinician (Fronczek et al., 2017).

Description of EH RPM Program

The EH RPM program cares for patients by using simple technology to provide behavioral coaching to improve their chronic disease self-management. Patients are provided, free of charge, an IPAD, blood pressure cuff, pulse oximeter, and weight scales, all of which are Bluetooth enabled. Blood glucose measurements are taken by the patient's personal glucometer and manually entered into the IPAD. As part of your orientation, your mentor will demonstrate how each peripheral device interacts with the IPAD using a demo kit. You will be given the opportunity to take several test health sessions to become familiar with the process.

Daily biometric readings are transmitted from the patients' peripheral devices through the IPAD to the RPM nurses' dashboard.

The peripheral devices and dashboard are linked using cloud-based technology. You will become familiar with using the dashboard in Module Three and through your virtual training provided by Care Innovations. You will be provided time to practice navigating the dashboard to become proficient in the skill.



Types of Patient and Programs Offered

The EH RPM team mainly monitors patients in the EH region of the province. However, the program has partnered with the precardiac surgery program to monitor patients provincially who

have type II diabetes before cardiac surgery. This valuable service allows patients to improve blood glucose control with the anticipation of decreased post-op complications.

Additionally, the EH RPM program began integrating with other regional health authorities (RHAs) in June 2019, resulting in patients throughout Newfoundland and Labrador availing of RPM services. As an RPM nurse, you will not be involved with monitoring these patients; however, you may be required to support the clinicians from other RHAs who had integrated RPM into their workflow.

Currently, the EH RPM program enrolls adult patients aged 18 years or older who have a diagnosis of Type II Diabetes, Chronic Obstructive Pulmonary Disease (COPD), or Congestive Health Failure (CHF). A combined program for CHF/COPD also exists for patients with both chronic diseases. Additionally, the EH RPM program has a program to monitor patients who have tested positive for COVID-19 with any underlying chronic disease.

The CHF and COPD programs are four months in length, and the Type II Diabetes program is six months in length. The COVID-19 program is typically 14 days; however, the end date is determined in consultation with the Centre for Disease Control Nurse based on patient symptoms.

A maintenance program also exists and can be offered to the patient once the four or six-month program is completed. The maintenance program is different from the main program, as it will only prompt the patient to take biometric readings once a week. Questions about how they are feeling will be provided every second day.

Please watch the following, which illustrates how RPM functions from the patient's side of the technology:

Double left click on the image to open the video

RPM IPAD Video

Referral and Enrollment

Patients can self-refer to the program, are referred by a health care provider either through Meditech or by referral form, or are datamined by program staff. There are specific criteria that need to be met for each chronic disease. Your mentor will review these with you during the review of the standard operating procedure (SOP) for referral screening during week one.

Once a patient is referred or datamined, they are called to offer the program by one of the four RPM nurses. If the patient agrees to be enrolled in the program, they are booked for an enrollment call.

Following the enrollment call, the equipment is ordered and shipped to the patient's home. Once the equipment is received, the patient completes a test session, which will display on your dashboard. You will now complete the introductory call. Your mentor will review the introductory call SOP with you during week one. Please refer to this SOP until you become comfortable with the process.

The number of calls you make to each patient enrolled in the program is patient specific. You are required to make a minimum of two coaching calls. It is anticipated that as the program progresses over the four or six-month period, the patient will learn the appropriate tools to better self-manage their condition and the number of calls you will need to make will decrease.

Why Remote Patient Monitoring in Eastern Health?

The RPM program is a key component of Virtual Care in Eastern Health. In partnership with Canada Health Infoway and the Department of Health and Community Services, Eastern Health launched, in 2015, the first RPM program in the province.

As a new employee working with RPM, you need to know and understand the program's history, purpose, mandate, vision, and benefits. Having this foundational knowledge will help you promote the program, support patients enrolled in the program, and support this change in health care delivery.

The following information on the purpose, mandate, vision, benefits, and history was developed when the program began and can be found on paper in a binder located in the office (Remote Patient Monitoring, 2015).

Purpose

The following information on the purpose is taken from the binder in the office (RPM, 2015).

The EH RPM program objective is to improve patients' chronic disease management knowledge through education, coaching and monitoring, to better manage their care.

To assist in achieving this objective, EH RPM clinicians provide a minimum of two proactive health-coaching calls. Coaching calls are goal-focused and are intended to provide education and support to the patient.

Coaching calls are also provided based on the identified need for additional education by either the patient or the clinician.

Mandate

The following information on the mandate is taken from the binder in the office (RPM, 2015).

The RPM program has a mandate to:

empower patients to take a more active and informed role in managing their chronic condition and to engage patients in improving their knowledge to support them in their self-management ability.

The program meets its mandate by:

- Providing education and support at the start of the program and throughout the program. This is done through proactive goal-focused coaching calls.
- Providing education through daily slides on the device, providing accessible videos and information in the device library and through education delivered one on one from the RPM nurse to the enrolled patient.
- Monitoring biometrics and symptom information, which is entered by the patient and reviewed by the nurse. Patients are educated on how to respond to abnormal values, and nurses will respond to trends that require attention and further coaching or education for the patient.
- Teaching patients to identify early signs of decline and to self-manage these symptoms.
- Collaborating with patients and health care providers to improve quality and access to care and clinical outcomes.

Pause & Think

How do the EH RPM program's purpose and mandate compare to your thoughts and preconceived notions of the program?

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Vision

The following information on the vision is taken from the binder in the office (RPM, 2015).

To enable patients to self-manage their chronic condition at home while achieving and maintaining their optimal wellness.

Key components of the program are to:

- Provide a health service delivery based on an easy-to-use, integrated remote patient monitoring technology that supports patients' access.
- Improve quality of care and clinical outcomes, including early detection and intervention of exacerbations to reduce emergency room visits and hospitalizations.
- Empower patients to take a more active and informed role in their health and well-being through improving patients competence and compliance with symptom management.
- Enhance collaboration between health care providers within the patient's circle of care to improve the quality of care and clinical outcomes.

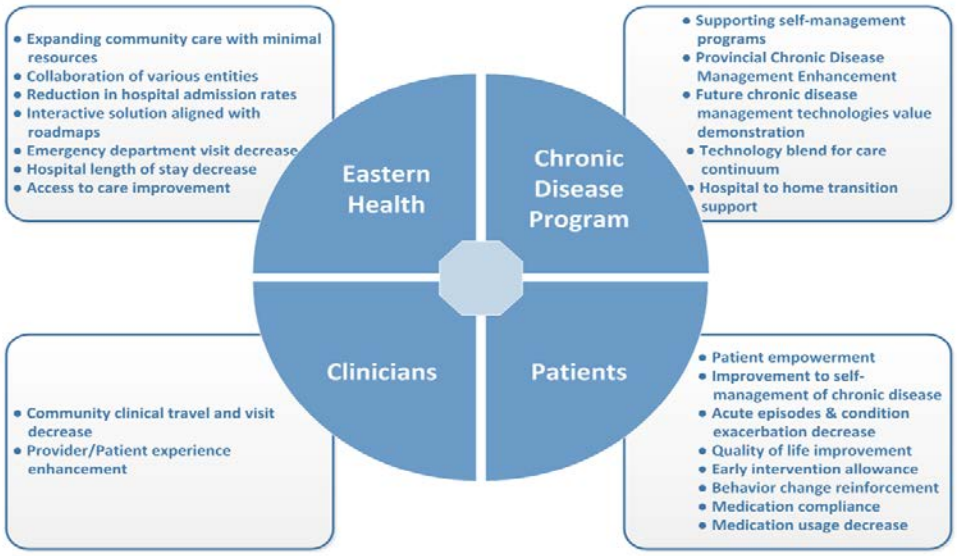
Benefits (Remote Patient Monitoring, 2015)

The following information on the benefits is taken from the binder in the office (RPM, 2015).

The EH RPM program has benefits for four key stakeholders. First, the program benefits the organization as it aims to increase patients' ability to manage their chronic disease and

decrease healthcare utilization. Secondly, it assists in the provincial management of chronic disease by providing virtual support to improve self-management. The third stakeholder to benefit from the program is the clinician who can provide care virtually to patients, decreasing travel for the clinician, allowing them to spend more time servicing patients. Lastly, the patient benefits by becoming empowered and improving their ability to self-manage their chronic disease.

The figure on the following page highlights all potential benefits each stakeholder may experience from the EH RPM program:



History

The EH RPM program enrolled its first patient in November 2015. The program has grown to take on a provincial lens and has expanded to include health care professionals of various disciplines providing care to patients with chronic health conditions. As identified in the Chronic Disease Action Plan: The Way Forward https://www.gov.nl.ca/hcs/files/chronicdisease-pdf-chronic-illness.pdf (Government of Newfoundland and Labrador., 2017), the provincial government supports this telehealth service as it increases access to rural and remote areas and supports patients in self-management of their chronic disease. Please select the hyperlink above to review the document and focus on pages 7 and 8, which discusses RPM.

Pause & Think

In the provincial document's RPM section, reflect on how the provincial focus compares to the EH RPM program's benefits.

Mentorship

Mentorship is a relationship between a mentor and a mentee described as encouraging personal development through support and guidance. Mentoring is a process that facilitates the transition from the educational processes to independent work experiences (Horner, 2017).

Mentorship is a successful strategy used by the nursing profession to support nurses in role transition. For mentorship to be successful, it should be planned and structured (Knowles, 2020).

Mentorship results in benefits to the mentor, mentee and the organization. In a systematic review of mentorship programs' effectiveness and application, Chen and Lou (2013) found that

mentorship programs reduced turnover rates, reduced turnover costs, and improved job satisfaction and professional identity.

The EH RPM program provides mentoring to all new employees. Mentorship will be established during your first week of orientation and continues as you progress from novice to expert in the field of telehealth nursing. Mentorship will be provided in person and through the videoconferencing platform Microsoft Teams.

Your mentorship experience will guide you through the orientation process, and your mentor will be instrumental in guiding you towards meeting your learning objectives.

Mentorship Strategy

The EH RPM program uses a shared mentorship strategy**.** Shared mentorship involves all RPM nurses who provide patient care, sharing the responsibility of mentoring the newly hired staff member. As a newly hired team member, you will spend time being mentored by each RPM nurse. This strategy is a way for you to experience how all nurses care for patients using technology and organize their workday.

The team lead will coordinate the shared mentorship strategy and will provide you with a mentorship schedule.

During mentorship, the mentors will:

- Assist you with simulation learning within the technology platform
- Complete simulation video calls from the technology-based platform to the demo IPad, which will be assigned to you during orientation
- Review and discuss clinical algorithms which will guide you on how to address alerts from biometric readings and symptom management questions
- Complete a telephone or video call with a patient to demonstrate work processes
- Shadow you as you perform a telephone or video call with a patient concerning management and follow-up of an alert
- Provide opportunities to ask questions
- Demonstrate the datamining process
- Demonstrate a call to offer the program, an enrollment call, and an introductory call
- Shadow you as you complete a call to offer the program, an enrollment call, and an introductory call
- Demonstrate a transfer to the maintenance program and observe as you enroll a patient in the maintenance program

During mentorship, you as a mentee will:

- Complete weekly learning modules in the orientation toolkit
- Complete simulation activities in the Sandbox of Maestro 2
- Complete daily health sessions using a demo IPAD and the peripheral devices
- Complete a video call with your mentor using the demo IPAD
- Identify areas where extra training or education is needed
- Communicate with your mentor and ask questions
- Identify new topics you feel should be reviewed
- Review your self-assessment checklist weekly and discuss with your mentor as needed
- Seek new learning opportunities
- Review the learning checklist weekly
- Complete the activities you have developed in your learning plan
- Provide ongoing feedback to your mentor
- Maintain confidentiality
- Accept advice and guidance
- Share ideas

Pause & Think

As you meet with your mentors, think about the communication process and how you feel asking questions and receiving feedback

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Communication

In general, we expect good communication among EH employees, and it is especially important during orientation and the shared mentorship process.

Eastern Health's global communication policy indicates that effective and respectful communication is essential to building and maintaining healthy work relationships and that good

communication is everyone's responsibility. EH encourages programs to provide staff with clear, timely, respectful, and accessible information sensitive to their needs and responsive to their concerns.

During the orientation period, clear communication between you and the EH RPM program staff will optimize your clinical orientation experience.

Program staff will provide you with feedback and answer any questions you have.

The self-assessment competency checklist, the learning checklist, and the learning plan are tools developed to provide continuous communication between you, your various mentors, and the program manager. Suppose there are any areas identified within these tools where you feel further education and training are required. In that case, they will be provided to you before you are expected to practice independently.

The EH RPM program manager will meet with you at the end of the orientation period to review your self-assessment checklist, offer feedback on your performance, and discuss the orientation experience.

You are encouraged to ask questions and seek as many learning opportunities necessary to become independent in providing care using telehealth technology.

Conclusion

At the end of your first week of orientation, you have completed **Module One: Introduction to Orientation** and **Module Two: An Introduction to RPM**, learned about the orientation process, and have read about the background and importance of the EH RPM program. You should now have a customized orientation scheduled, developed with the assistance of your mentor. The shared mentorship strategy has been introduced, as well as the communication tools important to this process. You are now ready to move on to **Module 3: Computer Technology**, which focuses on telehealth technology and computer platforms.

Module Three: Computer Technology

The EH RPM program uses various technology platforms to enable the RPM nurse to complete role requirements. Module Three will introduce you to these technologies and provide you with learning material to become familiar with their use and purpose.

Learning Objectives

After completing this module, you will be able to:

1. Describe the computer technology platforms utilized by the RPM program;
2. Navigate the Maestro 2 Health Harmony platform and complete simulation exercises in the sandbox;
3. Explain the importance of the Microsoft Office 365 components in your daily role as an RPM nurse; and
4. Retrieve a patient's electronic file.

Learning about Computer Technology

You will need to become familiar with nine technology platforms, which you will use every day as an RPM nurse. These platforms are described below. You will be provided secure access to these platforms and time to learn about them and practice navigating each one.

The summary table on the following page will help you keep track of your learning. Please date and initial the following activities as they are completed this week.

Activity	Education Received	Practice Completed	Comments
Maestro 2			
Patient Platform: The IPAD			
Excel Spreadsheets			
Microsoft Outlook			
Microsoft Teams			
Microsoft SharePoint			
Microsoft PowerPoint			
Shared Drive			
Healthe NL Viewer			
Workload Measurement (under development)			

Remote Patient Monitoring Maestro 2 Platform

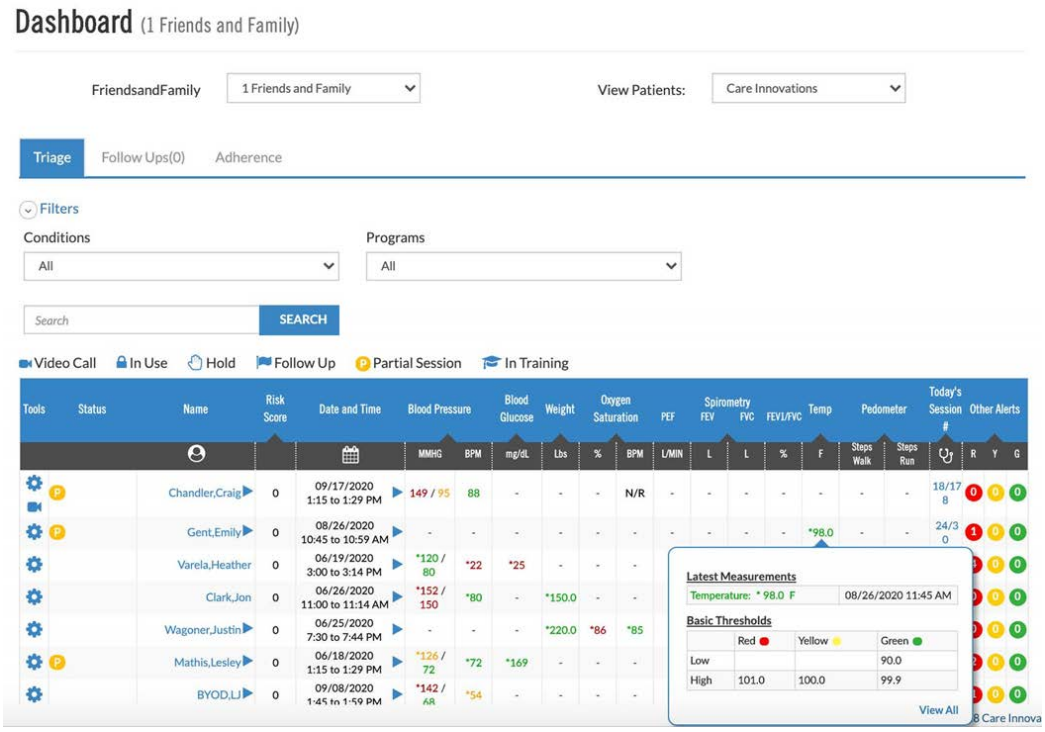
The EH RPM program uses a computer technology platform, Health Harmony Maestro 2, supplied by Care Innovations to service patients.

Maestro 2 is a web-based care management application that works together with Health Harmony mobile software installed on an in-home device to help patients manage their conditions (Care Innovations, 2020).

Maestro 2 will help you educate, remind, and motivate patients to manage their conditions. With Maestro 2, you will schedule patient health sessions, set patient reminders, and assess treatment progress through scheduled video calls. In response, patients use health harmony on their IPAD to transmit health assessment answers and measurements that allow you to monitor their health and treatment progress on a day-to-day basis.

You will be emailed a link to create an account in Maestro 2 from Care Innovations. Please keep in mind the link expires 72 hours after it has been sent. Please set up your account within this timeframe.

Here is a screenshot of what your dashboard will look like in the Maestro 2 platform:



The information generated on your dashboard will be transmitted from your patients IPAD. All biometric readings and symptom management questions will appear daily on your dashboard.

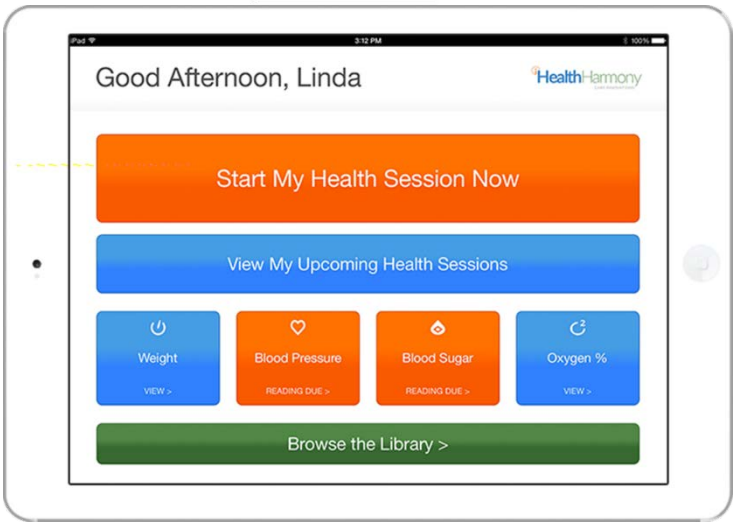
To become familiar with the Maestro 2 platform, you will:

- Receive virtual training from the vendor that will be scheduled
- Complete the e-learning modules provided by the vendor on the use and functionality of the Maestro 2 platform
- Review the following quick reference guides provided by the vendor:
  - Adding a patient
  - Scheduling a program
  - Acknowledging patients
  - Enrollment and transmission details
  - Locating Patients
  - Notes
  - Thresholds
  - Custom Messages
  - Disenrolling a patient
  - Triage
  - Video conferencing feature
- Shadow your mentor in the use of the platform
- Use the sandbox within the platform to complete simulation exercise on test patients

Patient Platform: The IPAD

The IPAD is considered the patient's technology platform as it provides daily health sessions and a library consisting of disease-specific educational resources. It is important to become familiar with how the IPAD functions and how the patient views the daily health sessions. Becoming familiar with the IPAD will allow you to assist and troubleshoot if issues arise. Please use the demo IPAD provided to you to complete daily test health sessions.

Below is a screenshot of what the patient will see each day. The patient selects the top orange banner to start their daily health session.



The patient receives the IPAD from the asset management company, **Hypertec, who also provides enhanced technical support and troubleshooting for both the patient and clinician.**

It is important to remember that Hypertec provides technical support for all RPM equipment, not the EH help desk.

Microsoft Office 365

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Microsoft Office 365 is a cloud-based application that provides device management and advanced security (Microsoft, 2020). The EH RPM program uses this application to communicate among team members and complete daily work tasks.

You will need to become familiar with each component listed below as they are an essential part of this virtual program. You have been granted access to this platform, and you will find the application on the desktop of your assigned computer.

Microsoft Office consists of the following applications utilized by the EH RPM team:

- Excel Spreadsheets
- Microsoft Outlook
- Microsoft Teams
- SharePoint
- PowerPoint

Excel Spreadsheets

Microsoft Excel spreadsheets are a data visualization and analysis tool, which features calculations, graphing tools, and pivoting tables (Microsoft, 2020).

The EH RPM program uses Excel spreadsheets in the datamining, screening, and enrollment processes. You may also be required to use Excel spreadsheets to pull statistical information needed for program development.

You will need to know how to locate information on an Excel spreadsheet and enter information correctly.

Your mentor will provide Excel spreadsheet training, and you will be provided time to practice new skills acquired.

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Microsoft Outlook

Microsoft Outlook is a personal information manager web app from Microsoft consisting of webmail, calendaring, and contacts (Microsoft, 2020).

This is the primary means of communicating important program and organization information at EH.

You are required to check your email throughout your workday.

The calendar component of Microsoft Outlook will provide you with links to meetings, which you have accepted through your email account.

Your mentor will provide you with guidance using Microsoft office and provide you with time to practice setting up meeting invitations and sending emails.

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Microsoft Teams

Microsoft Teams is your hub for teamwork providing chat and threaded conversations, meetings, video conferencing, and calling (Microsoft, 2020).

As the EH RPM program works at 50% capacity onsite to help EH decrease its environmental footprint, Microsoft Teams is an important tool for all team members to stay connected.

Microsoft Teams is used daily to visually bring all members together to discuss important issues and encourage employee engagement.

Microsoft Teams will be used during the orientation process to facilitate job shadowing and the mentorship process.

You will learn how to share your screen with other team members, which is an important feature in the communication process.

Your mentor will provide you with guidance using Microsoft Teams and sharing your screen. You will be provided time to practice within the platform.

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Microsoft SharePoint

Microsoft SharePoint is a web-based platform that integrates with Microsoft Office as a document management and storage system (Microsoft, 2020).

The EH RPM program utilizes SharePoint to store all electronic documents needed for the program's daily workflow.

SharePoint contains:

- Standard operating procedures
- Excel spreadsheet for datamining, screening and enrollment
- PowerPoint Presentations used for educational purposes
- Provincial integration documents
- Research and data analysis reports
- Care Innovations educational PDFs
- Content in development
- Pictures and videos
- Schedules

Your mentor will provide you with guidance using SharePoint and provide you with time to practice retrieving documents within the platform.

Microsoft PowerPoint

Microsoft PowerPoint is a presentation program used by the EH RPM program when creating educational slides used during program development.

The educational material provided to the patients through the IPAD is displayed using PowerPoint.

It is important to become familiar with the following important points you will need to consider during PowerPoint development:

- Font type
- Text styles
- Branding and trademarks
- Text consistency and readability
- Color palette
- Imagery and iconography

To familiarize yourself with these important points, please review the quick reference guide "Clinical Content WordPress Style Guide," provided by Care Innovations. This reference guide can be found on SharePoint under the documents tab.

You can also check out the following hyperlink for PowerPoint tips from Bates College (2011): https://www.bates.edu/helpdesk/2011/05/14/powerpoint-presentation-tips/. Please pay particular attention to points 5-10 in this document. Keep in mind that hyperlinks currently cannot be added to educational slides embedded in the IPAD. Care Innovations is currently working on a "bring your own device" option, which will support the hyperlink option, so stay tuned!

Your mentor will answer any questions you may have regarding PowerPoint presentations for program development. Please take the time this week to familiarize yourself with the PowerPoint platform.

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Pause & Think

Have you used any of these Microsoft Office platforms before? Reflecting on your experiences, identify what you are comfortable with and what you would like to strengthen!

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Shared Drive

A Shared Drive is an organizational structure that supports files owned by the organization rather than individual users. The Shared Drive is used to store electronic patient records, whereas SharePoint is used to store program-specific documents.

The EH RPM program uses a paperless documentation system, and all patient charts are stored on the program's shared drive.

You will find the Shared Drive within your EH One Drive. The RPM shared drive has been mapped to your computer by the helpdesk. If you are unsure where to find it, please ask your mentor for assistance.

You will have a file within the shared drive containing all your enrolled patients.

Each file will contain:

- Consent
- Referral if applicable
- Nursing assessment
- Medication reconciliation
- Patients goals
- Action plan as applicable
- Graduation criteria
- Letter of enrollment

Your mentor will provide you with guidance navigating Shared Drive and provide you with time to practice within the platform.

Healthe NL Viewer

The Newfoundland and Labrador Centre for Health Information (NLCHI) has built HEALTHe NL, a provincial electronic health record. HEALTHe NL provides more accurate and reliable data to support improved health care delivery, decision-making, stability, and efficiency in the health care system (Newfoundland and Labrador Centre for Health Information, (n.d.).

Components of the Healthe NL Viewer include:

- The Pharmacy Network
- Picture Archiving and Communications System
- The Client Registry
- Labs

The EH RPM program uses the Healthe NL viewer during the datamining and medication reconciliation processes.

Furthermore, the Maestro 2 platform will integrate with the client registry, located within the Healthe NL Viewer, to increase access to health information to those clinicians within the circle of care.

You will be provided with an account from NLCHI and will need to set up a password. You will be provided virtual training from NLCHI on the use and functionality of the Healthe NL Viewer.

Workload Measurement (under development)

The workload measurement system (WMS) is defined as a tool for measuring the volume of services provided in terms of a standardized unit of productive personnel and serves as a standardized method for recording workload.

The EH RPM program is currently working within the Management Information Systems in Canadian Health Service Organizations standards to develop an approach for collecting workload.

Once this process is in place, the Regional Workload Measurement Manager will provide training for all RPM nurses providing patient care. You will be required to set up an account and a password once this system is operational.

Pause & Think

As you prepare to practice in these various platforms, think about how they enhance your daily workflow.

Don't forget to ask questions and seek additional learning experiences based on your needs

Conclusion

As you will be using these technology platforms every day, you must be familiar with navigating each one proficiently. To become comfortable with their functionality, please ask questions and seek out additional learning opportunities as needed. Take time this week to practice in each of these platforms.

You are now ready to move on to **Module Four: Educational Components**, where you will learn about the chronic diseases followed by the RPM program and the strategies utilized to assist patients in chronic disease self-management.

Module Four: Educational Components

As a new employee, the EH RPM program requires you to have specific knowledge to coach patients towards successfully achieving their health goals.

Module Four will provide you with an overview of the materials you will need to be familiar with to work as a new employee in the EH RPM program.

A brief overview of the three chronic diseases currently followed by the EH RPM program will be provided. Chronic disease self-management strategies, including health coaching, motivational interviewing, and behavior change, will be discussed. Clinical algorithms that will guide you in clinical decision-making and patient care will be introduced and explained.

Documentation specific to EH RPM will be presented, and all forms required as part of the patient's electronic health record will be reviewed.

Lastly, considerations for adult education and learning, which are important to program development and patient care, will be introduced.

Learning Objectives

After completing this module, you will be able to:

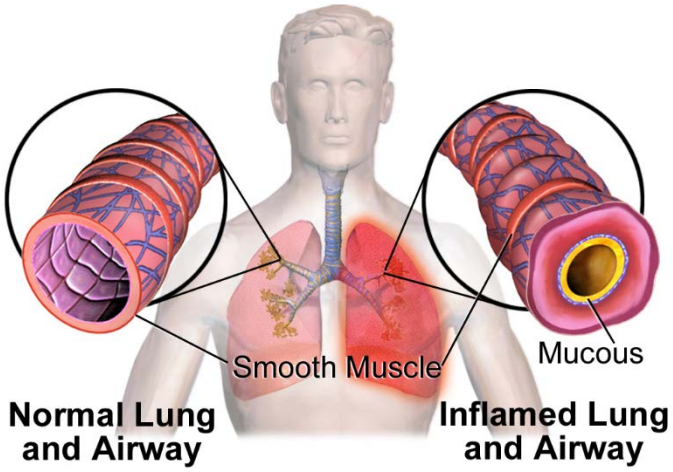
1. Describe the chronic diseases monitored by the EH RPM program;
2. Describe tools utilized by the EH RPM program to assists patients in developing chronic disease self-management strategies;
3. Explain clinical algorithms and their importance in providing standardized care to the patients enrolled in the EH RPM program;
4. Describe the documentation requirements within the EH RPM program; and
5. Explain the importance of adult education and learning considerations within this virtual health care setting.

Summary of Chronic Diseases

The RPM program currently monitors patients with Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure, and Type II diabetes. In March 2020, the program also monitored COVID-19 positive patients who have pre-existing co-morbidities. For orientation purposes, this toolkit will focus on COPD, CHF, and type II diabetes.

To help you understand self-management, it is helpful to be familiar with the pathophysiology, clinical assessment, management, and medications prescribed to treat these three chronic health conditions followed by the RPM program.

Chronic Obstructive Pulmonary Disease (COPD)



Source. From "Lungs Normal vs Inflamed Airway," by BruceBlaus, 2013, Wikimedia Commons, Creative Commons-Attribution 3.0 Unported

COPD is a heterogeneous lung disease that includes chronic bronchitis and emphysema, which can cause frequent exacerbations. Exacerbations are characterized by a change in dyspnea, cough, or sputum production and occur as a part of the disease (Stamenova et al., 2019).

Other causes of COPD include:

- Genetic reasons (alpha-1 antitrypsin deficiency)
- Occupational dust and chemicals
- Second-hand smoke
- Frequent lung infections as a child
- Wood smoke and other biomass (animal dung, crop residues) fuel used for cooking

COPD develops over time and, in most cases, is diagnosed in people over 40 (Remote Patient Monitoring, 2015). Patients with COPD may not realize that they are becoming short of breath

until it becomes very hard to do simple tasks like walking upstairs. Patients with COPD have obstructions or blockages in their lungs, which make it difficult to breathe.

Chronic bronchitis is an inflammation of the airways, causing the mucus glands to produce extra mucus, making it difficult to breathe (Vital Aire, 2019).

In emphysema, the alveoli in the patient's lungs are damaged, making it hard to breathe. Large air pockets form in the lungs because of a loss of lung tissue (Vital Aire, 2019).

In Canada, acute exacerbations of COPD account for approximately $646- $736 million per year in hospital utilization (Stamenova et al., 2019).

Key Assessment

When assessing a patient with COPD, several physical manifestations may be present (The Lung Association, 2019). These include:

- An expanded chest (barrel chest)
- Wheezing during normal breathing
- Taking longer to exhale fully
- Decreased breath sounds or abnormal breath sounds such as crackles or wheezes
- Chest tightness
- A chronic cough that may produce mucus

These findings are assessed using remote technology and involve asking the patient or their caregiver if any of these symptoms are present. If videoconferencing is used as an assessment tool, you must ensure it is an appropriate avenue to complete a clinical assessment. You will learn more about videoconferencing in Module Five.

Parameters for COPD as per GOLD Classification

GOLD Classification is one of the key inspirations for COPD guidelines. According to the severity of COPD, it is important to initiate appropriate treatment. Gold classification is one of the most crucial aspects of management guidelines (Vestbo et al., 2013).

The following table identifies the classification of airflow limitation severity in COPD. Specific spirometric cut-points are used for purposes of simplicity. Based on the patient's FEV documented in Meditech, the following table will help you create a patient care plan based on disease severity.

Defines Obstruction: Forced Expiratory Volume (FEV)/Forced Vital Capacity (FVC) < 70%

Classification of Airflow Limitation Severity in COPD		
GOLD 1	Mild	FEV1 > 80%
GOLD 2	Moderate	50% < FEV1 < 80%
GOLD 3	Severe	30% < FEV1 < 50%
GOLD 4	Very Severe	FEV1 < 30%

Key Medications

Medications are used to prevent or ease the symptoms of COPD. Sometimes with COPD, patients experience a flare-up and are prescribed extra medications (The Lung Association, 2019). The COPD action plan is also used to help the patient manage flare-ups.

There are many types of medications, both oral and inhaled, that can treat COPD. These medications include:

- Bronchodilators
- Combination bronchodilators and anti-inflammatories
- Antibiotics
- Corticosteroid pills
- Phosphodiesterase-4 inhibitors
- Mucolytics
- Supplementary oxygen
- Vaccines for influenza and pneumonia

Key Management

COPD cannot be cured; therefore, the goal is early detection and treatment. Lifestyle changes and appropriate medication can help the patient live a normal life (The Lung Association, 2019). Some of these lifestyle changes and management strategies include:

- Quitting smoking
- Taking medications as prescribed
- Receiving the yearly influenza vaccine
- Receiving the pneumonia vaccine (Pneumovax)

- Supplementary oxygen
- Communicating with a health care provider
- Lung transplant

Role of the RPM Nurse

As an RPM nurse, you will monitor daily biometrics and responses to symptom management questions transmitted by the patient. You will use your clinical judgement and nursing assessment to respond to this data.

You will formulate a care plan in collaboration with the patient, which will include patient-specific goals.

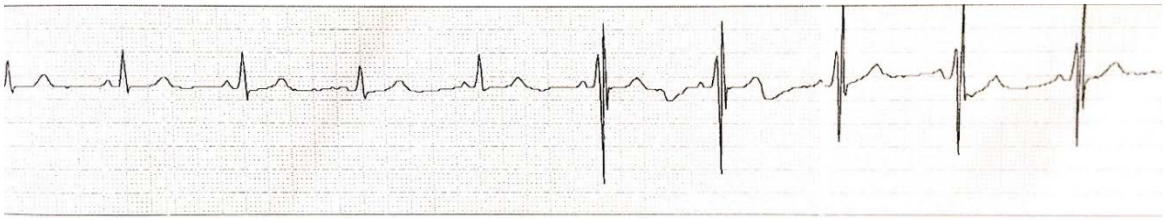
You will help the patient achieve these goals by providing guidance on lifestyle changes, reinforcing disease-specific education, and supporting them towards obtaining chronic disease self-management skills.

Additional Educational Resources

Based on the brief overview of COPD provided in this module and your past clinical experience, you will need to determine the need to review the following reference materials for further educational information related to COPD:

https://www.lung.ca/copd
https://cts-sct.ca/guideline-library/

Congestive Heart Failure (CHF)



Source. From "ECG Printout of a heart failure patient with CCM," by Dr. Frank-Michael Malur, 2015, Wikimedia Commons, Creative Commons-Attribution-Share Alike 3.0 Unported

CHF occurs when the heart muscle does not pump blood as it should because the muscle is too weak or stiff to fill or pump effectively. Damage to the heart muscle can be caused by certain conditions such as high blood pressure, myocardial infarction, or coronary artery disease (Mayo Clinic, 2020). This abnormal heart function results in or increases the subsequent risk of clinical symptoms and signs of low cardiac output and pulmonary or systemic congestion. CHF is common and reduces life, exercise tolerance, and survival (Remote Patient Monitoring, 2015).

CHF can be prevented by controlling or preventing the causes of heart failure, such as coronary artery disease, myocardial infarction, high blood pressure, diabetes, or obesity (Mayo Clinic, 2020).

Treatments have greatly improved prognosis, and many patients can now hope for long periods of stability with improved symptoms and improved heart function.

Key Assessment

When assessing a patient with CHF, several physical manifestations may be present (American Heart Association, 2020). These include:

- Shortness of breath
- Persistent coughing or wheezing
- Buildup of excess fluid in body tissues
- Tiredness and fatigue
- Lack of appetite
- Nausea
- Confusion
- Increased heart rate
- Weight changes

These findings are assessed using remote technology and involve asking the patient or their caregiver if any of these symptoms are present. If videoconferencing is used as an assessment tool, you must ensure it is an appropriate avenue to complete a clinical assessment. You will learn more about this in Module Five.

Key Medications

Patients with heart failure can be prescribed multiple medications to treat different symptoms. Patients must take their medication exactly as prescribed to prolong their life and improve heart function (American Heart Association, 2020).

There are many types of medications used to treat COPD. These medications include:

- Angiotensin-converting enzyme inhibitors
- Angiotensin II receptor blockers
- Angiotensin-Receptor Neprilysin Inhibitors
- I_f Channel Blocker (or inhibitor)
- Beta-Blockers
- Aldosterone Antagonists
- Hydralazine and isosorbide dinitrate
- Diuretics
- Anticoagulants
- Cholesterol-lowering drugs
- Digoxin

If you are not familiar with these medications, please read further information, which can be found at the following link:

https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure

Key Management

Heart failure that has developed over time cannot be cured, but it can be treated with strategies to improve symptoms (American Heart Association, 2020). In addition to the different types of medications that can be used to treat heart failure, several other interventions can also be used. These include:

- Lifestyle changes
  - Quitting smoking
  - Maintaining or losing weight
  - Tracking daily fluid intake
  - Avoiding or limiting alcohol
  - Avoiding or limiting caffeine
  - Eating a healthy health diet
  - Being physically active
  - Managing stress
  - Monitoring blood pressure
  - Getting adequate rest
  - Receiving the yearly influenza vaccine
  - Receiving the pneumonia vaccine (Pneumovax)
- Device and Surgical Procedures
  - Implantable cardioverter-defibrillator
  - Cardiac Resynchronization Therapy
  - Left ventricular assist device
  - Heart transplantation
  - Percutaneous coronary intervention
  - Coronary artery bypass
  - Valve replacement
  -
- Cardiac rehabilitation

Role of the RPM Nurse

As an RPM nurse, you will monitor daily biometrics and responses to symptom management questions transmitted by the patient. You will use your clinical judgement and nursing assessment to respond to this data.

You will formulate a care plan in collaboration with the patient, which will include patient-specific goals.

You will help the patient achieve these goals by providing guidance on lifestyle changes, reinforcing disease-specific education, and supporting them towards obtaining chronic disease self-management skills.

CHF Classification as per the New York Heart Association (NYHA) Functional Classification

Patients with CHF are classified according to the severity of their symptoms. The table below describes the most commonly used classification system, the New York Heart Association (2020) (NYHA) Functional Classification. It places patients in one of four categories based on how much they are limited during physical activity.

Based on the patient's NYHA functional classification documented in Meditech, the table below will help you create a patient care plan based on disease severity.

New York Heart Association (NYHA) Functional Classification

NYHA Class	Patients with Cardiac Disease (Description of HF Related Symptoms)
Class I (Mild)	**No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea (shortness of breath)**
Class II (Mild)	**Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea (shortness of breath)**
Class III (Moderate)	**Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnea**
Class IV (Severe)	**Unable to carry on any physical activity without discomfort. Symptoms of heart failure at rest. If any physical activity is undertaken, discomfort increases**

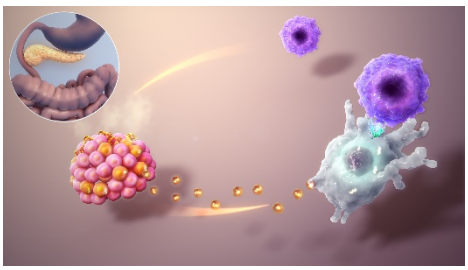
Additional Educational Resources

Based on the brief overview of CHF provided in this module and your past clinical experience, you will need to determine the need to review the following reference materials for further educational information related to CHF:

https://www.ccs.ca/en/guidelines/guidelines-library

https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure

Type II Diabetes



Source. From Wikimedia Commons, Creative Commons Attribution 4.0 International license. http://www.scientificanimations.com/wiki-images/

Type II diabetes is a disease in which a person's body does not properly use the insulin it produces.

Ninety percent of Canadians with diabetes live with type II diabetes and can have various symptoms, and some people may have no symptoms (Diabetes Canada, 2018).

Type II diabetes can be managed with healthy foods, regular exercise and, in most cases, medication. If left untreated or improperly managed, type II diabetes can lead to various complications (Diabetes Canada, 2018).

In Newfoundland and Labrador, 65,000 individuals live with diabetes representing 12% of the population and that number is expected to rise to 81,000 by 2028 (Diabetes Canada, 2018). If not appropriately managed, diabetes can lead to a higher risk of serious and costly complications, including heart attack, stroke, vision loss, kidney disease and amputation (Ciemins, Coon, Peck, Holloway & Min, 2011).

Diabetes is a chronic condition that requires continuous self-management and support (Greenwood et al., 2017). Self-management includes self-monitoring of blood glucose, medication handling, adhering to a diabetic diet, and commitment to physical activity and exercise (Kotsani et al., 2018). These self-management activities focus on behavioral changes that a client with diabetes must implement to optimize disease management in daily living activities.

Key Assessment

When assessing a patient with Type II diabetes, several physical manifestations may be present (Diabetes Canada, 2018). These include:

- Unusual thirst
- Frequent urination
- Weight change
- Extreme fatigue
- Blurred vision
- Increased blood glucose
- Frequent or recurring infections
- Cuts and bruises which are slow to heal
- Tingling or numbness in the hands or feet

Sme patients with Type II diabetes may present with no symptoms.

These findings are assessed using remote technology and involve asking the patient or their caregiver if any of these symptoms are present. If videoconferencing is used as an assessment tool, you must ensure it is an appropriate avenue to complete a clinical assessment. You will learn more about videoconferencing in Module Five.

Key Medications

Some patients with type II diabetes can achieve optimal blood glucose levels by exercising regularly and following a proper diet. If these interventions alone are not successful in achieving optimal blood glucose levels, medications are provided (Diabetes Canada, 2018).

There are two types of oral medications used to treat type II diabetes. These medications are:

- First-line glucose-lowering medication
  - Metformin
- Second-line glucose-lowering medication
  - DPP-4 inhibitors
  - GLP-1 receptor agonists
  - SGLT2 inhibitors
  - Insulin secretagogues
  - Thiazolidinediones
  - Insulin therapy

If you are not familiar with these medications, please read further information, which can be found at the following link: https://www.diabetes.ca/

Key Management

Patients with type II diabetes need to keep their blood sugars within a target range set out by their healthcare provider. Maintaining optimal blood glucose levels will help avoid problems with can lead to serious health complications (Diabetes Canada, 2018). Management of type II diabetes can include:

- Eating healthy meals and snacks
- Getting regular physical activity
- Regularly monitoring blood glucose levels
- Maintaining a healthy body weight
- Taking diabetes medication
- Managing stress effectively

Role of the RPM Nurse

As an RPM nurse, you will monitor daily biometrics and responses to symptom management questions transmitted by the patient. You will use your clinical judgement and nursing assessment to respond to this data.

You will formulate a care plan in collaboration with the patient, which will include patient-specific goals.

You will help the patient achieve these goals by providing guidance on lifestyle changes, reinforcing disease-specific education, and supporting them towards obtaining chronic disease self-management skills.

Additional Educational Resources

Based on the brief overview of Type II Diabetes provided in this module and your past clinical experience, you will need to determine the need to review the following reference materials for further educational information related to Type II Diabetes:

https://www.diabetes.ca/

http://guidelines.diabetes.ca/cpg

Pause & Think

Reflect on the chronic diseases followed by the RPM program. How do you feel about the knowledge base required to service these patients? If you feel you need additional education or resources, please advise your mentor

Chronic Disease Self-Management

Self-management skills are the abilities that allow patients to control their thoughts, feelings, and actions. When patients have strong self-management skills, they can set goals and take the initiative to achieve them. Chronic disease self-management skills provide patients with the ability to better manage their chronic conditions and improve their quality of life (Remote Patient Monitoring, 2015).

When patients do not have the knowledge or skills to address health issues related to their chronic condition, they can experience complications and repeat visits for interventions within the healthcare system.

The EH RPM program aims to provide these patients with the education and skills to better manage their chronic diseases. The education provided helps them understand their condition and what actions to take when they experience a health-related issue. The skills they develop during the program provide them with the ability to self-manage chronic disease-related issues independently.

You must keep in mind there are a variety of reasons why not all patients will be able to integrate all self-management skills into their lives.

A holistic assessment is important in determining potential barriers, including physical limitations, lack of family support, and financial struggles, limiting the patient's ability to follow the desired regime.

Additionally, you must assess the patient's desire to change. If the patient has no desire to change their behavior or make a lifestyle change, then a self-management intervention would not be appropriate. Please remember, not all patients are suited for enrollment!

For patients enrolled in the program, health coaching calls help them identify behaviors that need to be changed or altered. The coach calls also allow them to work on these identified behaviors with the RPM RN. Changing these behaviors involves setting goals, which the patient can work towards to improve their health outcomes and quality of life.

Health coaching calls also assist the patient in exploring and resolve uncertainty. Allowing the patient to identify uncertainty related to their health condition provides the opportunity for you to work in partnership with the patient to resolve this uncertainty through self-management skill development.

The EH RPM program assists patients develop the strategies they need to self-manage their chronic health conditions by using the following tools:

- Health Coaching

- Motivational interviewing
- Behavior change approach

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Health Coaching

Health coaching combines motivational interviewing techniques, problem solving, and goal-focused action planning to identify and address patients' individual barriers to change.

Health coaching is the link between patient education and behavior change and patient self-management.

Health coaching involves:

- Learning from the patient who is the expert
- Clinician offering options, strategies and information
- Basing care plans on an individual patient circumstances
- Identifying what is important to the patient
- Individualized goal setting

Your mentor will demonstrate health coaching techniques with patients currently enrolled in the program. You will be provided with the opportunity to engage in a health coaching call during your mentorship.

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Motivational Interviewing

Motivational Interviewing (MI) has been described as an evidence-based communication technique to help patients make behavioral changes to improve health outcomes (Badowski et al., 2019).

MI involves using open-ended questions and is a technique frequently used in health coaching to help patients explore and resolve uncertainty.

MI training will be provided virtually during the orientation period. You will receive this training from a psychologist employed with Care Innovations, the vendor who provides the EH RPM program with the Meastro 2 platform.

Behavior Change

Behavior change is key for effective self-management. Behavior change can improve health outcomes and quality of life in people living with chronic diseases.

Nurses involved in the behavioral change approach utilize the 5 As (RNAO, 2010), which are:

- Assess
- Advise
- Agree
- Assist
- Arrange

Your mentor will discuss this concept, and you will observe your mentor performing coaching calls with patients where the 5 As are utilized.

Please review and reflect on the following information in the sections in the Best Practice Guideline from the Registered Nurses Association of Ontario entitled Strategies to *Support Self-Management in Chronic Conditions: Collaboration with Clients:*

- Guiding Principles
- Key Assumptions
- Summary of Recommendations

This information will assist you in learning how to support your patient in behavioral change.

This document can be found by clicking on the following hyperlink:

https://rnao.ca/sites/rnao-ca/files/Strategies_to_Support_Self-Management_in_Chronic_Conditions_-_Collaboration_with_Clients.pdf

Pause & Think

How do you feel about working with the patient as a coach to assist in behavior modification?

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Clinical Algorithms

Clinical algorithms are responses to symptom management questions displayed in a flowchart design specifically suited for representing a sequence of clinical decisions, teaching clinical decision-making, and guiding patient care.

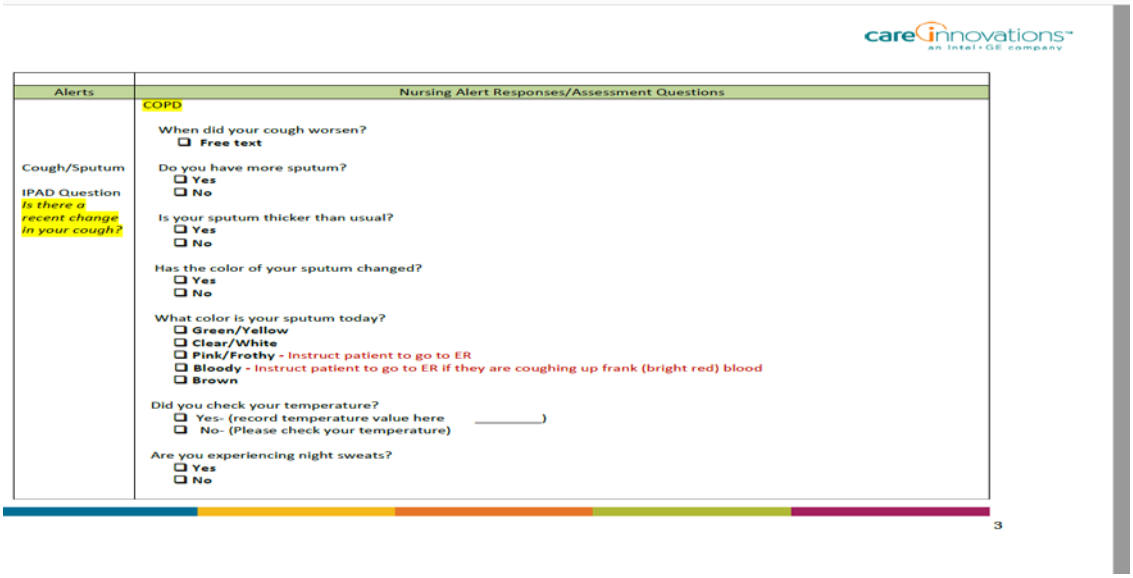
The EH RPM program uses clinical algorithms to provide a standardized approach to service patients.

Care Innovations has provided clinical algorithms for COPD, CHF, and Type II Diabetes.

These algorithms are beneficial in guiding your nursing practice as you begin caring for your patients.

These algorithms are located on SharePoint in the documents folder and will be reviewed with you by your mentor.

On the following page is a screenshot of a section of the COPD algorithm:



careinnovations
an Intel • GE company

Alerts	Nursing Alert Responses/Assessment Questions
Cough/Sputum IPAD Question *Is there a recent change in your cough?*	COPD When did your cough worsen? ☐ Free text Do you have more sputum? ☐ Yes ☐ No Is your sputum thicker than usual? ☐ Yes ☐ No Has the color of your sputum changed? ☐ Yes ☐ No What color is your sputum today? ☐ Green/Yellow ☐ Clear/White ☐ Pink/Frothy - Instruct patient to go to ER ☐ Bloody - Instruct patient to go to ER if they are coughing up frank (bright red) blood ☐ Brown Did you check your temperature? ☐ Yes- (record temperature value here _____) ☐ No- (Please check your temperature) Are you experiencing night sweats? ☐ Yes ☐ No

3

Documentation

Documentation is a vital component of safe, ethical, and effective nursing practice (CRNNL, 2010). Documentation is completed electronically in the EH RPM program.

Electronic documentation can be found in two locations depending on the area of documentation.

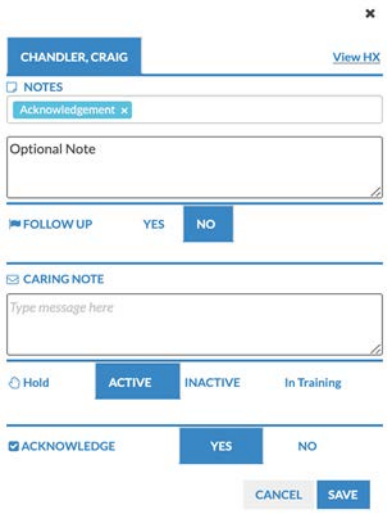
The first location is the electronic file, which is located on the shared drive, and consists of the following pieces of documentation:

- Consent http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=1538
- Referral if applicable http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=1537
- Nursing intake assessment http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=2397
- Medication reconciliation http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=436
- Patient goals
    - COPD http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=648
    - CHF http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=1535

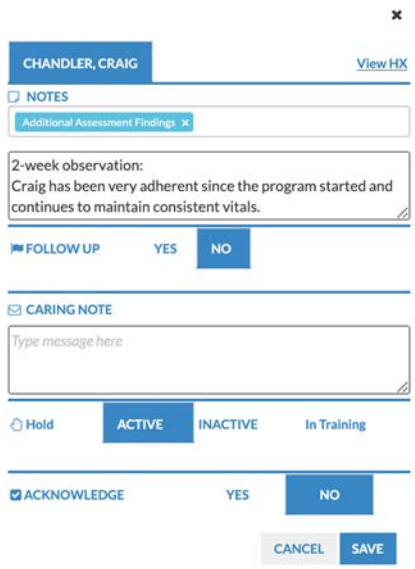
- Type II Diabetes
  http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=2036
- Consent for Maintenance as applicable
  http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=2128
- Graduation Criteria http://pulse.easternhealth.ca/Pages/ImageLoader.aspx?FormID=1532

The second location is in the Maestro 2 platform. All actions completed in the Maestro 2 platform are saved as a form of documentation. In this platform, you will:

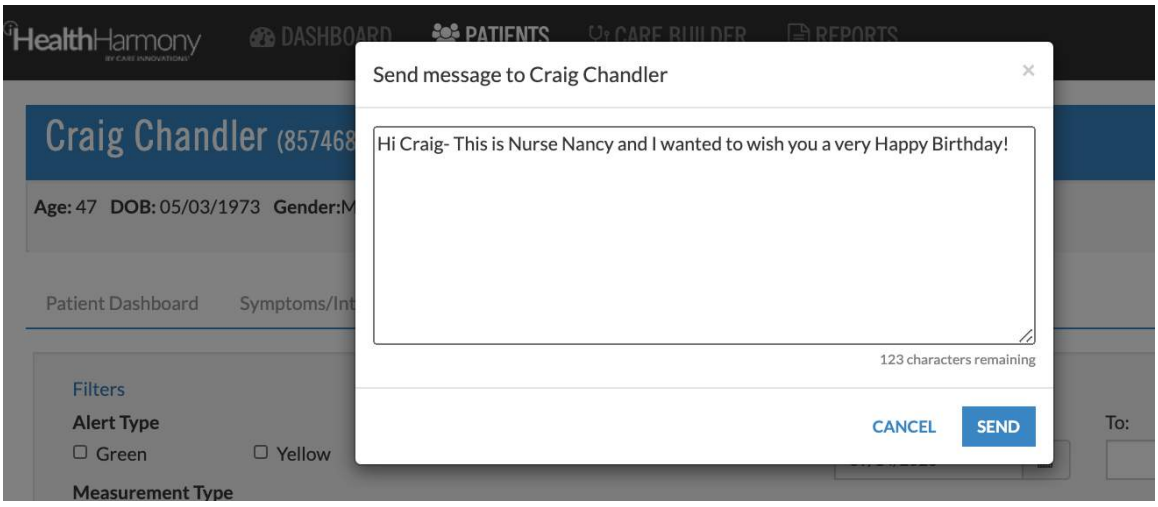
- Acknowledge alerts transmitted from the patients IPAD



- Complete narrative documentation



- Send caring messages



Pause & Think

Reflecting on your Maestro 2 training from Care Innovations, are you able to acknowledge an alert, send a caring note, and complete a narrative note in this system?
If you are unsure, please follow up with your mentor for assistance.

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Adult Education and Learning Considerations

The EH RPM program's target population comprises a senior population with unique educational needs and learning barriers.

Alterations in sensory perception, including vision, hearing, and touch, need to be considered in both program development and patient interactions.

As a result, font size/style, volume adjustments on devices, size of buttons and ease of use in equipment are important considerations when educating this population.

Sometimes it is important to assess the need and availability of a family member or caregiver to assist.

Self-management and behavior change can result from repetition in learning; therefore, messaging and ongoing learning/coaching that is patient specific are important.

It is important to ensure that the language used in communication methods is easy to understand and appropriate for the patient. As an EH RPM nurse, you may need to adjust your approach to align with client-specific needs.

Conclusion

Now that you have completed **Module Four: Educational Components** and have learned about the conditions monitored by the RPM program, self-management strategies, documentation requirements, clinical algorithms and adult learning considerations, you are now ready to move on to **Module Five: Virtual Presence. Module Five** will discuss videoconferencing presence and guidelines to consider when videoconferencing with your patients.

Module Five: Virtual Presence

As an Eastern Health (EH) Remote Patient Monitoring (RPM) nurse, you will be able to use technology to videoconference with patients. This is a new practice for the EH RPM team resulting from the Maestro 2 upgrade in March 2020. Engaging in health care through a video conferencing application requires you to be familiar with proper camera placement and lighting, which will affect both your experience and the patient's experience. You are also required to be aware of and adhere to privacy and confidentiality standards and nursing practices unique to this virtual interaction.

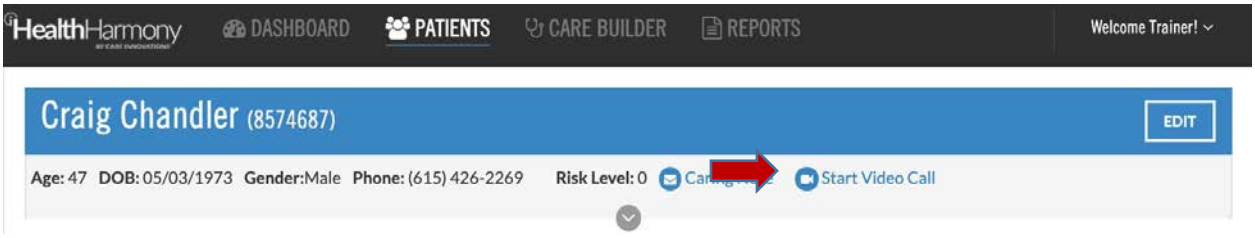
Learning Objectives

After completing this module, you will be able to:

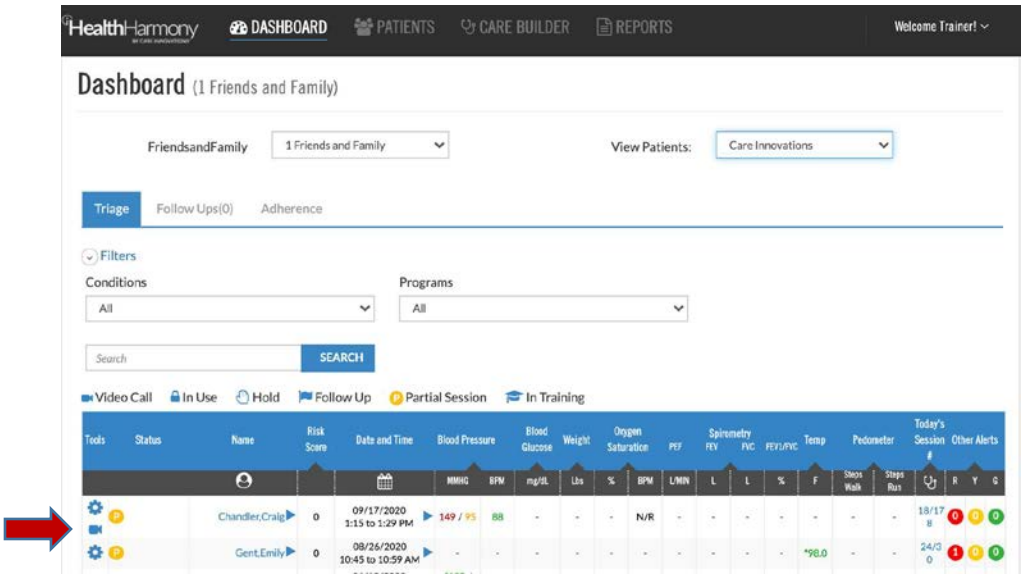
1. Describe proper camera placement and lighting required for videoconferencing;
2. Describe privacy and confidentiality related to videoconferencing; and
3. Describe professional accountability encompassing videoconferencing.

Videoconferencing within the Maestro 2 Platform

All videoconferencing is initiated from the dashboard of the Maestro 2 platform. You have received training on this feature from your mentor as well as from Care Innovations. As a review, you can initiate a video call with your patient from two areas within the Maestro 2 dashboard. You can begin a video call from the patient profile within Maestro 2, as shown in the screenshot of a fictitious patient:



You can also begin a video call from the dashboard in Maestro 2 by selecting the video camera button next to the patient's name, as shown in the screenshot below:



Videoconferencing must be prearranged with the patient as they have to consent to the virtual interaction. The patient cannot initiate video conferencing from their IPAD; they can only accept an incoming call from you, the clinician.

At the beginning of each daily health session on the patient's IPAD, they are provided information on the videoconferencing feature. Patients have a right to decline this type of virtual care. They also have the right to stop any videoconferencing sessions they have entered.

Technical Aspects of Videoconferencing

Virtual care refers to any interaction between the patient and a member of their circle of care, occurring remotely, using technology (CRNNL, 2020). Videoconferencing is a feature within the Maestro 2 platform, which provides the option of interacting with a patient face to face using technology. Some technical aspects to consider are connectivity, camera placement and lighting.

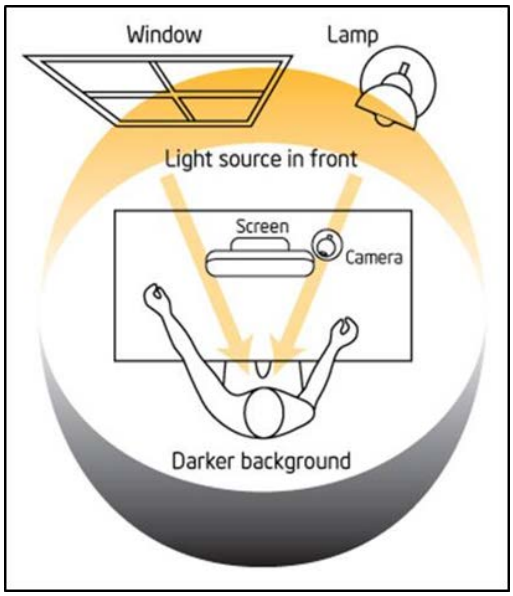
It is important to assess the individual patient's connectivity before offering or discussing the videoconferencing option. Only patients with broadband connections (LTE or Wi-Fi) can receive video calls. Patients using dial-up or lower bandwidth cellular (pre-4G/LTE) will not have the ability to connect to a video call.

In preparation for videoconferencing with the patient, you must discuss proper camera placement and lighting. Not all patients will have the ability to adhere to these suggestions; however, it is still important to inform them to optimize the videoconferencing experience. These suggestions are:

- Making sure the IPAD is oriented so the camera is pointing at them
- Setting up the IPAD on a table or surface where the light will shine on their face
- Ensuring the light source, whether from natural light or artificial light, is behind the IPAD

As an employee with the EH RPM program, you have been provided with a computer that has a built-in camera and speakers. You have also been provided with a headset to assist in maintaining privacy and confidentiality. You must set up your workspace to optimize the video calling experience.

Please ensure your workspace is set up similar to the diagram on the following page.



You will need to ensure you are directly in front of your computer, and the camera is eye level. You can test your camera set up in the sandbox of Maestro 2 by initiating a video call to your demo IPAD.

Please ensure that all light sources are located behind the computer screen. A light source located directly behind you will shine into the camera, causing a glare on the patient's end of the video feed.

If you do not have access to natural light, you can use a lamp to provide lighting during videoconferencing.

You will practice videoconferencing with your mentor using the Maestro 2 platform. You will call your mentor's demo IPAD from your Maestro 2 sandbox. This process allows you to become familiar with using the technology and allows you to set up your workspace appropriately for videoconferencing.

Additionally, please review the following documents related to the technical aspects of videoconferencing:

- Video Conferencing Feature Document from Care Innovations found on SharePoint.
- Video Conferencing Instructions for Maestro 2 found on SharePoint.
- The e-Learning module for videoconferencing provided by Care Innovations (under development)

Pause & Think

Reflect on the videoconferencing practice sessions you have completed. Have these sessions demonstrated the importance of proper camera placement and lighting? Have you set up your home office and onsite workspace to optimize the videoconferencing experience?

Professional Responsibilities related to Videoconferencing

According to CRNNL (2020), any nurse who engages in virtual care is accountable to comply with all standards set out by their licensing body. Virtual nursing practice must be delivered in a manner that is in the public's best interest, ensuring the delivery of safe, competent, compassionate, and ethical nursing services. The virtual practice environment influences nursing practice, and as a result, virtual assessments may be limited based on this environment and may not be appropriate for all situations (CRNNL, 2020).

In addition to determining if the episode of care is appropriate for virtual care, you must also be aware of the following areas, which require additional safeguards during videoconferencing.

Privacy and Confidentiality

Privacy and confidentiality are underpinnings of the health care system, as evident in practice standards, employer policy, and professional associations' code of ethics. The Personal Health Information Act (Government of Newfoundland and Labrador, 2011) also reiterates, through provincial legislation, the importance of the clinician's role involving personal health information.

Within the videoconferencing application, privacy and confidentiality present additional challenges that you must be aware of and be prepared to mitigate. Here are key points to follow to ensure you comply with privacy and confidentiality when videoconferencing:

- Ensure that your workspace is set up to ensure patient privacy and confidentiality is maintained
  - If you work from home, ensure you are in a private location
  - If you are working in the office, notify your coworkers of any planned videoconferencing with patients or close your door if possible
- Ensure that the patient environment is appropriate, and if anyone besides the patient is present, you must obtain verbal consent from the patient for their presence
- Advise the patient that the virtual visit is transmitted through a secure encrypted network and all personal health information will remain confidential
- Advise the patient that the videoconferencing will not be recorded
- Advise the patient that if privacy and confidentiality cannot be maintained during videoconferencing, the virtual interaction must be discontinued

Nursing Practice

All nursing practice areas require that the individual nurse is competent and proficient in the skill before performing that skill independently, and virtual health care is no different.

You will spend time this week using the videoconferencing aspect of the technology with your mentor until you are comfortable with its functionality.

Virtual health care delivery appropriateness will be determined case by case based on patient-specific needs. Once you begin caring for patients, you can discuss the appropriateness of videoconferencing with specific patients with your mentor if you need direction or guidance until you are proficient.

Pause & Think

Think about interacting with your patients via telephone versus videoconferencing and in comparison to in person. What do you see are the advantages and disadvantages of each?

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Positive Patient Identification, Consent and Documentation

As part of the nursing process, there are specific procedures you must follow when engaging in videoconferencing with your patient. These procedures include positive patient identification (PPI), informed consent and documentation.

You must complete PPI by verifying three pieces of information each time a videoconference occurs with the patient. The three positive patient identifiers you must include are name, date of birth and MCP number.

You must obtain informed client consent (NLCHI, 2020). Consent is provided verbally and does not require a signature from the patient. When obtaining consent, you must include the following, and the patient must verbally agree to:

- The nature of the service
- The benefits and risks
- That participation is voluntary and that the patient may withdraw at any time

Your documentation must include the following components:

- Informed client consent was obtained as above
- Consent was obtained from the patient to have other individuals present during the videoconference
- If an assessment was completed, how it was done virtually
- How decisions were made and communicated to the patient virtually
- The date, start and stop time of the virtual encounter

Conclusion

You have now completed **Module Five: Virtual Presence** and have learned skills and processes related to videoconferencing within the RPM platform.

Congratulations! You have completed all modules in the orientation toolkit and are now ready to conclude your orientation period. You will need to review all of your checklists to ensure you had the opportunity to meet all your learning objectives and needs. If you identify you need more education or training, please notify your mentor to arrange this.

Mentorship continues after your orientation period. You are encouraged to reach out to the RPM team members with questions or any concerns you may have.

Remember, according to Benner's (Thomas & Kellgren, 2017) novice to expert theory, it takes up to five years for a nurse to become an expert in an area of nursing practice. Continue to ask questions, seek as many learning opportunities as possible and challenge yourself to become an expert in the field of RPM.

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