

ORIGINAL RESEARCH

Standardizing Competencies and Enhancing Professionalism Through a Telepresenter Certificate Program

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Abstract

Background: Systematic reviews reveal that education and training to ensure high-quality telehealth delivery are lacking.

Objective: Recognizing an unmet need for standardized training for telepresenting healthcare professionals, the U.S. Department of Veterans Affairs Office of Connected Care (VA OCC) built on its prior telehealth experience to create a Telepresenter Certificate Program (TCP) in partnership with the University of Florida College of Nursing (UF CON). The program's curriculum, the educational methods used, and learners' responses to a summative survey that evaluated the TCP's impact are described here.

Methods: The curriculum encompasses two courses. The first introduces current knowledge regarding digital health, including the role of clinical informatics, electronic health records, patient-generated health data, and trends in data use in healthcare. The second helps learners understand required telehealth competencies through patient case scenarios and covers topics such as how to telepresent virtual medical exams and apply these skills in practice.

Results: Among four TCP cohorts, 909 learners completed the programs, with 87% agreeing or strongly agreeing that “they will be able to apply the knowledge and skills learned to effectively assist telehealth providers in delivering patient care using telehealth technology.” On average, 94% of TCP completers were satisfied with the program.

Discussion: The VA OCC's partnership with UF CON successfully created a novel curriculum to standardize competencies and enhance professionalism for the telepresenter role through the TCP. Learners positively endorsed their acquisition of skills and their satisfaction with the program. The TCP offers a viable model for other healthcare consortiums to standardize competencies and enhance professionalism for telepresenters, resulting in improved telehealth quality and increased healthcare access.

Plain Language Summary

Telehealth can increase healthcare options for people who live far from medical centers, cannot travel for health or transportation reasons, or have physical or mental health conditions that make medical settings uncomfortable. However, there are not enough well-trained people—called telepresenters—who can assist the patient and clinician during video healthcare visits. The U.S. Department of Veterans Affairs Office of Connected Care partnered with the University of Florida College of Nursing to create the Telepresenter Certificate Program, an educational initiative to train healthcare professionals in telepresenting. Learners gained knowledge about digital healthcare and acquired skills in assisting patients during video healthcare visits. After-course surveys revealed that program participants felt confident in their telepresenting skills and were satisfied with their learning.

This work can be a model for other healthcare systems that want to offer similar training, thus increasing the number of skilled telehealth professionals. Having more standardized programs like the Telepresenter Certificate Program can improve telehealth-care quality and access across the industry.

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Through its Veterans Health Administration, the U.S. Department of Veterans Affairs (VA) is the “largest integrated healthcare system in the United States.”¹ The VA serves over 8.6 million Veterans annually, of whom nearly half are age 65 and older.² In fiscal 2023, VA telehealth services included more than 11.6 million episodes of care for 2.4 million Veterans—of which 9.4 million were real time, off-site telehealth encounters conducted through video.³

Although the infrastructure for telehealth has been in place for decades, wide-scale use of it lagged until the COVID-19 pandemic accelerated telehealth demand, forcing rapid adoption nationally and worldwide.^{4,5} The VA was among the earliest adopters of telehealth in the United States, employing telepresenter—medical assistants who facilitate patient–clinician video healthcare visits on the patient’s side—as early as 1997.⁶

Telepresenter may be utilized in all clinical settings, regardless of whether these settings are urban, suburban, or rural. However, telepresenter are especially advantageous to patients in rural settings, where both primary and specialty healthcare are in short supply. Yet, in a comprehensive 2018 global review, researchers identified that the most significant barrier to embracing telehealth worldwide was having technically challenged staff.⁷ Thus, telehealth had a “supply-side” deficit—a lack of trained telehealth personnel to help patients access care and help providers deliver that care.⁸ From the perspective of time and with lessons learned from a global pandemic, international stakeholders now strongly endorse staff training and future professional associations as *central* to sustaining the benefits gained from the wide-scale surge in telehealth.⁹

Because of their depth of experience in telehealth, U.S. Department of Veterans Affairs Office of Connected Care (VA OCC) leaders predicted this lack of trained telepresenter who provide support during video-to-clinic visits. Before the COVID-19 pandemic, VA OCC was already proposing solutions to fill the gap and define the role of the telepresenter. It understood early on that competent telepresenter can raise the quality of virtual care because of their essential role in telehealth visits.

The Role of the Telepresenter

Telepresenter use telehealth equipment to present patients to remote providers during physical assessments.

As appropriate within each telepresenter’s scope of practice, this assistance includes operating and troubleshooting the technology used to present the patient, functioning as the provider’s eyes, ears, and hands to facilitate the exam and assessment, enhancing communication and fostering patient advocacy, and ensuring patient safety and privacy.

Telepresenter are most commonly registered nurses, licensed practical nurses, or patient care technicians. However, their backgrounds vary across allied health disciplines, and they are assigned depending on the skills needed for the telehealth encounter.

The COVID-19 Pandemic’s Acceleration of Global Telehealth Readiness

During the COVID-19 pandemic, the VA’s well-honed videoconferencing infrastructure proved critical to providing Veterans with safe, accessible healthcare. The infrastructure was ready to pair with user-friendly remote patient monitoring for Veterans infected with COVID-19.¹⁰ With the onset pandemic, the need and demand for telehealth skyrocketed globally to unprecedented levels. Because of their existing capabilities, VA Medical Centers were uniquely prepared to “turn their battleship on a dime” and immediately start conducting increased outpatient care through telehealth.

Metrics Elucidate This Rapid Response

Face-to-face healthcare visits with Veterans dropped significantly, from 81% in February 2020 to 23% in May 2020.¹¹ Trends that were tracked weekly during the early months of the pandemic also revealed upticks in care provided through telehealth. Figure 1¹² shows that in late April 2020, the number of home-based video visits was far outpacing those for early March 2020 in three key healthcare areas: mental healthcare, primary care, and all other specialties, including rehabilitation.

During the COVID-19 pandemic, Veterans were more likely to use telehealth compared with their non-Veteran peers, by an odds ratio of 3.25 (95% confidence interval [CI]: 2.20–4.81).¹³ Although the COVID-19 pandemic public health crisis is “in the rear-view mirror,” Veteran and public endorsement of telehealth as an integral part of American healthcare remains.^{14–16} However, immediately prior to the pandemic, the VA was already using well-trained telepresenter to support high-quality, complex video telehealth outpatient clinic visits.

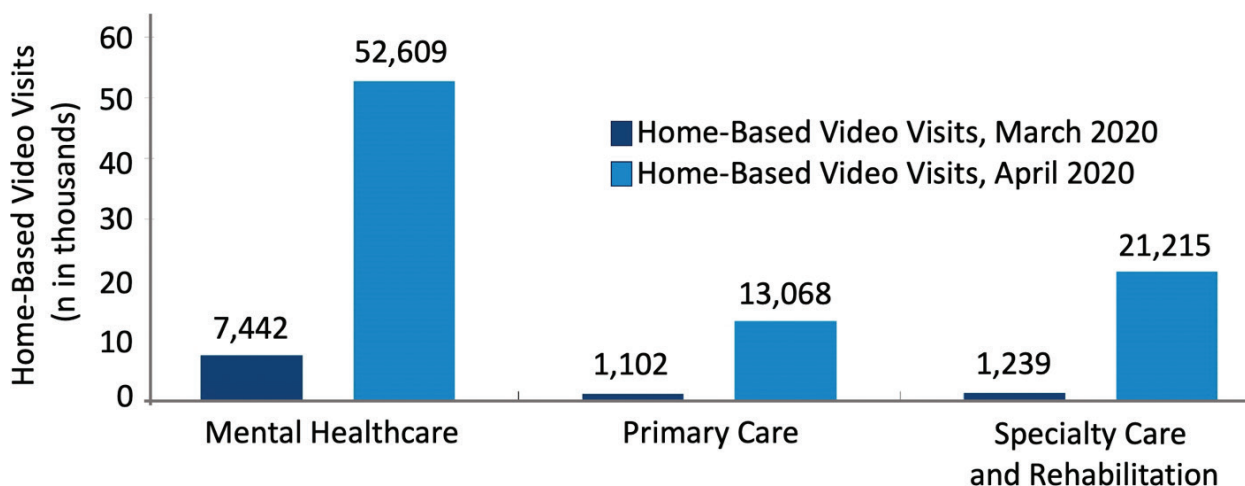


Fig. 1. Comparing the number of VA home-based video visits in early March 2020 to those in the last week of April 2020. Source: Adapted from Heyworth et al., 2020.¹² VA: Veteran Affairs.

In 2019, employing best practices for change management, VA OCC proposed creating the Telepresenter Certificate Program (TCP) by joining forces with the nationally recognized University of Florida College of Nursing (UF CON) to offer formal telehealth training to qualified students from VA, UF CON, and a wider community of diverse learner-stakeholders. VA OCC and UF CON agreed that there was an unmet need improving standards and competencies in telehealth to standardize knowledge and skills training for the telepresenter role since such standardization did not exist in the healthcare industry. Moreover, the looming pandemic validated the need for the TCP and accelerated its development.

The program resulting from this academic partnership was a significant achievement in empowering proficiency-directed education. The TCP not only provided learners with valuable information on the principles and practice of telepresenting but also helped establish telepresenters as a recognized professional group in the healthcare arena.

In this article, we describe VA OCC's intentional change management process for telehealth delivery related to the TCP, including the administration's recruitment strategies, program logistics, and curriculum rationale. We also consider VA OCC's data-driven re-engineering decisions for addressing challenges and examine the qualitative outcomes of this novel program.

Methods

The learners in our TCP pilot were future and present healthcare professionals being introduced to a new curriculum. They responded to anonymous learner surveys about their perception of the value and impact of this curriculum on their learning, without providing any personal identifiable information. Therefore, the pilot/

implementation team perceived no risk to participants and did not invoke the right to an Institutional Review Board review of the planned educational activity.

Improving Standards and Competencies in Telehealth

Identifying how critical the telepresenter role is to the delivery of virtual care, the VA OCC, through its Quality, Training, and Knowledge Management (QTKM) teams, committed to partnering with UF CON to (1) increase the number of qualified telepresenters and (2) standardize the telepresenter role for both VA and non-VA telepresenters through the development of the TCP. Building on their prior 2008 Telehealth Services Certificate course collaboration, VA OCC and UF CON met to determine a vision for this partnership that would make the most of both institution's clinical and academic excellence.

Spikes in Care Through Telehealth as Motivation to Acquire Skills

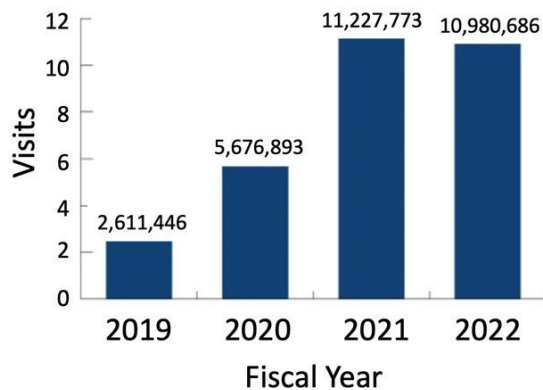
The COVID-19 pandemic coincided with the beginning of VA OCC and UF CON's TCP—elevating the TCP's relevancy and appeal to motivated learners. The graphs in Figure 2 compare the rise in telehealth visits at the VA with the increase in VA healthcare professionals' completion of all VA telehealth courses nationally during the COVID-19 era. These data show how U.S. healthcare professionals demonstrated increased interest and engagement in telehealth coursework as the pandemic advanced the national need for care through telehealth. The decrease in the number of completions over time indicated that learners were meeting their role requirements for courses.

Future-Oriented Program Development

The VA OCC anticipated that establishing an academic partnership with UF CON to develop the

Telehealth Visits

Combined number of all VA telehealth modalities



Telehealth Course Completions

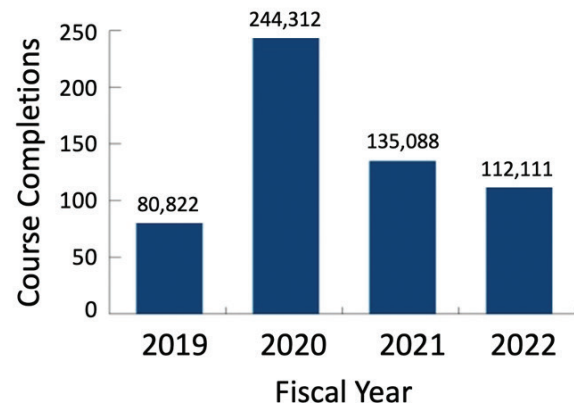


Fig. 2. VA telehealth visits and VA course completions during the COVID-19 pandemic. Source: Data from VA OCC's Connected Care Academy. VA: Veteran Affairs; VA OCC: Department of Veterans Affairs Office of Connected Care.

TCP would raise the visibility of the telepresenter's role, increase the program's appeal as a career enhancement opportunity within VA and nationally, and ease efforts toward future accreditation of a certification program.

A memorandum of understanding established the partnership. The agreement focused on VA OCC and UF CON's shared goals for the TCP, including accessibility, user-friendliness, effectiveness, impact, and data-tracking capability. Instead of going through the longer process of making the program one of *certification*, which mandates official third-party assessment and has ongoing requirements for credentialing, the VA OCC and UF CON consortium opted to create a specialized educational certificate program that offers learners an opportunity to develop or strengthen career skills related to being a telepresenter.

The VA OCC and UF CON hoped that this more facile approach would stimulate course enrollment and increase the number of qualified telepresenters while reducing time and cost barriers for students entering the profession. The academic partners agreed to make the course no-cost, virtual, and open to VA, UF CON, and engaged government and medical stakeholders to encourage wider participation. Marketing efforts targeted learners at the VA who were most likely to enroll in the program—nurses and staff already engaged in telehealth—UF CON students and motivated participants from non-VA entities like the U.S. Department of Defense, Indian Health Service, and American College of Physicians. The program setup coincided with UF CON's semester-based education system, making it easier for nursing students to build the program into their course load.

Merged Competencies: Creating the TCP

Bringing their academic and clinical skills to the TCP's development process, the VA OCC and UF CON collaborators designed the program to encompass two distinct courses that would appeal to a broad swath of healthcare professionals, educators, administrators, policymakers, and students, including those without previous knowledge in the field of telehealth.

A healthcare professional who receives training on healthcare technology and its implementation builds a foundation for personal innovation in all aspects of healthcare, including digital health. Thus, one of the most critical steps in the TCP development process was crafting a curriculum interweaving clinical informatics and digital health, starting with comprehensive and standardized training for the telepresenter role. With this in mind, the program creators developed two courses that were required elements of the TCP curriculum.

Course I – Digital Health: Data-Driven Solutions for Transforming the Future of Healthcare

This course was designed as an introduction to clinical informatics and other fields at the intersection of healthcare and information technology. It reviewed core elements and principles in the use of electronic data to improve individual and population health. Key curricula included the Triple Aim framework for health system optimization and the role of electronic health records, patient-generated health data, and trends in the use of data in healthcare. Additionally, the course presented learners with an overview of technology, healthcare, and clinical informatics in the following sectors: the mobile economy, mobile health, and mobile health apps.

The curriculum clarified the role of mobile health in providing digital healthcare support, delivery, and intervention through smartphones, tablets, and wearable devices. It also explained how mobile and wireless technology can support achieving health objectives. Finally, the TCP presented best practices in providing mobile health, including continuing to participate in virtual care training, helping colleagues by sharing learning from formal training, and learning how to assess patients' experiences and comfort with and trust in virtual care tools.

Course II—Introduction to the Telepresenter Role

This course was designed to help learners understand the competencies needed to perform successfully in the telepresenter role. The course presented essential information on telepresenting and the use of telehealth and telehealth technologies. It incorporated VA-based patient case scenarios, demonstrating how to telepresent virtual medical exams and apply knowledge and skills in practice.

Learning Platform Selection

The VA OCC and UF CON selected Blackboard, a widely used online learning application, as the portal for delivering the TCP. Specifically, the TCP was hosted on Connected Care Academy—VA OCC's Blackboard-based knowledge and content management platform. This decision had several benefits for TCP developers and learners: (1) VA course developers and learners were already using Connected Care Academy as their educational platform for telehealth and would not have to learn a new system and (2) UF CON students were already familiar with Blackboard and could easily gain secure access to Connected Care Academy. In addition, (3) through Connected Care Academy, learners had access to communities and other resources for telehealth specialties created by the VA for both VA and Department of Defense staff. Finally, (4) Connected Care Academy enabled VA OCC and UF CON to track user-specific metrics, including course completions.

Promotion and Recruitment

Considering the TCP's broad reach throughout the healthcare community, the VA OCC and UF CON consortium asked QTKM to promote the program (Table 1) to not only VA staff and entities but also several external audiences, including the American College of Physicians, Department of Defense, Indian Health Service, Southeastern Telehealth Resource Center, and State Veterans Homes.

Keeping Learners Engaged and Motivated

Committed to maintaining and fostering learning engagement, VA OCC and UF CON sent emails to students as reminders and motivators at the following times (Figure 3).

To help track the effectiveness of these outreach efforts, VA OCC compiled monthly updates of key performance indicators. These included subscribers to the email distribution list for program updates, click-throughs from outreach materials to Connected Care Academy's TCP welcome page, views of the promotional video on YouTube, and enrollments in the TCP community on Connected Care Academy.

Using Principles of Instructional Design to Combat 'Zoom Fatigue'

Although the TCP was always planned as a virtual course, the public's vast migration to virtual interactions during

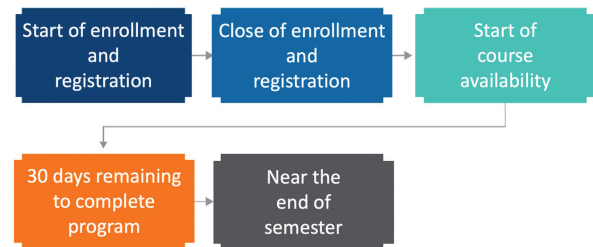


Fig. 3. Reminder and motivator emails for VA OCC and UF CON learners in the TCP. TCP: Telepresenter Certificate Program; UF CON: University of Florida College of Nursing; VA OCC: Veterans Affairs Office of Connected Care.

Table 1. A four-stage outreach approach enabled Quality, Training, and Knowledge Management (QTKM) to raise awareness about QTKM

Stage	Activity
Stage 1 (soft launch)	Created a landing page with program and enrollment information, held frequent meetings with key stakeholders, and sent emails to leadership that included a predrafted email for them to share with their staff.
Stage 2 (full launch)	Sent targeted emails to introduce the program to VA staff, external government audiences, and UF CON students; hosted informational virtual events; and provided fact sheets and video recordings of the events to these same audiences.
Stage 3	Sent follow-up emails to all audiences.
Stage 4	Sent emails to enrollees and follow-up emails to target audience members who still had not enrolled in the TCP and then analyzed email metrics, such as link clicks, to optimize outreach strategies based on the emails that were most effective.

QTKM: Quality, Training, and Knowledge Management; TCP: Telepresenter Certificate Program; UF CON: University of Florida College of Nursing; VA: Veterans Affairs.

the COVID-19 pandemic presented both opportunities and challenges. The effects of the pandemic influenced how TCP developers approached the delivery of instruction. They intentionally considered ways to increase learners' engagement and maintain their motivation to finish the program. The academic partners mitigated the formidable challenge of "Zoom fatigue"—which can detract from a sense of educational and mental well-being¹⁷—by engaging the evidence-based principles and learning theories of instructional design. The specific tactics used in the TCP to enhance learner engagement included case studies and scenarios, knowledge checks, and concise writing.

How humans learn has been an intense source of research, investigation, and practice since the early 20th century, creating a new discipline of "instructional design." In the 1960s, a harsh lens was applied to the effectiveness of "programmed" learning in the American educational system. Modern-era instructional designers conceived that pragmatically applying cognitive theories could enhance learning.¹⁸ Ipek and Ziatdinov¹⁹ describe how leading models share essential steps in developing educational programs.²⁰⁻²² These steps include needs analysis, design strategy, course development, and real-time learner evaluation of garnered knowledge, pragmatic aspects of implementation and maintenance, and summarily evaluating the course's effectiveness for "diffusion and dissemination."^{19,22}

When constructing the TCP courses, VA OCC and UF CON developers based their designs on the following instructional design features: scenarios and case studies to increase engagement, knowledge checks to highlight key points and reinforce learning goals, and concise writing and removal of extraneous content so that the courses did not give learners more information than they could process.

An Eye on the Future of Telepresenter Professionalism

The VA OCC and UF CON endeavored to create a good product that could scaffold the way to an even higher level of learner achievement for future learners—certification. While the current TCP provided learners with a certificate to validate their learning, the TCP's design incorporated educational content, data analytics, and accumulated metrics. This was done with an eye toward achieving a future National Commission for Certifying Agencies (NCCA) certification of the TCP—further endorsing the professionalism of the telepresenter role. To prepare for a future application that would be required for accreditation, VA OCC tracked certificate program participant data, including overall program evaluations, completions, and unsuccessful completion attempts. These critical metrics helped demonstrate student engagement with the TCP and the program's intrinsic value.

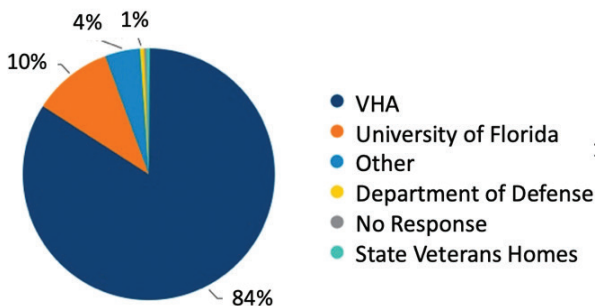
Results

Impact

The TCP included four cohorts for a total of 3,159 course enrollees and 909 program completions. These results surpassed the VA's target of 500 program completions, which is the minimum number required for certification by the NCCA.

The TCP also aimed to attract a cross-section of professionals and people with various affiliations to complete the program. However, most program completers came from the VA (Figure 4). The VA OCC and UF CON shared mutual goals of standardizing knowledge and skills for the telepresenter role. Approximately 16% of enrollees who were not affiliated with VA came from UF CON, the Department of Defense, State Veterans Homes, or another entity (or chose not to respond). The VA participation included professionals from a range of specialties and all 18 of its Veterans Integrated Service

Affiliations of Program Completers



Professions of Program Completers

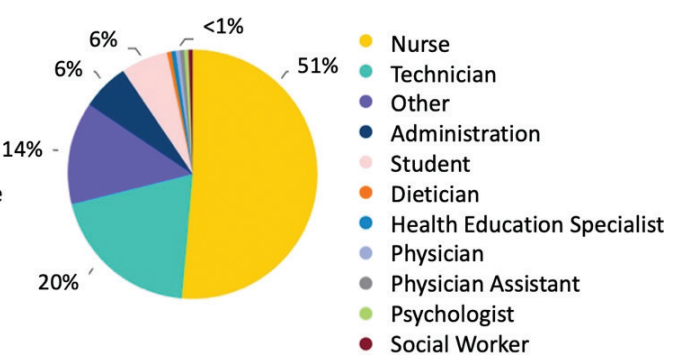


Fig. 4. Demographics of Telepresenter Certificate Program Completers. Source: Data from VA OCC (U.S. Department of Veterans Affairs Office of Connected Care).

Networks, meaning the benefits of the training flowed to Veterans across the country.

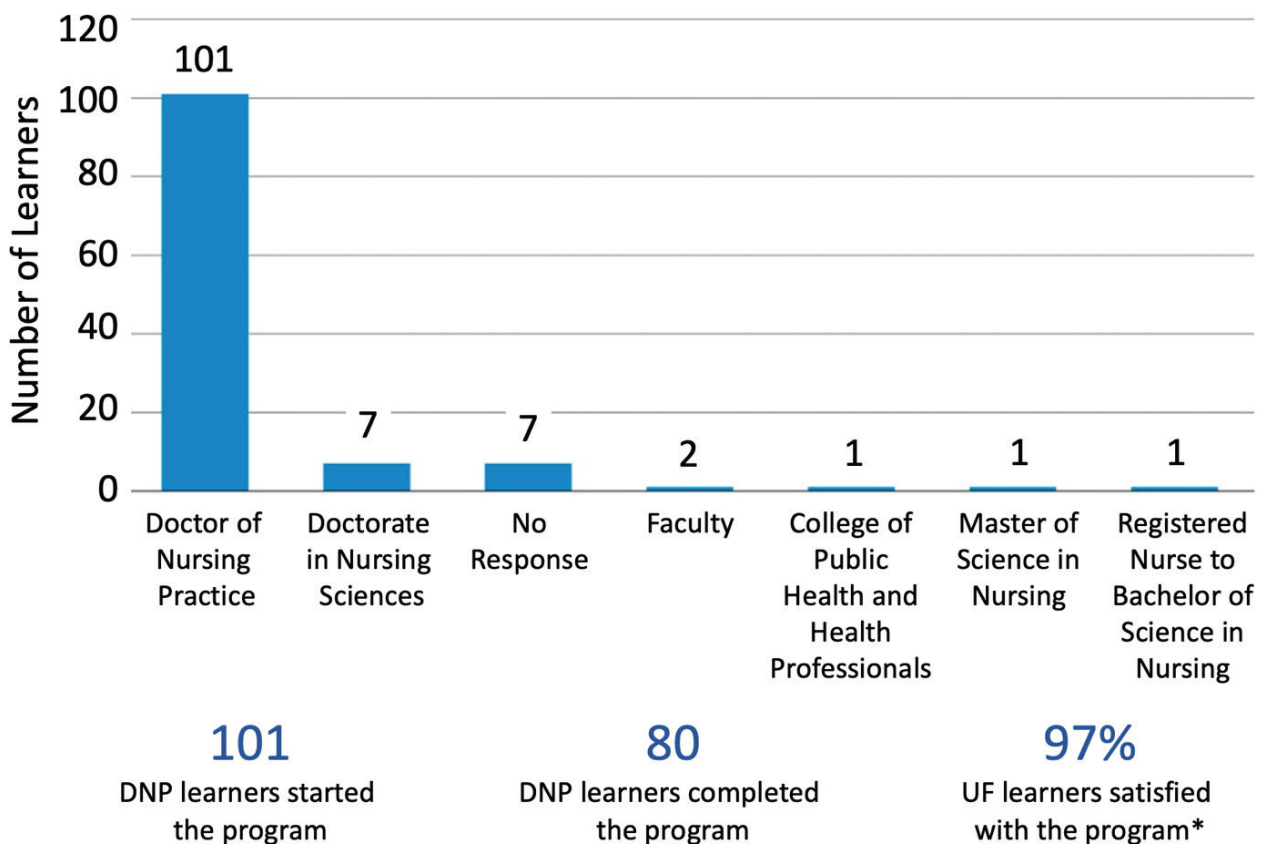
Enrollees were grouped into four cohorts delineated by enrollment date, spanning from fall 2021 (Cohort I) to fall 2022 (Cohort IV). In Cohort IV, 48% of learners who started the program completed the program, compared with 37% in Cohort I. The average program completion rate for all cohorts for learners who began and actively engaged in the program was 39%. These results suggest that changes made to the TCP as it progressed enhanced enrollees' investment and ease in completing the program. Additionally, by Cohort IV, a higher percentage of learners (12%) were non-VA learners, suggesting that outreach efforts to audiences external to VA improved alongside the program itself.

When analyzing the TCP's completion and satisfaction rates and learner-endorsed value, the program's impact becomes even more apparent (Figure 5). Overall, 29% of learners who enrolled in the course went on to complete the program. However, given that the course did not offer learners credit hours or certification, we consider full program completion by roughly 1 in 3 learners to be highly successful—exceeding our expectations.

In addition, the overall program completion rates were notably higher among learners who went beyond just passively enrolling in the first course (requiring a few clicks) to actually filling out the initial registration form or completing the first course (39% and 78%, respectively). Although a specific completion rate goal was not set, the TCPs' goal of graduating 500 learners in the first year was achieved nearly twice over (909 learners total). On average, 94% of all program completers were satisfied with the program overall. Among UF CON learners, who were primarily doctoral students, the completion rate was 77%. The satisfaction rate for this group was 97% (Figure 5).

Figure 6 shows the end-of-course evaluation questions asked and the percentage of learner agreement with each question across all four cohorts. Overall, the responses were highly positive. An over-time analysis failed to show any salient trends. Responses to these questions, as well as the open-ended feedback solicited from learners, have been used to continually improve the program.

Program outcomes were also assessed using Kirkpatrick measurements, a globally recognized training



*Overall program satisfaction was not assessed in Cohort 1

Fig. 5. UF Learners Across All Cohorts: Demographics and Satisfaction Rates. Source: Data from VA OCC (U.S. Department of Veterans Affairs Office of Connected Care). DNP: Doctor of Nursing Practice; UF: University of Florida.

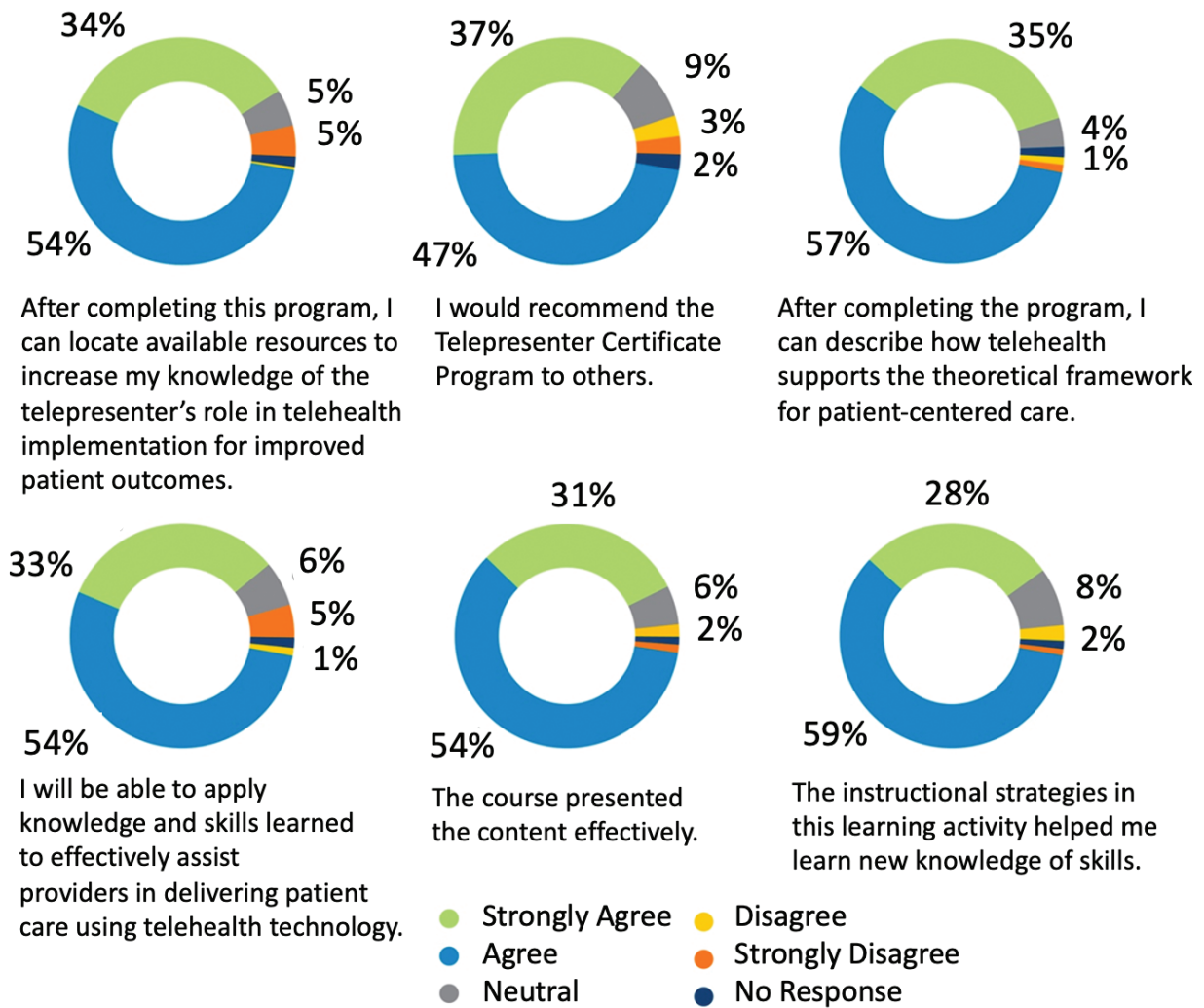


Fig. 6. Overall program feedback. Data from VA OCC (U.S. Department of Veterans Affairs Office of Connected Care)

evaluation model.²³ As shown in Figure 7, these measurements demonstrated that TCP developers' application of instructional design principles was well received by learners. The program garnered ratings of "very highly" on questions about satisfaction and value. Moreover, 87% of learners reported that they obtained skills to help them be effective telepresenter.

Lessons Learned

The VA OCC and UF CON learned several lessons to help inform future academic partnerships.

- Creating a strategic and comprehensive approach to outreach contributed to the program's success.
- A flexible program structure was essential to allow communication tactics to change and grow over time as program insights and trends in audience behaviors emerged.

- Collecting learner feedback highlighted opportunities to improve the program, including shortening learners' time commitment and removing barriers to completion, such as the high number of final exam questions.
- Storing resources in a central location made them readily accessible to various audience groups, thus increasing the likelihood of those resources being consulted.
- Incorporating evidence-based instructional design and adult learning principles into the training content from the start of the development process led to the creation of a better product.
- An accredited program provides additional value and could increase participation numbers and course completion rates.

Discussion

In an extensive, systematic review of 48 global studies, researchers found that most studies detailing strategies to improve telehealth delivery focused only on identifying

Learner Satisfaction

94% of learners were **satisfied** with the program overall.

87% of learners said they have the skills to be an **effective telepresenter**.

90% of learners said content was presented **effectively** telepresenter.

83% of learners would **recommend** the program to others

Cohort	Course		Overall
	I	II	
Cohort I	94%	94%	94%
Cohort II	96%	96%	96%
Cohort III	95%	95%	92%
Cohort IV	94%	93%	94%
Average	95%	95%	94%

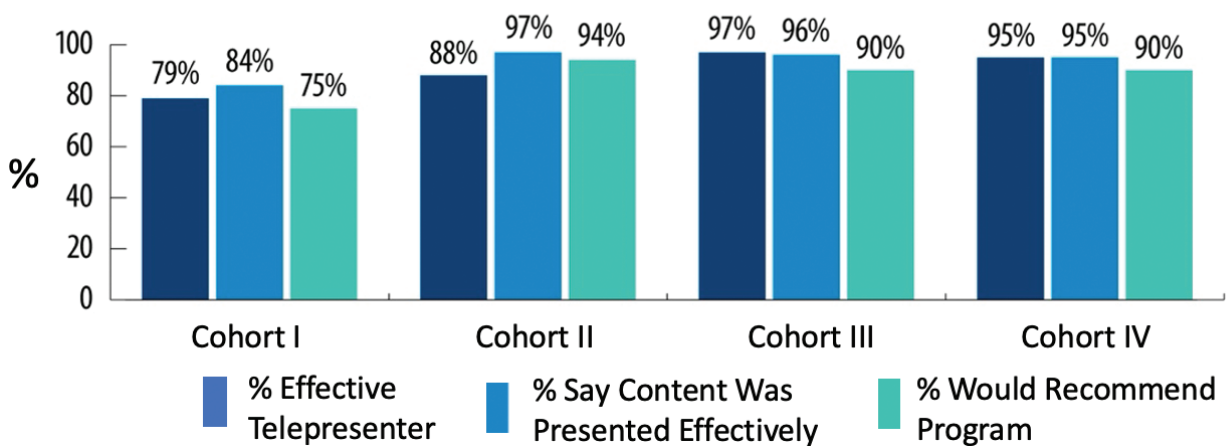


Fig. 7. Telepresenter Certificate Program feedback. Source: Data from VA OCC (U.S. Department of Veterans Affairs Office of Connected Care)

barriers rather than implementing change to improve access to telehealth. In Kho and colleagues’ comprehensive review of change management practices implemented in telehealth, 34 studies identified “providing training and education in how to use equipment, troubleshoot, and how to conduct consultations through the technology” as a major target for improvement in providing telehealth.⁸

A recent assessment of telehealth competencies across a broad spectrum of allied health professionals concluded that education and training are lacking to ensure the delivery of high-quality care through telehealth.²⁴ In a qualitative study of Australian telehealth staff caring for aging patients in a retirement facility, researchers identified an urgent need to “develop accessible training” for staff to foster and maintain telehealth skills acquired during the COVID-19 pandemic. Based on staff surveys, researchers

deemed that training is urgently required and should be multipronged, addressing technical skills, clinical guidelines, policy and legal considerations, and best practices.²⁵

This publication presents VA OCC and UF CON’s collaborative process to create the TCP, a virtual learning curriculum intended to standardize competencies and increase professionalism for telepresenters, and address the unmet needs identified in the literature.

The VA OCC and UF CON’s academic partnership to develop the TCP was a change management strategy in response to VA OCC’s observations that a lack of telepresenters presented a future barrier to the implementation of telehealth within VA and nationally. Without telepresenters—integral members of telehealthcare teams—remote providers would not have the support they need to gather critical information during video telehealth

clinic visits. By creating the TCP, VA OCC, and UF CON have augmented learners' engagement with digital health, telehealth, and telepresenting and have facilitated change to promote the growth and delivery of virtual care nationwide.

Thus, the VA OCC and UF CON collaboration offers a strong model for coursework design and implementation in telepresenting. In conceptualizing the TCP, VA OCC directly addressed a need for well-qualified telepresenters. Rather than simply identifying the barriers to widespread telehealth adoption, VA OCC strategized a means of implementing change to facilitate growth in the numbers and professionalism of telepresenters—simultaneously enhancing career and academic opportunities for learners.

TCP Meets an Unmet Need

Despite the currency of medical informatics, medical education has not caught up to the unmet need for curricula.²⁶ Recognizing the relevancy of clinical informatics in telepresenter education, the TCP incorporated an introduction to clinical informatics and the principles of the Triple Aim into its curriculum, delineating Berwick and colleagues' three goals for improved healthcare,²⁷ improve the patient experience, improve healthcare access, and reduce healthcare costs.

The TCP developers sought to present this basis of understanding of the Triple Aim and its relationship to healthcare improvement. As with all topics in the program, learners could then build on this foundational knowledge through further education to comprehend how to apply and grow this working theory nationally and globally.²⁸ With these introductory concepts, VA OCC and UF CON's TCP set the stage for future telehealth education, including a Telepresenter Certification Program.

Educational Strategies Open to Process Re-Engineering

The VA OCC and UF CON developers re-engineered the content and content delivery processes throughout the TCP courses and the four cohorts of learners.^{8,29} Instructional design best practices were applied from the start of the TCP. For example, in the course content for Cohort I, the TCP developers minimized the on-screen text and used scenario-based knowledge checks. They then followed instructional design principles to implement any necessary changes after each cohort's surveys and data analytics, elucidating areas of struggle for learners.

This sequential process incorporated participant feedback gathered through surveys and addressed “parking lot” issues—that is, a bank of topics VA OCC and UF CON had noted for improvement in subsequent iterations of the TCP. The process also continued to leverage an interdisciplinary team of subject matter experts and apply best practices.

Improvements between cohorts included the following:

- Adjusted the length of training, breaking modules into smaller pieces to help participants better-fit learning into their busy schedules.
- Reduced the length of the post-test required for course credit from 100 randomized questions to 50 in response to learner feedback.
- Evaluated the efficacy of the questions when metrics revealed potential learner confusion.
- Applying Mayer's principles for e-learning to education, the curriculum endeavored to reduce the cognitive load of education.³⁰
- Added a resource guide that learners could easily access on Connected Care Academy.

Future Improvements

Some lessons learned from the TCP cohorts could not be applied before the program's end. Still, they will inform future development of similar courses and the application of instructional design principles to VA telehealth training. Examples include reanalyzing the length and structure of learning modules to improve participants' ability to complete courses and retain knowledge, incorporating techniques that build engaging scenario-based learnings, and clarifying for learners which readings are required (to be tested on) and which are suggested (for optional professional development only).

In response to the open-ended survey question, “Please tell us how we could improve the Telepresenter Certificate Program to make the learning experience more effective,” some respondents answered that they would have liked more time to complete the program amid their other job duties. These responses underscore the need for flexibility when offering a training program that involves adult learners from diverse working and academic environments.

Regarding future plans, the TCP is currently being re-launched for VA learners in fall 2024. Data from this launch will augment the TCP's potential to become accredited by the NCCA, which is key to creating a full-fledged certification program.

In developing the TCP, VA OCC and UF CON created a training strategy to address the lack of qualified telepresenters throughout U.S. healthcare systems. Because the TCP was offered as an open-access, tuition-free program to qualified learners from diverse healthcare settings, the program enhanced the VA's robust telehealth infrastructure. It augmented the availability of telepresenter skills training for healthcare systems nationwide. In designing an academically based, professionally oriented certificate program, the academic partners met their goals of increasing the ranks of qualified telepresenters with standardized competencies. Additionally, the TCP addressed

gaps in learner knowledge about digital health and clarified the importance of the telepresenter role.

Limitations of the TCP study

The authors of this study/implementation of the TCP are affiliated with either the VA Office of Connected Care or the University of Florida College of Nursing. As part of the process of creating this work, these authors assert yearly that they have no conflicts of interest regarding any financial, personal, or religious relationships or those of any other nature.

The preponderance of learners from both these institutions may offer some bias in the results, as learners were highly motivated from either an academic or professional standpoint or both. Thus, the high levels of satisfaction with the pilot and learners' validation that they obtained skills may be affected by these circumstances.

Efforts to mitigate this bias included a robust outreach program to learners in organizations beyond VA and UF CON, including the American College of Physicians, the Indian Health Service, the Department of Defense, and State Veterans Homes. These efforts resulted in 6% of learners not being from VA or UF CON, thereby offering balance to our results.

Conclusions

The VA OCC partnered with UF CON to create the TCP as a strategic way to help meet the telehealth needs of all patients, including Veterans. Through this novel program, motivated students attained skills in professional telepresenting, thus augmenting their role in supporting patients *and* empowering providers to implement best practices for telehealth.

For VA OCC and UF CON, the TCP created a curriculum standardizing telepresenting practices and endeavored to enhance the professionalism of the telepresenter role. For learners, the TCP had the added value of offering them formal telehealth education at a nationally recognized institution, elevating their professional credentials. For the public, the TCP helped meet an unprecedented, critical demand for enhanced access to virtual care.

This report reveals that learners endorsed considerable satisfaction from their coursework and investment in telepresenter professionalism. We recommend that future course developers consider modern instructional design theories to enhance learner engagement and content retention. We also recommend using data analytics to engage with learners and inform process re-engineering to improve course offerings.

Through their work on the TCP, VA OCC, and UF CON created what may be a viable model for how future collaborations between healthcare systems and universities can produce more qualified healthcare professionals and improve telehealth quality and accessibility. Such

a model is valuable because increasing virtual care and remote patient monitoring capabilities promises to be vital in reducing healthcare disparities nationally and globally.

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The authors declare that they have no known competing financial or non-financial relationships or activities that could, or appear to, influence the work reported in this publication.

Contributors

Dr. Kobb contributed to the conceptualization, writing, and review of the draft initially and in response to reviewer comments. Ms. Jean-Baptiste contributed to the conceptualization, writing, and review of the draft initially. Mr. Bonds contributed to the conceptualization, writing, and review of the draft initially. Dr. Love contributed to the conceptualization, writing, and review of the draft initially. Dr. Harris contributed to the conceptualization, writing, and review of the draft initially and in response to reviewer comments. Dr. Morgan contributed to the conceptualization, writing, and review of the draft initially and in response to reviewer comments.

Data Availability Statement (DAS), Data Sharing, Reproducibility, and Data Repositories

Inquiries concerning the data used in this study should be directed to the corresponding author.

Application of AI-Generated Text or Related Technology

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