

Role of the Clinician in Remote Patient Monitoring: Skills Development Through Curriculum

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ABSTRACT

Background

Healthcare spending is increasing exponentially secondary to unstable and ineffective chronic disease management. Remote patient monitoring (RPM) is of key interest to address related health disparities.

Purpose

The purpose of this project is to explore the educational needs of clinicians and suggest how to build RPM curriculum that supports clinicians.

Project Description

Utilizing a popular nursing education model where data management, technology, patient safety/quality and clinicians roles intersect, this project will identify tailored solutions that are essential to providing this quality service. The project will also explore reduction of the associated per capita cost.

Methodology

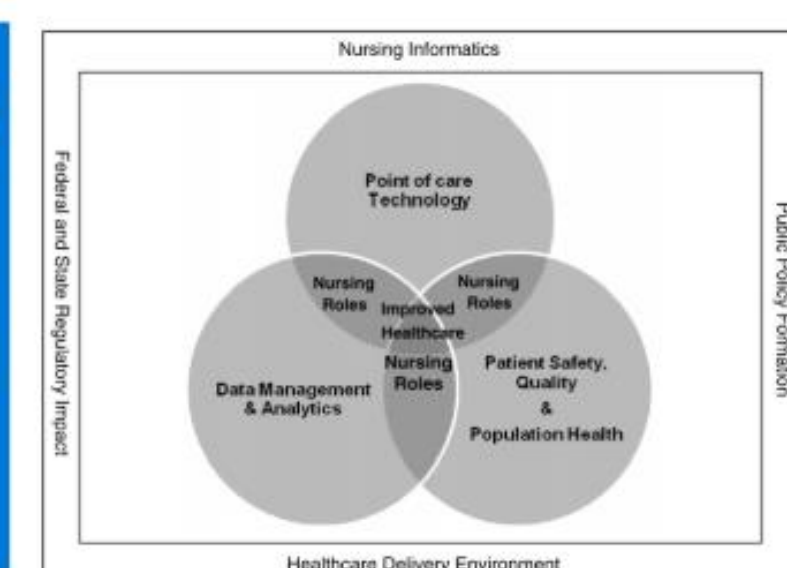
Proposed RPM curricula will be created by student and faculty, then validated by subject-matter experts and other evaluations. Clinical expertise, data analytics, industry characteristics, and roles development will represent the concepts-based curriculum components.

Results

Clinician effectiveness using RPM, patient satisfaction with RPM, and reduction in costs will be targets for successful implementation.

PROJECT DESCRIPTION

Utilizing a popular nursing education model where data management, technology, patient safety/quality and clinicians roles intersect, this project will identify tailored solutions that are essential to providing this quality service.



PROJECT TOOL: TRUMONITOR



The nurse in the remote patient monitoring clinic receives the following notification for a client being managed for congestive heart failure. Which action is most appropriate at this time?

Consider using to screen potential new hires

- Encourage the patient to drink 64 ounces of water
- Encourage the patient to take a dose of hydrochlorothiazide
- Encourage the patient to walk around for 5 minutes
- Encourage the patient to describe how they are feeling at this time

BACKGROUND



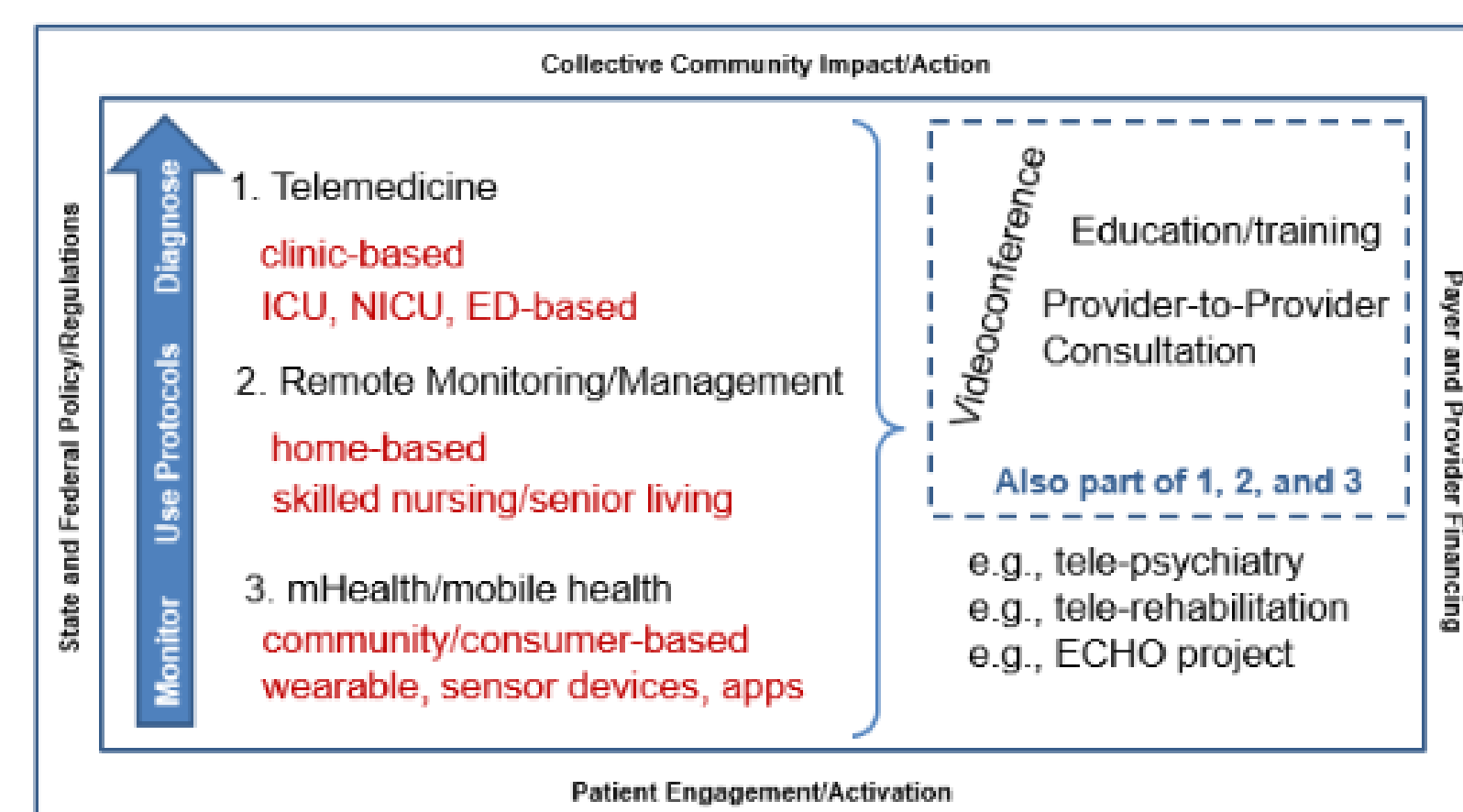
Unstable and ineffective chronic disease management is increasing healthcare spending exponentially. Remote patient monitoring (RPM) is of key interest to address related health disparities.

METHODOLOGY

- Intervention 1: Collaborating with RPM expert to perform a needs assessment of telehealth clinicians
- Intervention 2: Market analysis for tools to assist in skills development
- Intervention 3: Clinical expertise, data analytics, industry characteristics, and roles development will represent the concepts-based curriculum components



PROJECT TOOL: TIETZE TELEHEATH FRAMEWORK



PROJECT TOOL: CURRICULUM MAP

	Tech	Data	Patient Safety/Quality	Role	Industry	Clinical Skills (Assessment to judgment)
SLO4BS	Telemedicine Cart	Tableau	The Joint Commission	Interpretive journal	GDB with KLAS	OratSim
SLO2BS	4 point exam	Excel and discharge claims data	JAHCD safety metrics	Evidence-based Brief papers	Evidence-based brief papers	SnagMD
SLO3BS	Appsheet for app creation via Google	PsychData	Patient Safety and Quality Care	Interpretive Journal	Interpretive Discussion Board	TruMonitor
SLO4MS	Telemedicine Cart	Tableau	Interpretive Journal Patient Safety and Quality	Discussion Board	GDB with KLAS	SimMan
SLO2MS	Video Conferencing etiquette	Software Market Analysis	Institute for Healthcare Improvement Patient Safety	Demonstration of Role Role Play utilizing Videoconferencing application	Evidence-based brief paper	TruMonitor
SLO3MS	Appsheet for app creation via Google	Excel Dashboard	Interpretive Journal Patient Safety and Quality Home medications	Case Study	Interpretive Discussion Board	SnagMD

PURPOSE



To explore the educational needs of clinicians and suggest how to build RPM curriculum that supports clinicians.

SEARCH STRATEGY

- An online review of literature was conducted via the Texas Woman's University library databases where EBSCO Host was used to search within CINAHL Plus with Full Text and MEDLINE plus with Full Text simultaneously.
- A search was also conducted via google using the keywords *remote patient management training scholarly articles*.
- The MESH headings option was also utilized. Keywords used were *telehealth AND training, telehealth AND course, telehealth AND curriculum, ehealth AND training, ehealth AND course, ehealth AND curriculum*.
- The search was refined by adding the following filters: (a) published from January 2007 to March 2019, (b) full text, (c) english language. The refined search yielded several results that were examined for appropriateness for this paper upon discretion.

RESULTS

- List et al., 2019, reported that student confidence in telehealth knowledge increased following the intervention. The change provided an opportunity for faculty to consider additional approaches to integrating telehealth learning experiences in practicum courses.
- Gallagher-Lepak., 2009, reported that participants showed an increase in informatics skills with systems as evidenced by an improved average score after the faculty development year and all participants reported some degree of proficiency in their informatics skills related to systems.
- Erickson et al., reported that the classroom discussion and 4-hour block of clinical experience with a preceptor increased students' knowledge of telehealth as a means of providing care.
- Literature Review - See table 1 for list of key evidence-based studies.

Key Literature Review Articles

1. Title	2. First Author	3. Date	4. Country	5. Patient Population	6. Sample Size	7. Intervention of Interest	8. Design (Experiment, observation, etc.)	9. Level of Evidence (e.g., RCT, meta-analysis, correlation, opinion)	10. Comparison of Interest	11. Outcome of Interest	12. Results of Study	13. Conclusion	14. Strengths	15. Limitations
A. 1. Improving Telehealth Knowledge in Nurse Practitioner Training for Rural and Underserved Populations	2. Betsy A. List	3. September 2018	4. USA	5. Family nurse practitioner (FNP) students	6. 22	7. A presentation designed to increase knowledge of telehealth as a tool for delivery of health care services.	8. Observation	9. Cohort study	10. Assess student confidence in telehealth knowledge pre and post classroom learning activity.	11. Increase FNP student knowledge and confidence in the delivery of care via telehealth.	12. Student confidence in telehealth knowledge was expected to increase as a result of the classroom learning activity.	13. Implementing telehealth education into FNP programs will improve care access.	14. Study identified a need for primary care clinical experiences NP students need to learn telehealth etiquette practice interprofession al collaboration, and develop skills in using the technology to maximize the benefits for rural and underserved populations.	15. The sample size was small. Participants
B. 1. Integrating Telehealth Into the Graduate Nursing Curriculum	2. Christie Ehle Erickson	3. January 2015	4. USA	5. Nurse practitioner students	6. 72	7. Integrating a 1-hour classroom orientation to telehealth technology and skills along with a 4-hour clinical	8. Observation	9. Cohort Study	10. Students level of knowledge, satisfaction, and interest in using telehealth as a means of providing patient care pre and post intervention	11. Knowledge and experience with telehealth will lead to increased satisfaction and interest in using telehealth, thereby increasing the number of NPs prepared and skilled to provide care via telehealth.	12. The experience increases students' knowledge of telehealth as a	13.	14. Identified a gap in telehealth experiences for nurse practitioners and its need to provide care	15. Small sample size An overall summation is reported Data is not reported based on the 72 participants experience
C. 1. Integrating Telehealth in Nursing Curricula: Can You Hear Me Now?	2. Susan Gallagher-Lepak RN, PhD	3. June 2009	4. USA	5. Nursing Faculty Informatics and Telehealth scholars	6. 26	7. Distance learning methods were used to advance faculty knowledge and skills in telehealth across nursing programs at five campuses.	8. Observation	9. Cohort study	10. Knowledge level of faculty telehealth pre and post intervention	11. Increase nursing faculty knowledge of telehealth	12. Participants showed an increase in informatics skills with systems as evidenced by an improved average score after the faculty development year and all participants reported some degree of proficiency in their informatics skills related to systems (all scores above 1) (Item 27). Participants also showed improvement in their use of informatics knowledge with systems	13.	14. Study identified a need to educate nursing faculty on telehealth prior to integration into the curriculum	15. Small sample size