A Student-Led Telephone-Based Clinical Learning Program for Outreach to Older Adults

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Abstract

Background: Early clinical experiences expose students to patient-centered care. However, early incorporation of telehealth communication skills remains limited in health professions education. In this study, we aimed to design and evaluate a telephone-based clinical learning program for students to promote the development of patient-centered communication skills while addressing healthcare disparities experienced by older adults during the COVID-19 pandemic.

Methods: We utilized workplace learning principles in designing a telephone-based clinical learning pilot program for health professions students at an academic geriatrics primary care clinic. Students conducted three types of telephone calls to patients that 1) assessed for unmet needs (e.g. food, medication, medical supplies, caregiving, social support, and/or access to medical care) (screening call), 2) addressed social isolation (social call), and 3) helped patients set up videoconferencing software to prepare for telehealth appointments (telehealth-training call). We tracked telephone call completion and outcomes via weekly student reports and the electronic health record. To evaluate program efficacy and learning outcomes, students completed an anonymous post-program survey that assessed pre- and post-program knowledge and skills acquisition. Data was analyzed using descriptive statistics and Wilcoxon rank-sum tests.

Results: Five medical student liaisons led 23 medical and nurse practitioner students in calling 335 patients over 13 weeks. Students successfully reached 247 patients (74%), assisted 25 patients in setting up videoconferencing software, and engaged 30 patients in weekly social calls. Of 21 students who completed the post-program survey, 18 (86%) believed this program provided meaningful clinical exposure. After participation, all students felt comfortable interacting with patients by telephone and 20 (95%) felt confident in relationship-centered communication. Students reported increased knowledge about vulnerabilities in the geriatric population (p = 0.002).

Conclusion: This telephone-based program allowed health professions students to support a vulnerable population and gain patient-centered communication skills. This program could be adapted for implementation in multiple contexts as an effective telehealth clinical learning experience, especially for pre-clerkship health professions students who could gain early exposure to telehealth and practice communication and health coaching skills with patients.

Background

The COVID-19 pandemic has greatly exacerbated social and healthcare inequities, as public health measures to reduce viral transmission have resulted in closures of nonessential facilities and the transition of healthcare and education to online formats.[1] These changes have left many populations, such as older adults, disproportionately vulnerable to the challenges of increased social isolation, food or resource insecurity, and decreased access to necessary medical care or caregiving.[2] One way to address these needs is through the use of telehealth. Telephone-based outreach, a form of telehealth, has been

shown to be particularly beneficial in facilitating health promotion interventions for groups with challenges connecting to new technologies or online platforms, such as older or unstably housed adults, and for groups with geographic barriers to health services, such as rural populations, due to its widespread accessibility.[3−6]

The pandemic has also displaced health professions students, especially those in pre-clerkship years, from direct patient care and learning, preventing early integration of in-person clinical experiences.[7−9] In addition to increasing preparedness for clinical clerkships and residency, early integration of clinical experiences helps students develop patient-centered perspectives on healthcare, gain appreciation of multidisciplinary care, expand awareness of societal needs in medicine, and better prepare to address healthcare inequities.[10−14] This displacement has resulted in an increasing emphasis on clinical experience via telehealth and telephone-based outreach programs, which can provide students with an avenue for patient interaction and clinical exposure, as well as simultaneous opportunity to develop valuable new skills in remote patient care.[15] With its growing role in modern healthcare delivery, telehealth has become increasingly important; organizations such as the American Medical Association now advocate for the inclusion of telehealth as a core competency in medical education.[16] Despite this, the incorporation of telehealth communication skills remains limited and highly variable between medical curricula.[15,17−19]

Here, we report the curricular design and outcomes of a novel telephone-based clinical learning pilot program for health professions students. Goals of this program were 1) to support community-dwelling older adults by addressing social and technological barriers to healthcare delivery in the geriatric population and 2) to promote the development of health professions students' communication and health coaching skills with a remote clinical learning experience.

Methods

Setting and Participants

We collaborated with an academic geriatrics primary care clinic that serves a diverse population of community-dwelling older adults ages 70 and above. Geriatrics primary care physicians (PCPs) at the clinic created a prioritized list of patients based on their risk of social isolation or unmet needs during the COVID-19 pandemic, which included limited caregiver support, mobility issues, limited English proficiency, and/or cognitive decline.

A geriatrics faculty lead practicing at the clinic provided the necessary systems context for this learning experience. Student participants included first- and second-year medical students (pre-clerkship), third- and fourth-year medical students (clerkship), and nurse practitioner (NP) students from the University of California, San Francisco. Students chose to participate as part of their credited coursework or as volunteers. Five medical student liaisons facilitated communication between the students and clinic staff and oversaw student operations, which included training new student participants, managing the

students' concerns, assigning patients and call types, and tracking outstanding patient needs. This study was reviewed by and received an exemption from the Institutional Review Board at our institution.

Learning Objectives

By the end of the program, students were expected to meet the following objectives: 1) to identify and address unmet needs important to the wellbeing of older adults in collaboration with an interprofessional team, 2) to apply relationship-centered communication and health coaching skills beyond traditional clinical care settings, and 3) to identify and address common communication barriers (e.g. sensory or cognitive impairment, language barriers) among older adults.

Program Design

We utilized principles from workplace learning, in which health professions students learn through active participation and collaboration in patient care, to design this telephone-based clinical learning pilot program.[20] These key principles included peripheral participation, socio-cultural learning, scaffolding, and reflection (Table 1). The following opportunities were incorporated to correspond with each principle: 1) creating meaningful peripheral participation in clinical care with the clinical team by having students follow their assigned patients in the electronic health record (EHR) system, 2) promoting socio-cultural learning by introducing students into a new clinical community with interprofessional collaborative practice, 3) scaffolding students' prior knowledge to match level-appropriate clinical responsibilities, and 4) encouraging growth through self-reflection.

Table 1
Overview of workplace learning framework utilized in program design.

Principle of workplace learning	Definition	Implementation within the program
Meaningful peripheral participation	Developing knowledge by initially participating peripherally while gradually building skills to develop into full participants	● Students followed patients' clinical courses via EHR after completing calls to observe follow-up care by the interprofessional team.
Socio-cultural learning	Learning by immersion in a new environment through cultural and social factors, such as interpersonal interaction and dialogue	● Students collaborated with the clinic team via the EHR to deepen understanding of clinic workflow and of interprofessional collaborative practice. ● Liaisons provided video orientation sessions and weekly check-in emails to build community. ● Students were provided with shared online resources, including sample call scripts, program workflow guide, and patient educational resources.
Scaffolding	Providing appropriate support structures and expectations based on students' training level	● Pre-clerkship medical students conducted follow-up social calls with English-speaking patients. ● Pre-clerkship students were paired directly with student liaisons to discuss any clinical concerns. ● Clerkship and nurse practitioner students conducted all call types and addressed various communication barriers (e.g. language barriers, cognitive impairment, hearing impairment). ● Clerkship and nurse practitioner students used the EHR to practice documentation and interprofessional collaboration.
Reflective learning	Encouraging students to independently learn and find meaning in their experiences	● Faculty lead sent weekly e-mails with program success stories and learning points. ● Faculty lead encouraged students to reflect on call interactions and pursue further learning about challenges faced by homebound older adults. ● Faculty lead and student liaisons elicited program feedback and offered opportunities to discuss challenges.

With these principles in mind, three call types were developed for students to connect with older adult patients: screening calls, social calls, and telehealth training calls (Fig. 1). Screening calls assessed for

healthcare concerns and unmet needs regarding food, medications, medical supplies, caregivers, access to telehealth, and social isolation. Students identified needs and coordinated with the clinical team through the EHR. Based on patients' preferences, students made weekly or biweekly semi-structured social calls to help prevent social isolation and/or conducted telehealth training calls to help older adults download, access, and practice using telehealth software, such as video communication applications, prior to upcoming telehealth appointments. Students had autonomy to complete assigned weekly calls on their own schedule.

Students had ongoing opportunities during the program to provide suggestions for program improvement through weekly emails to the faculty lead, student liaisons, and clinic staff.

Data Collection and Analysis

Student liaisons tracked and verified completion and outcomes of assigned patient calls through weekly student reports and EHR documentation. After completing the program, students completed an anonymous online post-program survey that assessed pre- and post-program learner knowledge and communication skills to characterize the program's efficacy in achieving its objectives. We used descriptive statistics and Wilcoxon signed-rank tests to compare knowledge and attitudes before versus after program completion. A Bonferroni correction was applied to correct for multiple comparisons and values with $p < 0.007$ were considered significant.

Results

Over the 13-week pilot program, 23 students elected to participate in either a condensed 3- to 5-week commitment (n = 5) or a longitudinal 13-week experience (n = 18). Of the 23 students, there were 5 (22%) pre-clerkship medical students, 16 (70%) clerkship medical students, and 2 (9%) NP students. Nine of the 16 clerkship medical students (56%) opted for academic credit while 7 (44%) participated on a volunteer basis.

Students placed telephone calls to a total of 335 patients, including all 124 (100%) that had been identified by their PCPs as being at high-risk of social isolation and 211 of 835 (25%) non-high-risk patients. All high-risk patients received calls within the first 6 weeks. Of the patients called, students successfully spoke with 247 patients (74%), including 96 high-risk and 151 non-high-risk patients. Students assisted 25 of the 28 patients (89%) who requested telehealth training, allowing 22 patients (79%) to complete a video-based telehealth appointment with their PCPs or specialists within two months of the training. Students engaged 30 of the 47 patients (64%) who desired social calls.

Twenty-one of the 23 students (91%) completed the post-program survey, and the majority (n = 18, 86%) felt this program provided moderately or highly meaningful clinical exposure. Compared to before the program, students reported increased knowledge about vulnerabilities in the geriatric population (program objective 1) and improved confidence in multiple clinical and communication skills (program objective 2) (all $p \leq 0.005$, Table 2).

Table 2
Student ratings of confidence in communication, clinical, and telehealth skills before and after program participation.

Question	Number of Responses (n = 21) (%)	Before* (mean ± SD)	After* (mean ± SD)	P value[†]
I feel comfortable interacting with patients over the phone	21 (100%)	3.38 ± 0.97	4.47 ± 0.51	**0.001**
I feel comfortable interacting with patients' family or caregivers over the phone	17 (81%)	3.52 ± 0.94	4.41 ± 0.51	**0.003**
I have confidence in my relationship-centered communication skills	21 (100%)	3.71 ± 0.78	4.33 ± 0.58	**0.002**
I am confident in my ability to collaborate with an interprofessional team (n = 12)[§]	9 (75%)	3.33 ± 1.00	4.11 ± 0.33	**0.005**
I am comfortable using the electronic health record (n = 16)[‡]	13 (81%)	3.54 ± 1.13	4.23 ± 0.44	**0.003**
I have knowledge about vulnerabilities in the geriatric population	21 (100%)	3.86 ± 0.65	4.48 ± 0.68	**0.002**
I feel comfortable triaging patients' health concerns (n = 12)[§]	9 (75%)	3.22 ± 0.83	3.78 ± 0.67	**0.004**

*Responses were rated on a Likert scale that ranged from strongly disagreeing (1) to strongly agreeing (5) with the given statement.

[†]Bolded values were considered significant

[‡]Students were only asked to respond this question if they had utilized the EHR for documentation during the program.

[§]Students were only asked to response to this question if they conducted screening calls during the program.

All respondents (n = 21,100%) believed this program would be a beneficial pre-clerkship learning experience. After participation, all students (n = 21,100%) felt comfortable interacting with patients by telephone, with 20 (95%) expressing confidence in relationship-centered communication. The most frequently encountered challenges with communication (program objective 3) were patient technological ability (n = 16, 70%), cognitive impairment (n = 8, 35%), language barriers (n = 6, 26%), and sensory impairment (n = 6, 26%).

Discussion

This student-led telephone-based clinical learning pilot program effectively provided health professions students with an opportunity to improve skills in patient-centered communication and health coaching via telehealth while identifying and addressing social, technological, and healthcare disparities faced by older adults. In line with prior literature, our results highlight the benefits of structured remote clinical learning experiences in helping students foster skills that can be especially valuable when working with and promoting health equity in vulnerable populations.[21]

Unlike traditional in-person clinical experiences for pre-clerkship students, this telephone-based clinical learning pilot program allowed non-essential health professions students to continue with direct participation in patient care of highly vulnerable patients during the COVID-19 pandemic, while also providing opportunities to practice workplace learning.[22–24] Screening calls allowed students to apply clinical knowledge to triage healthcare concerns and unmet medical or social work needs. Social calls provided an opportunity to practice empathy-driven, relationship-centered communication in a longitudinal setting, since students were assigned to the same patients for the duration of their participation. Telehealth training calls challenged students to practice patient-centered health coaching skills, such as teach-back methods, with patients of varying technological literacy and accessibility. Our program went beyond the scope of other telephone-based medical student outreach programs developed for older adults during the pandemic in that we not only developed a multidisciplinary format to address patient needs, but also provided a structured educational experience for health professions students, who received academic credit for participation.[25,26]

Given that our program is not limited by logistical constraints such as clinic space or real-time clinical teaching by preceptors, this model of remote clinical learning can be easily adapted for students at other institutions longitudinally and implemented in partnership with outpatient clinics that serve many vulnerable patient populations beyond older adults. In particular, our program model could be beneficial for pre-clerkship students by providing early telehealth experience, direct patient interaction with vulnerable populations, and health communication skills training before beginning full-time clerkships. Our results confirmed that participating students overwhelmingly believed this program could be a beneficial supplement to pre-clerkship level students.

There were limitations in our program structure. Given the asynchronous nature of the telephone calls, student schedules, and faculty availability, there was no formal didactic component to the program. Students learned experientially through their patient calls and EHR work, relying heavily on self-directed learning and reflection.[27] Further, given that we relied on students' recall of pre-program knowledge gaps and attitudes by administering a retrospective post-program survey, our results could be limited by recall bias. Finally, due to the institutional policy that limited pre-clerkship medical students' EHR use, these students could not route messages to clinic staff and thus received less opportunity to experience interprofessional collaboration. When developing similar programs, it would be important to consider institutional structural limitations, which may impact program operations and student experience.

To improve learner outcomes, future iterations of this program could incorporate structured didactics to provide greater context about challenges unique to older adults, as well as monthly virtual meetings for students and faculty to debrief as a community. Additionally, assignment of language discordant patients to each student could provide them with opportunities to practice using telephone interpreters with patients who have limited English proficiency, especially given that at least one-tenth of the clinic's patients preferred to communicate in languages other than English.

In addition to providing a remote clinical learning experience, this outreach program supported older adults at an academic geriatrics primary care clinic. Telehealth training calls helped older adults access care necessary for managing chronic medical conditions independently during the COVID-19 pandemic, and were especially important because video telehealth visits were the primary method of healthcare delivery at this geriatrics clinic and most others during this time.[28,29] We also found that this program impacted patients in ways we did not originally anticipate. The recommendation of physical distancing and shelter-in-place in response to the COVID-19 pandemic led to closures of community programs that many older adults rely on for socialization, increasing their vulnerability to social isolation and depression.[30] In collecting anecdotal feedback, multiple students and PCPs reported that the screening and social calls not only improved patients' feelings of social isolation, but also led multiple patients who had been lost to follow-up to reconnect with their healthcare providers. While other healthcare institutions have implemented screening protocols to identify the needs of older adults during this pandemic, to our knowledge our program is one of the first to describe methods with which a healthcare institution addressed underlying social challenges, particularly by providing social connection and video telemedicine education by health professions students.[31,32]

Conclusion

In conclusion, this telephone-based clinical learning pilot program offers a novel model for health professions students to meaningfully support diverse and vulnerable patient populations while advancing patient-centered clinical skills and fostering early exposure to healthcare disparities and telehealth. Future directions may include implementing similar programs for all pre-clerkship students at our institution and assessing impact on students' readiness to provide telehealth care after completion of the program.

Abbreviations

PCP: primary care physician

NP: nurse practitioner

EHR: electronic health record

Declarations

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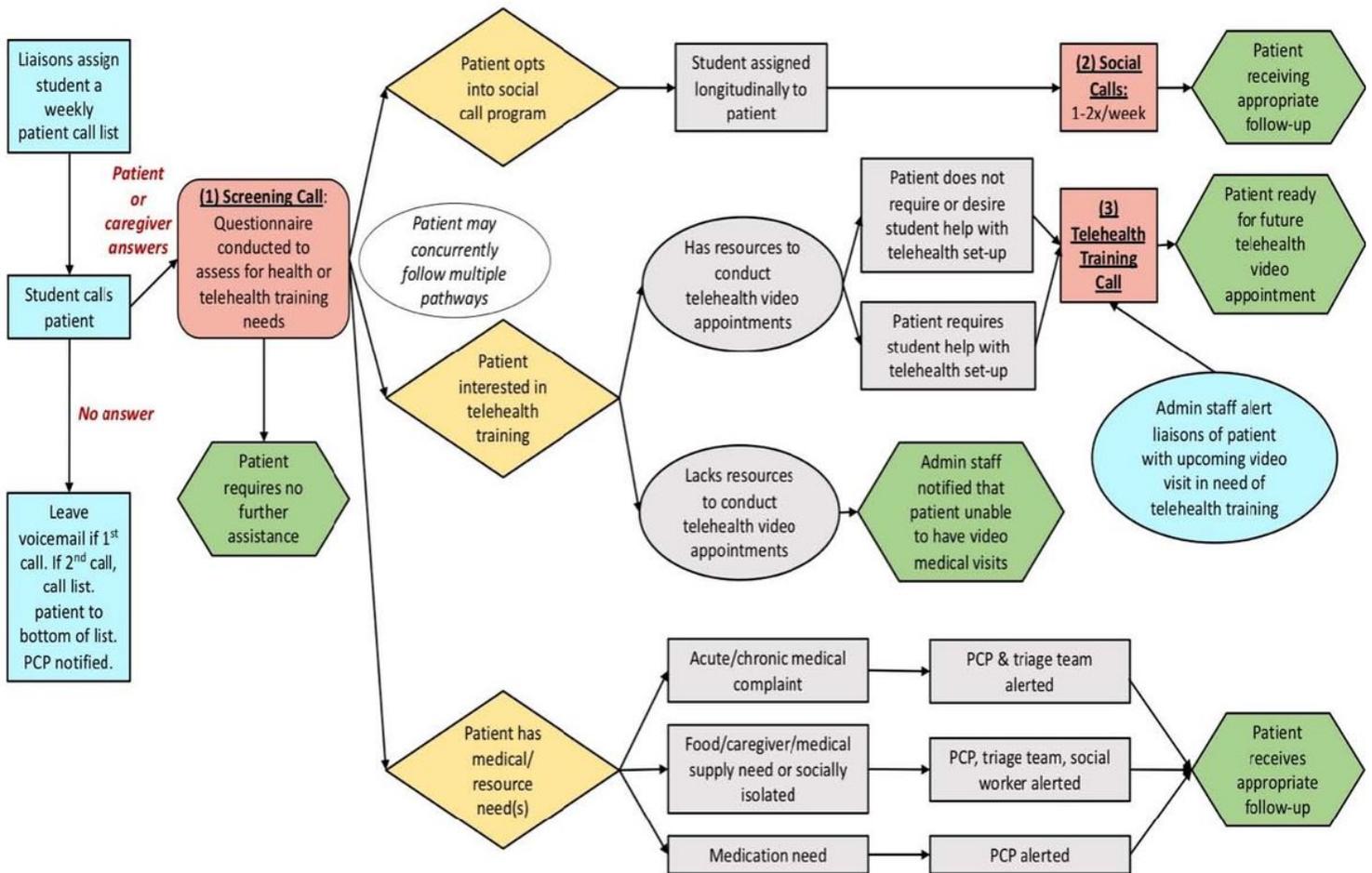
Figures

Figure 1

Program workflow diagram including three call types: (1) screening call, (2) social call, and (3) telehealth training call.