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## **Optimizing Digital Proficiency to Improve Perceived Self-Efficacy in Telehealth Nurses**

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# Optimizing Digital Proficiency to Improve Perceived Self-Efficacy in Telehealth Nurses

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By

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### **Executive Summary**

The use of telehealth to provide care management services has increased as healthcare continues to evolve. Seven million Americans were predicted to use telehealth in 2020, which increased to over 35 million through the pandemic. These services have been shown to decrease healthcare disparities and promote positive health outcomes. Education and training for nurses providing telehealth services have not kept up with the increased demand. Nurses providing care management telehealth services in a large tertiary health system have low perceived self-efficacy for technology. Leaders in the organization believe this is causing a lack of digital proficiency in their workforce. This lack of proficiency leads to a gap in telehealth patient care services as nurses are unable to carry full telehealth caseloads. Educational interventions to enrich perceived self-efficacy and improve digital proficiency will be provided to close this care gap. Providing technology-based education to nurses delivering telehealth can increase their perceived self-efficacy, leading to improved digital proficiency. As digital proficiency increases, the care gap should close.

Nurse leaders have identified the significant gap in patient care as variations in telehealth caseloads contribute to poor patient health outcomes. Some patients cannot be enrolled in telehealth-based care management services as some nurses cannot maintain caseload benchmarks. This variation leads to the inability to enroll patients efficiently in care management services. Nursing leadership believes this caseload variation may be due to disparities in the digital proficiency of the care managers.

Evidence suggests that increasing perceived self-efficacy can promote increased workplace engagement and output. Recent literature suggests people who believe they can perform a skilled task and are provided with job-specific education have better job performance. Recent studies suggest that providing telehealth nurses with education and training specific to technology can increase perceived self-efficacy with technology. The specific aims of the project are to improve patient access to telehealth services by increasing the provider's ability to utilize telehealth effectively by improving perceived self-efficacy for working with technology.

Nurses in the telehealth care manager job code attended a 2-hour education session to provide technological strategies to promote efficiency. Participants were screened using the General Self-Efficacy Assessment tool prior to the education session and again after the education session. Scores showed that there was not an overall impact on general self-efficacy. The next step in data collection and assessment involved a Likert scale post-intervention to assess if the intervention was successful in increasing the ability to use computers to engage patients and increase technological skills. These scores showed that the educational interventions increased participants' ability to use technology and computers. Half of the participants felt the intervention was impactful enough to help them engage more patients.

70% of project outcome goals were met, demonstrating that education promoting digital proficiency shows a potential to improve participants' perception toward technology and implications for improving how they work. This indicates that ongoing support and engagement with telehealth nurses to provide relevant and timely education can enhance how they provide patient care. This support could also lead to better patient access to telehealth services that could translate into decreased healthcare disparities for telehealth patients.

**Keywords:** Digital proficiency, telehealth, self-efficacy

## **Results**

### **Initial Intervention Steps**

Initial intervention steps included establishing communication and engagement with the newest leader of the department, as the prior leader I had engaged with during the project's planning phase left the organization. This step was unanticipated and took some one-on-one time to create trust and project buy-in. The incoming leader ultimately supported the project and was willing to help recruit existing staff as project participants. The next step was to optimize meetings with potential participants to engage them to participate in the program. Department leadership encouraged meeting with the larger team, including operational directors and physician leaders, to help engage the entire department alongside the intended population. This approach allowed program participants to see executive leaders supporting the project, giving participants more reason to engage.

Another critical factor for the importance of engagement is that the target participant population shrunk from an anticipated twenty participants or greater to seven due to organizational changes and staffing challenges. Participant engagement and agreement were crucial based on the lower-than-expected number of potential participants. This impacted the project by having to create short answer questions to elicit more detailed responses about the impact. This level of detail can add richness to the project responses that would have been administratively burdensome in a larger population of participants. The effect of adding those questions included time and effort spent creating questions and updating the areas of the scholarly project document that correlated.

The next step was to review what educational interventions existed in the system to utilize for the intervention, as department workflow had changed since the origination of the

project. While speaking with the participant group, it was noted that tutorials for daily use programs, such as Teams and Excel, were preferred. The original intent was to use the organization's internal education method housed in the Healthstream system. None of the tutorials requested were available in Healthstream, so the determination was made to use an existing organizational education intervention specific to Teams and a basic Excel tutorial. With this change, an email was created with instructions and specific links for each training versus class assignment in Healthstream, leading to a less polished process for the overall study. However, the intervention, while less refined was more specific to the participant's workflows.

### **Project Outcome Results**

This project was based on Bandura's model of self-efficacy (Lenz & Shortridge-Baggett, 2002), and the project interventions are correlated at multiple intersections (see Appendix A). The goal of the training modules was for participants to state increased self-efficacy for technology after the educational interventions (Gifford et al., 2012; Hah et al., 2019; Van Houwelingen et al., 2021).

Four of the seven potential participants completed the pre-intervention survey, educational interventions, and post-intervention survey data. Two participants were bachelor's prepared nurses, and two were master's prepared (Table 1). The majority ( $n = 3$ ) of participants worked in the organization for 2-5 years, while the other participant indicated they have been with the organization 0-2 years.

Outcome one measured the identification of participants for training and if the training was deployed to them by the project start. This outcome was met at 100% as all six participants that consented had training developed and deployed to them by the project start date. Outcome two stated that 80% of Telehealth nurses received educational interventions within one month of

the project's start. This outcome was met; 100% of participants received educational interventions within one month of the project's start date.

Outcome three measured participants' reported self-efficacy toward technology after project interventions. This was measured using the Likert-based General Self-Efficacy Scale (GSES). The project goal was that 50% reported improvement; results showed one participant stated a decrease by 11%. One participant stated improvement, and two scores remained the same. The outcome was not met overall, with only 25% of participants showing an improvement (Table 2). Outcomes four through seven were also measured using a Likert-based scale (Table 3). Outcome four showed that 50% of nurses reported an increase in their ability to expand their caseloads after project interventions, which meets the goal of 50%. Outcome five stated that 50% of Telehealth nurses reported an increase in their technological skills after the intervention. Results showed 100% reported an improvement exceeding that outcome goal. Outcome six results show that 100% of participants reported improved ability to use computer programs to their full functionality, indicating that the goal of 50% was exceeded. Outcome seven stated that 70% of Telehealth nurses reported an increased ability to engage patients in telehealth programs after program interventions. Results showed 50%, signifying that this outcome was not met. Short-answer responses indicated that participants found the training helpful overall as a basic overview and tool for training (Table 4). One person noted they found it useful for overall tasks, not increasing caseloads. One person noted there could be an improvement in the specificity of the intervention as it relates to healthcare, and one person added that they would like a specific intervention for email. (Table 4). Overall, in analyzing the responses, the interventions were helpful, and the most successful interventions were the ones most specific to the daily tasks of the participants.

## **Unanticipated Outcomes**

There were a few unanticipated consequences from the foundational setup of the intervention. The educational interventions were set up to be self-paced because the staff works remotely, and it was anticipated that the intervention being accessible to remote work would engage more nurses in the process. After informed consent was obtained, the pre-intervention survey and video links were emailed to them. Unfortunately, the pre-intervention survey responses came in at a slower-than-anticipated pace, and coordinating the post-intervention survey responses took more time and effort than anticipated, as some participants spent weeks watching the videos. In retrospect, project expectations would have included two one-hour team meetings, and the team would have had time to complete educational interventions in that protected time. This would have allowed for a defined timeline for the pre-intervention survey and an allocated time from educational intervention to the post-intervention survey.

At the start of the project, the staffing of the telehealth care management unit was predicted to be in the mid-twenties. However, due to unforeseen staffing and healthcare challenges at the time of the intervention, the pool of potential participants was seven. The decreased number of participants did give the option to add open-ended questions, which were utilized in the implementation.

## **Missing Data**

One participant did not complete a pre-intervention or post-intervention survey after consent. The participant did not respond to multiple follow-up outreach attempts. One participant broke her arm after completing the pre-intervention survey and required surgery, resulting in a



long absence after completing her survey. This participant eventually asked to be removed from the project as she would not return to work.

### **Expenses**

Expenses were reported in the Budget Plan (Appendix G) and did deviate from the original because Healthstream was not utilized as originally intended. Cost savings of \$622.65 were recognized. The Expense Report (Appendix H) and Statement of Operations (Appendix I) also deviated from the original due to the change in Healthstream. Cost savings of \$340.00 were recognized on both.

## **Interpretation**

### **Summarization of Key Findings**

Education provided to telehealth nurses has demonstrated an increase in digital proficiency by raising self-efficacy and competency (Gifford et al., 2012; Van Houwelingen et al., 2021). Four of six total participants completed the project using the GSES, a Likert-based scale questionnaire, and open-ended survey questions. This project showed overall that educational interventions have the potential to increase digital proficiency. Educational interventions increased participants' ability to use technology and the full functionality of their computers, which suggests an increase in competency, across the board. Half of the participants believed that they could increase their caseloads and engagement of patients (Table 4). While this did not meet the outcome goal of 70%, it still demonstrated that educational interventions have the potential to increase telehealth nurse caseloads. open-ended responses showed that the educational interventions were helpful in raising competency by contributing to the participants' general technological knowledge (Table 3).

In reviewing the key findings on how digital proficiency impacts self-efficacy, Table 2 shows that there was no significant impact on overall general self-efficacy for most of the participants. Two participants reported the same score pre- and post-intervention, while one showed a slight increase. One participant decreased in score, indicating the education intervention may have triggered a feeling of setback or failure (Wilde & Hsu, 2019). However, overall, the results demonstrate that the intervention increased digital proficiency while not meaningfully impacting self-efficacy.

### **Comparison to Literature**

Literature showed that feelings of competency in telehealth increased after undergoing targeted telehealth training (Gifford et al., 2012; Van Houwelingen et al., 2021). Training specific to the technology used in the workplace was deployed to this group, and the resulting data collected aligns with recent literature. The educational interventions increased digital proficiency in all participants, and half of the participants believed they could onboard more patients after receiving the training. In addition, evidence suggests that increased self-efficacy around technology leads to greater use of technology (Koivunen & Saranto, 2018; Öberg et al., 2018).

### **Impact on People and Systems**

Increased digital proficiency has a significant positive effect on the use of telehealth technologies (Hah et al., 2019). Maximizing opportunities to increase digital proficiency can improve patient care opportunities in the health system, and access to telehealth services has the potential to close gaps in healthcare disparities by providing accessible care (Health Resources and Services Administration, 2022). Utilizing job-specific educational training for telehealth

nurses in a large tertiary health system increased their digital proficiency. This increase potentially allows the organization to support more patients in telehealth.

The education used in the intervention is free and widely available to all staff, yet most staff do not engage with the education material without specific instruction. The educational materials could be presented to all employees in the telehealth job code. This practice is consistent with current literature showing that presenting this material to employees who engage in telehealth tends to improve their digital proficiency (Gifford et al., 2012; Van Houwelingen et al., 2021). The open-ended survey results in Table 4 showed that participants thought that the educational interventions would be especially helpful during new hire training. A systemwide orientation already exists, and these trainings could be easily incorporated.

### **Observed Differences in Outcomes**

Two outcomes did not meet the set goals. Outcome three was that there would be an increase in general self-efficacy after the intervention. This outcome was unmet, as only 25% of participants reported increased general self-efficacy. There are many factors that could influence these results, which include existing low self-efficacy overall (Wilde & Hsu, 2019), lack of experience in mastery of a subject (Bandura, 1977), and beliefs of participants during the intervention (Neupert et al., 2009). These factors could not be explored fully with the project's time constraints and content specificity but could offer an opportunity for self-reflection for the participants. Future projects could include an exploration of these topics as they relate to institutional support and participant engagement.

Outcome seven was that 70% of participants would agree they could increase their caseloads. Results showed that 50% reported they could. The small sample size and inability to guarantee complete anonymity can also be impactful. This outcome was a challenge to navigate

as it is tied to performance, which can be a sensitive question to some participants, although the data is de-identified, and the informed consent specifically states that results will not impact employment. Perception of a sensitive question can result in misreporting, misreading, or misunderstanding the question in its entirety (Yan, 2021).

### **Limitation Mitigation Efforts**

The project had two main limitations: the low number of participants and the sensitivity around the interventions and outcomes being directly related to performance. The first limitation was recognized about midway into the project lifecycle, and work was completed to add data enrichment with open-ended questions in the post-survey. A larger population would have yielded a more robust data collection. However, the open-ended questions that resulted in information would not have been possible through a survey.

Workplace productivity metrics were heightened by the COVID-19 pandemic, particularly as nonpatient-facing staff were furloughed (U.S. Department of Health and Human Services, 2022). This impacted the organization's staff as some were furloughed, and positions were eliminated. There was widespread concern about the telehealth nurse care manager role as the reduced staffing number was a significant point of concern. To mitigate any limitations, attention was paid to structuring the survey responses, writing, and presenting the informed consent to the participants with this in mind. The participants were solely identified by a number that was blinded to the SP project manager, and all participants' results were kept confidential. The informed consent process leaned heavily on relaying the efforts taken to maximize the confidentiality of the participants.

### **Policy Implications**

Policy implications for improving digital proficiency for telehealth nurses tie into multiple areas. The main area is focused on increasing services to people with healthcare disparities, ( especially rural and frontier populations. Telehealth tends to improve care for patients with disparities (Health Resources and Services Administration, 2022) . As the flexibilities with telehealth that were created with COVID-19 are potentially permanently expanded, the need for nurses trained in telehealth services could increase dramatically. There is tremendous potential for nurses to have a proven pathway to digital proficiency.

Currently, there are implications for the increased use of telehealth in multiple areas of healthcare. These include billable chronic care management visits, the promotion of asynchronous telehealth, and remote patient monitoring. Bill H.R. 3440, promoting the permanent expansion of telehealth, was recently introduced in the 118<sup>th</sup> Congress (Congress.gov, 2023). The passing of this bill could cement the need for telehealth services across service lines.

### **Conclusions**

Five of the seven project outcome goals were met, demonstrating that education promoting digital proficiency has the potential to improve participants' perception toward technology and implications for improving how they work. This indicates that ongoing support and engagement with telehealth nurses to provide relevant and timely education can enhance how they provide patient care. This support could also lead to better patient access to telehealth services, as 50% of participants felt they could onboard more patients after the educational intervention. This scholarly project was tailored specifically for the organization's telehealth workflows, but the intervention could be easily adapted for other employees using technology.

Sustainability was a key factor during the creation of the project. The project manager ensured fiscal sustainability by using free, widely available resources to create the project

workflow. The project setup followed a familiar survey, intervention, and post-survey flow that the participants found familiar. This helped to ensure that they could engage during project implementation despite a heavy workload. Key feedback from participants included that they found the education meaningful and helpful. Promoting this feedback could help gain buy-in from other groups interested in piloting the project.

This project is easily adaptable to any participant group that uses technology in their work. This project could be assigned to certain job codes e.g., during orientation, promoting digital proficiency early and often across the organization. The education content would need to be tailored to the systems used by the participants but otherwise ready for deployment.

Targeted education to improve digital proficiency has many implications for healthcare, as organizations use many different types of technology and do not always have digitally proficient staff. An impactful step for further study would be trending participants' onboarding and patient engagement rates to see if they reach the project's long-term objective of increasing caseloads. Reaching this objective could translate into a key metric to promote the project to leaders.

Project implementation showed this to be an economical and impactful intervention to increase digital proficiency in telehealth nurses. The next steps for the project include disseminating the results to organizational leadership. Further efforts will be taken to work with leadership to evaluate the potential for this type of education to be piloted to new hires outside of telehealth that work with multiple technological platforms, as the project was developed to be adaptable. Telehealth services are here to stay, and the establishment of sustainable workflows to reach more patients needing telehealth services is key to unlocking the potential of this care modality.



## References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Congress.gov (2023). H.R.3440 - Protecting Rural Telehealth Access Act. Retrieved September 24, 2023, from <https://www.congress.gov/bill/118th-congress/house-bill/3440/actions>
- Gifford, V., Niles, B., Rivkin, I., Koverola, C., & Polaha, J. (2012). Continuing education training focused on the development of behavioral telehealth competencies in behavioral healthcare providers. *Rural and Remote Health*. <https://doi.org/10.22605/RRH2108>
- Hah, H., Goldin, D., & Ha, S. (2019). The association between willingness of frontline care providers' to adaptively use telehealth technology and virtual service performance in provider-to-provider communication: Quantitative study. *Journal of Medical Internet Research*, 21(8), e15087. <https://doi.org/10.2196/15087>
- Health Resources and Services Administration (2022). Office for the advancement of telehealth. <https://www.hrsa.gov/rural-health/topics/telehealth>
- Lenz, E.R., & Shortridge-Baggett, L.M. (2002). *Self-efficacy in nursing: Research and measurement perspectives* [ebook edition]. Springer Publishing Company. <https://books.google.com/books?hl=en&lr=&id=6bKAQG-KXuMC&oi=fnd&pg=PA9&dq=educational+theory+perceived+self+efficacy&ots=c98A2WIWZ&sig=AZqffE3ti4W5-208hJcMst1icG0#v=onepage&q=educational%20theory%20perceived%20self%20efficacy&f=false>



- Neupert, S. D., Lachman, M. E., & Whitbourne, S. B. (2009). Exercise self-efficacy and control beliefs: effects on exercise behavior after an exercise intervention for older adults. *Journal of aging and physical activity*, 17(1), 1–16. <https://doi.org/10.1123/japa.17.1.1>
- U.S. Department of Health and Human Services (2022). Impact of the COVID-19 pandemic on the hospital and outpatient clinician workforce. Retrieved on September 24, 2023, from <https://aspe.hhs.gov/sites/default/files/documents/9cc72124abd9ea25d58a22c7692dccb6/aspe-covid-workforce-report.pdf>
- Van Houwelingen, T., Ettema, R. G. A., Bleijenberg, N., van Os-Medendorp, H., Kort, H. S. M., & ten Cate, O. (2021). Educational intervention to increase nurses' knowledge, self-efficacy and usage of Telehealth: A multi-setting pretest-posttest study. *Nurse Education in Practice*, 51, 102924. <https://doi.org/10.1016/j.nepr.2020.102924>
- Wilde, N., & Hsu, A. (2019). The influence of general self-efficacy on the interpretation of vicarious experience information within online learning. *International Journal of Educational Technology in Higher Education*, 16(1), 26. <https://doi.org/10.1186/s41239-019-0158-x>
- Yan, T. (2021). Consequences of Asking Sensitive Questions in Surveys. *Annual Review of Statistics and Its Application*, 8(1), 109–127. <https://doi.org/10.1146/annurev-statistics-040720-033353>

**Table 1***Demographics of Participants at Baseline*

Baseline Characteristics	All Participants	
	n = 4	%
Highest Degree		
Associates		
Bachelor's	2	50
Master's	2	50
Doctorate		
Length of Employment		
0-2 years	1	25
2-5 years	3	75
5-10 years		
Greater than 10 years		
Age		
18-24		
25-35	1	25
36-45	1	25
46-55	2	50
56-65		
65-older		

**Table 2***General Self-Efficacy Scores*

Participant	Pre-Education Score	Post-Education Score	Score Change %
1	36	32	-11.1
2	39	40	2.5
3	38	38	0
4	33	33	0

*Note.* Score range in points value from 10 and 40 based on response. Higher scores indicate more self-efficacy.

**Table 3***Likert Based Post Survey Results*

Statements	Not true at all	Hardly True	Moderately True	Exactly True
My ability to use technology has improved due to the education I was given for this project			1	3
I can use the full functionality of my computer after the project.			4	
I can engage more patients in services after the project	1	1	2	
I am able to expand my caseloads after the project	1	1	2	
I am able to engage more patients in care management services after the intervention.	1	1	2	

*Note.* Scores of Moderately True and Exactly True are considered positive scores. Scores of Not True at All and Hardly True are considered negative scores.

**Table 4***Reaction Survey Analysis Additional Feedback*

Questions	Participant Responses
Did you find the educational videos helpful?	<p>Definitely, but they are more useful for other daily tasks and not increasing pt caseload.</p> <p>Yes, it was a great basic overview.</p> <p>Yes. I wish I would have had this training when I was a lead. I was forever having to ask questions about Excel and TEAMS. Once becoming a care manager I've had much more opportunity to use TEAMS and feel comfortable with it. This would be great for new members to the health system.</p> <p>Would save time!</p> <p>Yes the Excel video in particular.</p>
Is there any educational content you like to see added?	<p>It would be great to see an excel workbook tutorial based on healthcare data versus financial data.</p> <p>I think for new staff, better education on Outlook would have been great.</p>

*Note.* Open-answer survey responses.

## Appendix A

### Literature Review Summary

**Search Statement:** The PICO format (P= chronic care case managers providing telehealth services; I: given consistent training to increase digital proficiency; C: given no training; O: increased digital proficiency with training will increase capacity to provide services leading to greater access to care) was used to develop the question, "Will a digitally focused curriculum support nurses to increase their technological skillset for professional advancement leading to increased self-efficacy and digital proficiency?" The databases CINAHL, Medline, PsycInfo, Psychology, Behavioral Sciences Collection, and Cochrane Central Register of Controlled Trials were searched from 2012 to present using the following keywords: *telehealth nurse communication, telehealth nurses, education, patient outcomes*. The titles of 101 articles were reviewed, 8 articles were read in their entirety, and 7 articles were identified as being relevant. This led to one article with level five and six articles with level three level of evidence.

#### ***PROBLEM IDENTIFICATION***

##### **TITLE OF ARTICLE**

Issues affecting nurses' capability to use digital technology at work: An integrative review.	<b>AUTHORS</b>	<b>RESEARCH QUESTION</b>	<b>TYPE OF STUDY</b>	<b>LEVEL OF EVIDENCE</b>	<b>DESCRIPTION OF SAMPLE</b>	<b>OUTCOME MEASURES</b>	<b>RESULTS/KEY FINDINGS</b>
Implementation of an Electronic Health Records System in a Small Clinic:	Brown, J., Mphil, N., Bosco, A.M., Mason, J.,	Evaluate and organize evidence in the development of digitally	Systematic Review	IIIA	17 total articles reviewed: 7 quantitative, 8 qualitative, and 2 mixed methods	User proficiency and competence, point of care	Older, more experienced nurses may be less digitally capable, poor end user usability contributes to

The Viewpoint of Clinic Staff.	and Morgan, A. (2020)	capable nurses and how digital skills are being integrated into nursing practice.				access to data, nurse concerns, and investment for implementation	poor digital integration.
National Nursing and Midwifery Digital Health Capability Framework	Carayon, P., Smith, P., Hundt, A. S., Kuruchittham, M., and Li, Q. (2009)	Evaluation of how employees in the clinic perceived their work as it related to the EHR technology and the changes in work patterns due to the EHR implementation	Nonexperimental Study	IIIA	21 out of 25 clinic employees completed the pre-implementation survey, while 20 out of 25 employees completed the post-implementation survey. Response rates were 84% and 80%, respectively.	Perceived quantitative workload increased slightly after EHR implementation, compared to before EHR implementation	The introduction of a new technology is likely to change jobs and work processes. It can create both positive and negative impacts on job characteristics therefore, it is important to understand the impact of the technology on multiple dimensions of the jobs and work processes
Integration of Computer and Internet-based Programmes into Psychiatric Out-patient Care of	Australian Digital Health Agency (2020)	Define the digital health knowledge, skills and attitudes required for professional	Framework for practice guidance	IVA	Not applicable	The Australian Commission on Safety and Quality in Health Care (ACSQHC)	It is essential that every nurse and midwife has the skills to use data, information, knowledge and technology to

Adolescents with depression.		practice. Complement existing individual knowledge, skill, and attitudinal frameworks. Provide a solid basis for tailored learning				endorses the safe and effective implementation of digital health in Australia. Digital health when implemented appropriately can improve the quality, safety and efficiency of healthcare.	maximize health and societal outcomes, improve services, and extend their evidence-based practice
A Field Experiment: Instructor-based Training vs Computer-based Training	Kurki, M., Hätönen, H., Koivunen, M., Anttila, M., and Välimäki, M. (2013)	The aim of this explorative study was to describe nurses' opportunities to integrate computer and Internet-based programs in psychiatric outpatient care among	Mixed methods	IIIA	12 Finnish registered nurses working at the outpatient clinics of two university central hospitals.	The analysis showed nurses used the computer and Internet in their daily work for data transmission and informal interaction with adolescents. Findings	Web-based communication may enhance access and efficiency, but it has been slow to be integrated into clinical practice. Barriers including nurses' poor computer skills, negative attitudes to technology and low organizational support have been identified.



		adolescents with depression. Therefore, nurses' daily computer use and possible problems related to it were investigated.				revealed that nurses who have good computer skills, a positive attitude towards using the computer and Internet and were motivated to make use of both on a daily basis.	Nurses may also fail to see the advantages of information and communication technology (ICT) use in nursing practice and they may ignore the applicability of ICT in face-to-face care Quantitative: Baseline skill with 3 measures Qualitative: measure of experience
<b>POTENTIAL SOLUTIONS</b>	Desai, M. S., Richards, T., and Eddy, J. P. (2000)	Researchers have studied key variables such as training support and delivery, techniques, and individual differences that can be manipulated to enhance training	Mixed methods	IIIA	111 end users	The CBT subjects' overall end-of-training and one-month-after-training performance was significantly better than IBT subjects' performance	Computer based training had overall better learning outcomes compared to Instructor based learning. Supports a computer-based learning program. Quantitative: Baseline skill Qualitative: measure of end user satisfaction

		program design					
TITLE OF ARTICLE							
Digital Transformation in Community Nursing.	AUTHORS	RESEARCH QUESTION	TYPE OF STUDY	LEVEL OF EVIDENCE	DESCRIPTION OF SAMPLE	OUTCOME MEASURES	RESULTS/KEY FINDINGS
Perceived Telehealth Behaviors by a Nurse Practitioner.	Brown, A., & Hartley, K. (2021)	How digital transformation was used in Sussex Community Foundation Trust to benefit community nurses and increase efficiency in practice.	Expert Opinion	VB	NA	Improving in digital platform use by nurse users led to: <ul style="list-style-type: none"> <li>Allocating was reduced by 38%</li> <li>Mileage reduction of 47%,</li> <li>14% more visits per day</li> </ul>	<ul style="list-style-type: none"> <li>Community nursing can benefit from digital transformation by using digital tools to create time efficiencies.</li> <li>Nurse engagement is key success of digital projects</li> </ul>
The Association Between Willingness of Frontline Care Providers' to Adaptively Use	Austin, M. (2021)	An evaluation of nurse practitioners' perception of telehealth and telehealth	Qualitative study	IIIB	9 nurse practitioners were interviewed	No formal tools/scales utilized Development of 4 themes in	<ul style="list-style-type: none"> <li>Free-flowing dialog interview process.</li> <li>Provider ability is a key component</li> </ul>

Telehealth Technology and Virtual Service Performance in Provider-to-Provider Communication: Quantitative Study.		etiquette professional behaviors.				<p>the interview process</p> <ol style="list-style-type: none"> <li>1. Provider behavior during telehealth is key to developing etiquette</li> <li>2. Telehealth etiquette is key to engagement</li> <li>3. Telehealth etiquette is a learned skill</li> <li>4. Perceptions about etiquette will show the need for training</li> </ol>	<p>to success in telehealth.</p> <ul style="list-style-type: none"> <li>• Combining the expertise of NPs with the use of telehealth can contribute to the eradication of health care inaccessibility by increasing access.</li> </ul>
Swedish Primary Healthcare Nurses'	Hah, H., Goldin, D.,	A study to examine frontline care	Nonexperimental Study	IIIA	147 responses from graduate nursing students	<ul style="list-style-type: none"> <li>• Utilized Goodhue's five item</li> </ul>	<ul style="list-style-type: none"> <li>• Web-based survey reports.</li> </ul>

Perceptions of Using Digital Ehealth Services in Support of Patient Self-Management.	and Ha, S (2019)	providers' technology adaptation behaviors in the electronic consultation context.			who were training to be nurse practitioners in their master's program	<p>scale of task performance. (Goodhue &amp; Thompson, 1995) to explain IT postadoption performance. (DV)</p> <ul style="list-style-type: none"> <li>• Computer self-efficacy was measured by the Computer Self-Efficacy score (Compeau &amp; Higgins, 1995)</li> <li>• Research variables were</li> </ul>	<ul style="list-style-type: none"> <li>• Technology was positively associated with virtual service performance: (<math>b=0.762</math> <math>P=.001</math>)</li> <li>• Computer self-efficacy has a positive effect on the exploitative use of telehealth services (<math>b=0.311</math> <math>P=0.47</math>)</li> </ul>
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						measured on a seven-point Likert scale	
Experiences of frontline health professionals in the delivery of telehealth: a qualitative study.	Öberg, U., Orre, C. J., Isaksson, U., Schimmer, R., Larsson, H., and Hörnsten, Å. (2018)	A study to describe Swedish primary healthcare nurses' perceptions of using digital eHealth systems and services to support patient self-management.	Qualitative study	IIIA	20 primary health nurses were interviewed	<ul style="list-style-type: none"> <li>No formal tools/scales utilized</li> </ul> <p>Development of 3 themes in the interview process</p> <ol style="list-style-type: none"> <li>Caregiving in the midst of digital chaos</li> <li>Lacking overview and control in one's daily work</li> <li>Mixed feelings towards</li> </ol>	If nurses are to adapt to all the new policies and practices associated with the current digitalized development in primary health care, the concept of their work role must be expanded in terms of the scope of their tasks and must go beyond established views on traditional nursing.

						digitalization	
Nursing Professionals' Experiences of the Facilitators and Barriers to the use of Telehealth Applications: A Systematic Review of Qualitative Studies.	MacNeill, V., Sanders C., Fitzpatrick R., Hendy J., Barlow J., Knapp M., Rogers A., Bardsley M., and Newman S. P. (2014)		Qualitative study	IIIA	32 frontline health professionals were interviewed	<ul style="list-style-type: none"> <li>Modified Grounded Theory approach with semi-structured interviews .</li> <li>Results were entered into NVio9 and then subjected to an open coding process. Two themes were developed:               <ol style="list-style-type: none"> <li>1. Telehealth as empowering or burdenso</li> </ol> </li> </ul>	There has been strife with managing professional boundaries and identities brought about by the introduction of telehealth. Work is required to develop a shared understanding and to re-negotiate and delineate roles and responsibilities in telehealth

						me on patients 2. Telehealth as enabling or constraining on professional development and expertise.	
Educational Intervention to Increase Nurses' Knowledge, Self-Efficacy and Usage of Telehealth: A Multi-Setting Pretest-Posttest Study.	Koivunen, M., & Saranto, K. (2018)	The aim of the study was to synthesize the best available research evidence on nursing professionals' experiences of the facilitators and barriers to the use of online telehealth services in	Systematic Review	IIIA	NA	25 articles were included in the review. Data abstraction and synthesis were conducted using a thematic qualitative framework.	<ul style="list-style-type: none"> <li>• Some nurses lacked basic keyboard skills</li> <li>• Negative attitudes were a barrier to telehealth</li> <li>• Inadequate support, insufficient training, and insufficient experience are all barriers to telehealth</li> </ul>

		nursing practice					<ul style="list-style-type: none"><li>• More effective support and training are needed</li></ul>
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## Appendix B

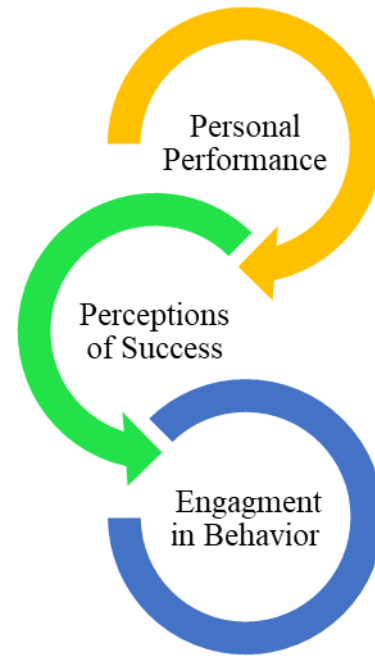
### Theoretical Framework

One theoretical framework that may be useful in guiding my project development is the Work Engagement theory of Kahn. The basic assumptions and key concepts of this theory are that people who are positively engaged (in the physical, cognitive, and emotional spaces) in their work are likely to produce more as they have a sense of ownership in their job (Huang et al. 2022) I feel this may be a good fit for my project as it is based on building clinical telehealth skills to empower nurses to increase telehealth services (increase productivity) by increasing efficiency and self-efficacy. Bandura's Theory of self-efficacy could also be utilized to guide this project. The basic assumptions and key concepts are that people's expectations of personal performance and perceptions of success will determine if individuals engage in a behavior. The proposed project is based on building telehealth skills to empower nurses to increase productivity within telehealth services. The basic premise is that increasing self-efficacy and digital proficiency will drive productivity and engagement, eventually leading to increased access to patient care.

Huang S.B., Huang C., Chang T. (2022). A new concept of work engagement theory in cognitive engagement, emotional engagement, and physical engagement. *Frontiers in Psychology*, 12. [10.3389/fpsyg.2021.663440](https://doi.org/10.3389/fpsyg.2021.663440)

Lenz, E.R., & Shortridge-Baggett, L.M. (2002). *Self-efficacy in nursing: Research and measurement perspectives*. Springer Publishing Company. <https://books.google.com/books?hl=en&lr=&id=6bKAQG-KXuMC&oi=fnd&pg=PA9&dq=educational+theory+perceived+self+efficacy&ots=c98A2WIWZ&sig=AZqffE3ti4W5-208hJcMst1icG0#v=onepage&q=educational%20theory%20perceived%20self%20efficacy&f=false>

Bandura's Model of Self-Efficacy



## Appendix C

### Memorandum of Understanding from Organization

#### Memorandum of Understanding

##### Memorandum of Understanding

Between

Serena Young, Doctor of Nursing Practice (DNP) student

Boise State University

and



This Memorandum of Understanding (MOU) outlines the terms and understanding between Serena Young, a DNP student at Boise State University, and [REDACTED] to Provide an education intervention to care manager nurses providing telehealth to increase feelings of self-efficacy in an effort to increase services.

#### **Background**

The use of telehealth by healthcare organizations has increased exponentially over the last decade, however, support and training for nurses providing telehealth has remained stagnant (Austin 2021). There is an increased need for nurses who can provide efficient telehealth services as it has demonstrated the potential to close gaps in healthcare disparities by providing accessible care to patients constrained by time, finances, distance, or disability (Health Resources and Services Administration [HRSA], 2022). Digitally proficient nurses with high perceived self-efficacy with technology were shown to have higher telehealth caseloads and increased ability to provide patient services (Van Houwelingen et al., 2020; Koivunen & Saranto, 2017).

#### **Purpose**

Nurse care managers that provide telehealth interventions in a tertiary healthcare system in the Pacific Northwest have variations in telehealth caseloads. Variations in caseloads lead to some telehealth nurses having lesser patient loads. This variation leads to the inability to enroll patients in care management services to the most efficient degree. Nursing leadership believes this caseload variation may be due to disparities in the digital proficiency of the care managers. Evidence suggests that increasing perceived self-efficacy can promote increased workplace engagement and output. Evidence also suggests that providing telehealth nurses with education and training specific to technology can increase perceived self-efficacy with technology. The project aims to improve patient access to telehealth services by increasing the provider's ability to utilize telehealth effectively by improving perceived self-efficacy for working with technology.

#### **Intended Project Outcomes**

- Improved nurses' self-efficacy related to technology

- Improved perceived ability to expand caseloads
- Improved perceived ability to communicate with patients
- Improved perceived ability to troubleshoot technological issues
- Improved perceived ability to engage patients in telehealth programs

#### **Duration**

The project will begin on May 8, 2023, and end on May 4, 2024.

#### **Reporting**

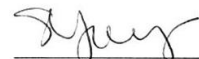
The DNP Scholarly Project will include a final report, an abstract, an oral presentation of the report, and potential publication. The DNP student will submit a Final Project Report for publication in ScholarWorks. ScholarWorks is a collection of services designed to capture and showcase all scholarly output by the Boise State University community, including doctoral dissertations and doctoral project reports.

No personal identifiers will be included and all data will be reported in aggregate form. The author welcomes any comments or suggestions from Saint Alphonsus but reserves the right to publish findings and analysis according to professional standards and principles of academic freedom. For any work of a scholarly nature, the author agrees to follow the organization(s) preferences in how it is to be named (or not) in the work.

**Agency preferences for how they are named/referred to within the student's work:** by organizational name or solely by general type of agency within a region?

A tertiary healthcare system in the Pacific Northwest.

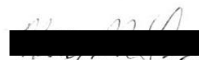
#### **Student Contact Information**



Date: 2/8/23

*DNP Student signature*

Serena Young, Boise State University DNP student



Date: 2/08/23

*Organizational Contact signature*



## Appendix D

### Logic Model

Local Problem	Step 2a	Step 1
Problem/Situation	Outcomes: Short-term	Outcomes: Long-term
Telehealth Services continue to expand and are needed to provide the greatest potential for access to care. Not all nurses providing daily telehealth services as their main responsibility have high levels of digital proficiency as noted by variations in caseloads in a large healthcare system. Telehealth nurses need high digital proficiency to increase capacity to provide telehealth services or a gap in patient access to care will persist.	80% of Telehealth nurses reported an increase in comfort with technology after project interventions.	Readmission rates (tied to reimbursement) decreased for the health system leading to favorable financial outcomes.
Telehealth Services continue to expand and are needed to provide the greatest potential for access to care. Not all nurses providing daily telehealth services as their main responsibility have high levels of digital proficiency as noted by variations in caseloads in a large healthcare system. Telehealth nurses need high digital proficiency to increase capacity to provide telehealth services or a gap in patient access to care will persist.	70% of Telehealth nurses reported an increase in the ability to expand their caseloads after project interventions.	Community health was improved by an increase in access to telehealth services with early interventions, leading to decreased number of preventative chronic disease complications.
	70% of Telehealth nurses stated a decrease in negativity towards technology after project interventions.	Non-Urgent Emergency Department visits decreased leading to a reduction of bad debt write off for the health system and a reduction of the utilization of county charity care funds.
	70% of Telehealth nurses reported they had improved communication with patients after project interventions.	
	70% of Telehealth nurses reported improvement in trouble shooting technological issues after project interventions.	
	70% of Telehealth nurses reported an increased ability to engage patients in telehealth programs after program interventions.	

## Appendix E

### Timeline

[illegible]



**Appendix F**  
Outcomes Evaluation Table

Outcome	Data Collection Instrument / Data	Analysis Goal	Analytic Technique
1. <b>Telehealth training for the project will be identified and ready to distribute to 100% of the participants by April 30, 2023. (PO)</b>	Excel Spreadsheet named Telehealth Training	Ensure all participants and classes have been identified to allow for a smooth project distribution process.	Nominal data
2. <b>80% of Telehealth nurses received educational interventions within 1 month of project start. (PO)</b>	Excel Spreadsheet named Intervention Deployment	Ensure all participants received the intervention	Nominal data
3. <b>50% of Telehealth nurses reported increased self-efficacy after project interventions by July 31, 2023. (CO)</b>	Quantitative Data Collection Instrument: General Self-Efficacy Score: 4-point Likert Scale. The GSES is a 10-item self-report scale designed for the general adult population, including adolescents twelve and older. It was developed in 1995 to assess optimistic self-belief and how those beliefs relate to an individual's coping ability). For each item, the respondent will rate the response on a 4-point Likert scale: 1: not true at all, 2: hardly true, 3: moderately	<ol style="list-style-type: none"> <li>1. To measure self-efficacy after the intervention.</li> <li>2. To compare the measures.</li> <li>3. Determine if the intervention was effective.</li> </ol>	Descriptive statistics: N, and percentage distribution will describe the data. A 4-point Likert scale format will be used. The data will be collected and



	true, and 4: exactly true. Score range from 10- 40, with higher scores indicating higher degrees of self-efficacy. Cronbach's alpha ranges from .76- .90, with a majority rating of .80		processed using Qualtrics pre and post- intervention.
4. <b>50 % of Telehealth nurses reported an increase in the ability to expand their caseloads after project interventions by July 31, 2023 (CO)</b>	Quantitative Data Collection Instrument: Likert Scale. For each item, the respondent will rate the response on a 4-point Likert scale: 1: not true at all, 2: hardly true, 3: moderately true, and 4: exactly true.	Determine if the intervention was effective	Descriptive statistics: N and percentage distribution comparing pre and post-intervention. The data will be collected and processed using Qualtrics post-intervention.
5. <b>50% of Telehealth nurses reported an increase in their technological skills after the intervention by July 31, 2023. (CO)</b>	Quantitative Data Collection Instrument: Likert Scale. For each item, the respondent will rate the response on a 4-point Likert scale: 1: not true at all, 2: hardly true, 3: moderately true, and 4: exactly true.	Determine if the intervention was effective	Descriptive statistics: N and percentage distribution comparing pre and post-intervention. The data will be collected and processed using Qualtrics post-intervention.
6. <b>50% of Telehealth nurses reported improved ability to use computer programs to</b>	Quantitative Data Collection Instrument: Likert Scale. For each item, the respondent will rate the response on a 4-point Likert scale: 1: not true at all, 2: hardly true, 3: moderately true, and 4: exactly true.	Determine if the intervention was effective.	Descriptive statistics: N and percentage distribution comparing pre and post-intervention. The data will be

<b>their full functionality after the intervention by July 31, 2023.(CO)</b>			collected and processed using Qualtrics post-intervention
<b>7. 70% of Telehealth nurses reported an increased ability to engage patients in telehealth programs after program interventions July 31, 2023. (CO)</b>	Quantitative Data Collection Instrument: Likert Scale. For each item, the respondent will rate the response on a 4-point Likert scale: 1: not true at all, 2: hardly true, 3: moderately true, and 4: exactly true.	Determine if the intervention was effective.	Descriptive statistics: N and percentage distribution comparing pre and post-intervention. The data will be collected and processed using Qualtrics post-intervention

**Appendix G**  
3-year Budget Plan

<b>Yearly Totals:</b>	<b>\$ 85,302.00</b>	<b>\$ 7,841.97</b>	<b>\$ 9,655.81</b>	
<b>Expense Category</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Rationale</b>
Personnel	\$ 82,635.00	\$ 6,607.10	\$ 8,203.16	Pilot yr 1 with 17 RNs, expanded unit wide to include 25 RNs as hire ratios increased. yr 2, hospital-wide yr 3=30 RNs. 1 Manager as superuser and supervisor in years 1-3. Nurse educator as SME year 1-3. Assumes DNP hours are only required for marketing/advertising in years 2-3, and average annual merit of 3 percent, plus cost of living increase based on consumer price index (CPI) of 8.3 percent per HR organizational data (Organization for Economic Co-operation and Development, 2022). Year 2: 25 RNs x 3 hours x \$50.85/hour = \$3,813.75; 1 nurse manager x 24 hours x \$66.78/hour= \$1602.72; 1 nurse educator x 20 hours x 50.85= \$1017.00; DNP 2 hours x \$86.81= 173.62 Total: 6,607.10. Year 3: 30 RNs x 3 hours x 56.60/hour= \$5,094.00; 1 nurse manager x 24 hours x \$74.33/hour= \$1783.92; 1 nurse educator x 20 hours x 56.60/hour= \$1132.00 Total: \$8009.92. DNP student x 2 hours x 96.62/hr= 193.24. Total: \$8203.16
Marketing/Advertising	\$ 600.00	\$ 200.00	\$ 200.00	Poster presentation will be manufactured once. Assume ongoing marketing needs for program support utilizing webspace, email layouts and copy development will reduce by two-thirds in years 2 and 3
Materials & Supplies	\$ 95.00	\$ 102.89	\$ 111.43	Assumes ongoing costs in years 2-3 and an 8.3% increase for inflation
IT	\$ 943.00	\$ 769.53	\$ 965.28	Includes data informatics time, Visme licensing fee for tips and tricks design packets, per-seat charges for Healthstream, Shared Teams and assumes 8.3% inflation: yr 2, Healthstream: 25 x 10.83= 270.75; Shared Teams: 25x13.54; Visme \$160.28 = 338.50 Total: \$769.53; yr 3: Healthstream 30x 11.73= 351.90; Shared: Teams: 30x 14.66= 439.80 Visme \$173.58 Total: Assume cost to upgrade software package with 8.3 % inflation

Equipment	\$ 1,029.00	\$ 162.45	\$ 175.94	Computer is a one-time expense and assumes cost to upgrade software package with 8.3 % inflation. Printer is a one-time expense.
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## Appendix H

### Expense Report

						<b>Grand Total</b>	<b>\$85,302.00</b>
<b>Expense Category</b>	<b>Expense Description</b>	<b>Explanation of Expense</b>	<b>Type of Cost (variable/fixed)</b>	<b>Volume Description</b>	<b>Volume (Total Units)</b>	<b>Cost per Unit</b>	<b>Total</b>
Personnel	Telehealth nurse wages	Telehealth nurses participating in education program. Hourly rate is an average based on organizational HR data. Time for pre and post intervention surveys	Variable	3 hrs X 17 RNs=51hrs	51	\$45.00	\$2,295.00
Personnel	Telehealth nurse manager wages	Interdepartmental superuser/Supervisor participating in direct supervision and real time support	Variable	24 hrs x 1 nurse manager	24	\$60.00	\$1,440.00
Personnel	Educator wages	1 educator that will be providing oversight to project as SME for pre/post surveys	Variable	20 hrs X 1 educator	20	\$45.00	\$900.00
Personnel	DNP student wages	DNP student developing project: stakeholder engagement, creation of onboarding template, creation of Tips and Tricks sheet, Kudos management, teams site management data distribution, caseload tracking (loop into current process), Poster creation and presentation, survey creation, survey distribution and survey management, assisting marketing with copy development, email layout and web design.	Variable	1,000 hours x 1 DNP	1000	\$78.00	\$78,000.00

Marketing/Advertising	Marketing for a poster presentation and web page development	Poster exhibit for project publication, email layouts, copy development, and web page design	Variable	1 Exhibit with web page design	1	\$600.00	\$600.00
Materials & Supplies	Paper	17 tips and tricks packets	Fixed	1 Ream of paper	1	\$15.00	\$15.00
Materials & Supplies	Printer Supplies	Toner	Variable	1 package of toner	1	\$80.00	\$80.00
IT	Data Informatics wages	Design weekly automated Healthstream reporting	Variable	2 hrs x 1 DI	2	\$40.00	\$80.00
IT	Vimse	Web design product: tips and tricks informatics packets	Fixed	Yearly subscription	1	\$148.00	\$148.00
IT	Healthstream	Per seat usage for Healthstream classes based on IT based organizational data	Variable	17 students x 2 classes	34	\$10.00	\$340.00
IT	Shared Teams	Shared teams site: stakeholders and participants cost per seat based on IT average	Variable	30 members	30	\$12.50	\$375.00
Equipment	Computer	Laptop for project management	Fixed	1 laptop	1	\$699.00	\$699.00
Equipment	Software bundle	Office 365 package	Fixed	1 package	1	\$150.00	\$150.00
Equipment	Printer	Desktop Printer	Fixed	1 printer	1	\$180.00	\$180.00

**Appendix I**  
Statement of Operations

<b>Operating Income (All in Kind)</b>		<b>\$ -</b>
	<b>Revenue Total</b>	<b>\$ 85,302.00</b>
<b>Source</b>	<b>Description</b>	<b>Amount</b>
This is a subsidized project with no associated revenue. In-kind contributions by the sponsoring organization and DNP student.	In-kind wages for all personnel, including the DNP student	\$ 82,635.00
	In-kind materials & supplies	\$ 95.00
	In-kind equipment	\$ 1,029.00
	In-kind IT	\$ 943.00
	In-kind marketing/advertising	\$ 600.00
	<b>Expenses Total</b>	<b>\$ 85,302.00</b>
<b>Expenses</b>	<b>Description</b>	<b>Amount</b>
Personnel	Project labor for project development and supervision	\$ 82,635.00
Marketing/Advertising	Project labor for project development and supervision	\$ 600.00
Materials & Supplies	Paper and toner	\$ 95.00
IT	Project development, seat fees, and licensure	\$ 943.00
Equipment	Computer, software and printer	\$ 1,029.00

**Appendix J**  
IRB Letter of Determination



March 16, 2023

Serena Young  
Saint Alphonsus Health System  
Employee Health Services  
1055 N. Curtis Road  
Boise, ID 83706

Re: Optimizing Digital Proficiency to Improve Perceived Self-Efficacy in Telehealth Nurses

Dear Serena,

This letter is to acknowledge that the Institutional Review Board (IRB) at Saint Alphonsus Regional Medical Center has reviewed the minimal risk protocol noted above and has determined that it meets the criteria for exemption as outlined in 45 CFR 46.104 (d)(2). No further oversight by the IRB is necessary.

When the study is complete, a permanent closure form should be submitted. This form is available at <http://www.saintalphonsus.org/forms-and-resources>

As a reminder, no changes may be made to the above protocol or consent without first submitting the changes to the IRB for approval, and any internal adverse events or unanticipated problems must also be promptly reported.

Should you have any questions, please feel free to contact SARMC Research Integrity at (208) 367-8897.

Respectfully,

A handwritten signature in black ink, appearing to read "Paige Nesbitt".

Paige Nesbitt  
Research Administrator  
Saint Alphonsus Health System



**Appendix K**  
Pre-Survey Questionnaire

# Pretest: Optimizing Digital Proficiency to Improve Perceived Self-Efficacy in Telehealth Nurses

---

Start of Block: Default Question Block

Q1 What are the last 4 digits of your cell phone number? This will be your identifier for the project.

Click to write Choice 1 (1) \_\_\_\_\_

---

Q2 What is the highest degree or level of school you have completed?

- ☐ Associates Degree (1)
  - ☐ Bachelor's Degree (2)
  - ☐ Master's Degree (3)
  - ☐ Doctorate Degree (4)
-

Q3 How long have you been employed in your current role?

- ☐ 0-2 years (1)
  - ☐ 2-5 years (2)
  - ☐ 5-10 years (3)
  - ☐ Greater than 10 years (4)
- 

Q4 What is your age?

- ☐ 18- 24 (1)
  - ☐ 25-35 (2)
  - ☐ 36-45 (3)
  - ☐ 46-55 (4)
  - ☐ 56-65 (5)
  - ☐ 65-older (6)
-

## Q5 Question 5

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can always manage to solve difficult problems if I try hard enough. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q6 Question 6

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
If someone opposes me, I can find the means and ways to get what I want. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q7 Question 7

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
It is easy for me to stick to my aims and accomplish my goals. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q8 Question 8

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I am confident that I could deal efficiently with unexpected events. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q9 Question 9

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
Thanks to my resourcefulness, I know how to handle unforeseen situations. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q10 Question 10

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can solve most problems if I invest the necessary effort. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q11 Question 11

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can remain calm when facing difficulties because I can rely on my coping abilities. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

## Q12 Question 12

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
When I am confronted with a problem, I can usually find several solutions. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q13 Question 13

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
If I am in trouble, I can usually think of a solution. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Question 14

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can usually handle whatever comes my way. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix L  
Post Survey Questionnaire

Post-test: Optimizing Digital Proficiency to Improve Perceived Self-Efficacy in Telehealth Nurses

Start of Block: Default Question Block

Q1 What are the last 4 digits of your cell phone number? This will be your identifier for the project.

Click to write Choice 1 (1) \_\_\_\_\_

Q2 Question 2

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can always manage to solve difficult problems if I try hard enough. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q3 Question 3

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
If someone opposes me, I can find the means and ways to get what I want. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4 Question 4

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
It is easy for me to stick to my aims and accomplish my goals. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Q5 Question 5

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I am confident that I could deal efficiently with unexpected events. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Q6 Question 6

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
Thanks to my resourcefulness, I know how to handle unforeseen situations. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Q7 Question 7

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can solve most problems if I invest the necessary effort. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Q8 Question 8

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can remain calm when facing difficulties because I can rely on my coping abilities. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Q9 Question 9

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
When I am confronted with a problem, I can usually find several solutions. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q10 Question 10

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
If I am in trouble, I can usually think of a solution. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q11 Question 11

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can usually handle whatever comes my way. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q 12 Question 12

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
My ability to use technology has improved due to the education I was given for this project (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q13 Question 13

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can use the full functionality of my computer after the project. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q14 Question 14

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I can engage more patients in services after the project. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q15 Question 15

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I am able to expand my caseloads after the project (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Q16 Question 16

	Not at all true (1)	Hardly true (2)	Moderately true (3)	Exactly true (4)
I am able to engage more patients in care management services after the intervention. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q17 Did you find the educational videos helpful?

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Q18 Is there any educational content you like to see added?

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