Teachers' perspectives on communication in the context of supervising learners during telehealth encounters

Kelly Skelly[1]

Joshua A. Thompson [2]

Kristin Chu[3]

Caroline Carlin[4]

Sherri Fong[2]

David V. Power [2]

Marcy Rosenbaum[1]

NAME OF DEPARTMENTS AND INSTITUTIONS:

[1] Department of Family Medicine, University of Iowa Carver College of Medicine, USA

[2] Department of Family Medicine and Community Health, University of Minnesota Medical School, USA

[3] University of Minnesota Medical School, USA

[4] Department of Applied Economics, University of Minnesota Medical School, USA

CORRESPONDING AUTHOR:

Kelly Skelly. E-mail: kelly-skelly@uiowa.edu

QHC Qualitative Health Communication

ABSTRACT

Background: The COVID-19 pandemic has led to increased use of telehealth for healthcare visits. Telehealth visits have created new communication challenges for clinician-patient encounters and for interactions between health professional learners and clinical teachers, known as preceptors. Little research has explored how teachers can effectively supervise and explicitly emphasize communication skills during telehealth visits. **Aim:** This study's purpose was to explore clinical preceptors' perspectives on effective approaches in precepting telehealth visits with medical residents and students. **Methods:** An online survey elicited comments from clinical preceptors from two United States medical schools on effective telehealth teaching practices. Thematic analysis identified salient perspectives and overall guidance on precepting telehealth encounters. **Results:** Survey participants reported varying levels of experience with precepting telehealth visits. Main areas identified as important for effectively supervising telehealth encounters and facilitating effective communication included explicit preparation for preceptors, learners and patients and using educational opportunities, especially observation, during the telehealth encounter. **Discussion:** This study identifies strategies for maximizing effective communication between preceptors, learners, and patients during supervised telehealth visits. Participants identified potential educational advantages of supervising telehealth visits. **Conclusions**: Clinical teachers can reinforce effective telehealth communication skills with learner led telehealth patient encounters.

KEYWORDS

BIOGRAPHIES

Kelly Skelly, MD, is Professor, Clinical, in the Department of Family Medicine in the University of Iowa Carver College of Medicine, United States, where she studied medicine and completed residency training. She is Fellow in American Academy of Family Physicians and is active in both the Society of Teachers of Family Medicine and EACH International Association for Communication in Healthcare. She is a clinician, who teaches and researches healthcare communication.

E-mail: kelly-skelly@uiowa.edu. ORCiD: 0000-0002-5992-2849.

Joshua A. Thompson is an assistant professor in the Department of Family Medicine and Community Health and director of the first-year clinical skills course at the University of Minnesota Medical School, USA. His research focuses on telehealth care and remote patient monitoring.

E-mail: jthomps@umn.edu. ORCiD: 0000-0002-4283-3786.

Kristin Chu, MD, is a first-year family medicine resident at Greater Lawrence Family Health Center in Massachusetts, USA. Her interest surrounds healthcare access, education, and community medicine.

E-mail: chuxx229@umn.edu. ORCiD: 0000-0002-4488-1511.

Caroline Carlin is a health services researcher whose research focuses on choices and organizational structure in the delivery of health care. Recently, this work is focused on primary care and how transformation to a patient-centered medical home impacts cost and quality of patient care. In addition to her academic role, previous experience as director of benefits for a national discount retailer and as a health care actuary informs her research.

E-mail: ccarlin@umn.edu. ORCiD: 0000-0003-0813-3433.

Sherri Fong, MPH, is a research facilitator in the Department of Family Medicine and Community Health. Her work focuses on supporting the scholarly work of the faculty and residents in the Department.

E-mail: fong0034@umn.edu. ORCiD: 0000-0001-6816-8609.

David Power, MBBS, MPH, directs his department's medical student education program and sees patients on 2 days per week. He is a Professor with over 40 peer-reviewed publications, many co-authored with student mentees. He has focused his research efforts on medical student education, student wellbeing and primary care topics. He has received a number of University and medical school teaching awards.

E-mail: power007@umn.edu. ORCiD: 0000-0001-7822-0597.

Marcy Rosenbaum, PhD, is Professor of Family Medicine and Faculty Development Consultant for the Office of Consultation and Research in Medical Education at the University of Iowa, USA. She has been actively involved in teaching, curriculum development and conducting research on clinician-patient communication, faculty development and medical education for the more than 30 years.

E-mail: marcy-rosenbaum@uiowa.edu. ORCiD: 0000-0002-8000-5711.

Introduction

Secondary to the COVID-19 pandemic, substantial changes have been required in medical student and postgraduate learner (resident) clinical education and supervision. Many United States medical schools suspended in-person preclinical and clinical instruction and moved to virtual or hybrid instruction (Ferrel & Ryan, 2020). Simultaneously, many out-patient clinical encounters shifted from occurring in person to occurring remotely, via telephone or video communication technologies. These two trends have required educators to adapt supervising learners to the telehealth environment (Lawrence et al., 2020). This has created new opportunities and challenges for clinical teachers to develop skills for effective teaching and communication in virtual clinical encounters.

Literature review

Over the last decade telehealth as a medium for clinical care has received significant attention in the literature (Callaghan et al, 2022, Valdes et al, 2022). Within this literature, increasing emphasis has focused on new and specific communication skills needed for effectively conducting and communicating during telehealth visits (Sakumoto & Khanna 2022; Nemetz, Urbach & Devon 2020; Holstead & Robinson 2020; Henry et al., 2017; Elliott et al., 2022). For example telehealth communication competencies include clear communication between clinician and patient regarding use of and trouble-shooting telehealth technology, attention to both clinician and patient non-verbal communication including eye contact during video encounters, signposting when engaging in multiple tasks such as writing in the patient chart, incorporating and encouraging more pauses, clarification and question asking during information gathering and particularly information sharing as well as increased explicit verbal empathy. Before the pandemic, literature related to supervising learners during telehealth visits predominantly described experiences where the learner was physically present with the patient, but the supervising physician was located remotely (Cameron et al., 2014; Gill et al., 2020; Schrading et al., 2020). In contrast, there was minimal research or guidance provided on how to effectively supervise learners conducting telehealth visits with patients located remotely from both the learner and supervising physician. Most pre-pandemic publications about telehealth supervision were limited to psychiatric graduate medical education, with a notable exception being a focus group study about the potential impact of telehealth on resident education in primary care (Dzara et al., 2013; Fleming et al., 2009; Szeftel et al., 2008). At the time we initiated the study, what had been published mostly focused on recommendations for training early learners, leaving a gap in advice for best practices for teaching senior medical students and residents (Hovaguimian et al., 2021; Iancu et al., 2020; Smith, 2020).

For purposes of this paper, we refer to supervision of learners during telehealth visits as "telehealth precepting", and the clinical teachers who supervise telehealth visits as "preceptors". The term "precepting" is commonly used to describe ways in which a clinical teacher interacts with a learner in the context of outpatient patient care. This precepting can include such things as orienting learners, role modeling interactions with patients, and

teaching about clinical reasoning and clinical care in response to learner case presentations during or after seeing patient (Heidenreich et al., 2000). In addition to role modeling, clinical supervision of learners participating in patient encounters, either through observation or more frequently responding to learners' case presentations following patient encounters, is the main context in which most clinical teaching occurs (Heidenreich et al., 2000; Rosenbaum, 2017). This necessary shift to telehealth precepting has created challenges and opportunities related to communication skills learning during clinical training. Medical learners' communication and empathy skills have been noted as having the potential to decline during clinical training due to lack of emphasis and even undermining of previously learned communication skills by clinical preceptors (Rosenbaum 2017; Bombeke et al., 2010). Authors have noted that explicit emphasis on communication skills during precepting may help prevent a decline in these skills during clinical training (Rosenbaum, 2017; McNair et al., 2016). Because of the new communication skill set required for telehealth encounters, clinical precepting may have the opportunity to emphasize these skills to learners while supervising telehealth visits. However, how clinical teachers can effectively supervise and explicitly emphasize communication skills learning during telehealth visits had not been examined pre-pandemic.

Because there was limited prior research on the topic, we chose to conduct an exploratory study with the aim of gathering clinical teachers' perspectives on effective approaches in precepting telehealth visits with medical residents and students. Regarding communication in healthcare, data in this study points to two types of healthcare interactions: 1) The interaction between clinical supervisor and learner surrounding telehealth visits and 2) The interaction between patients and learners under the supervision of a clinical teacher during telehealth visits.

Methods

Data collection

As part of a larger survey study of medical educators and telehealth precepting, we elicited participants' perspectives on effective telehealth teaching. The current study reviewed comments made by faculty teaching physicians in the United States at two different medical schools specific to how they teach students and residents while practicing telehealth. Within the survey we utilized Tuckson's definition of telehealth as "a situation where patients and providers are separated by a distance in the delivery of healthcare, via telephone, video consultations (Tuckson et al., 2017)." We used this definition to explore telehealth teaching practices through two open-ended questions embedded in the larger quantitative survey: 1) What guidance would you give to someone who has not precepted telehealth visits regarding how to approach this task most effectively, including what helps facilitate learner and patient comfort; and 2) Any additional comments about precepted telehealth visits? In addition, as part of the survey, participants were invited to comment on advantages, disadvantages and reasons for or against participating in telehealth precepting.

We piloted the survey with six physician faculty members who had telehealth precepting experience and incorporated their feedback into the final instrument. We sent the survey

electronically to all clinical physician faculty members in the departments of Medicine (including Medicine-Pediatrics), Family Medicine, and Pediatrics at the University of Minnesota and in Family Medicine, General Pediatrics, and General Internal Medicine at the University of Iowa medical schools in August and September 2020. During the time of the survey, medical students at both schools had returned to the in-person clinical environment, albeit in smaller numbers and with less time spent in clinical experiences. Resident learners in these departments were all actively involved in patient care at the time of the survey.

Both the University of Minnesota and University of Iowa Institutional Review Boards determined that the survey did not constitute human subject research.

Data analysis

Thematic analysis was used to identify key themes in participants' responses to the open-ended questions about telehealth precepting and approaches to telehealth precepting. All comments were compiled and reviewed by the clinical preceptors on the research team, as well as the senior author who has extensive experience in qualitative research. Using a phenomenological "editing analysis style" approach (Crabtree et al., 1992) each reviewer was asked to organize the comments into themes and subthemes of consistently indicated "steps" the participants identified in effectively precepting telehealth visits. Using this type of thematic analysis allows for reading of the data as a basis for developing codes and themes rather than applying a predetermined set of themes to the data (Hanson et al., 2011; Malterud, 2001; Nowell et al., 2017). This is a particularly appropriate approach for identifying the range of perspectives on topics which have not been previously investigated. Each reviewer's analysis was then compared and discussed to reach consensus on salient themes and subthemes, meaning those mentioned most frequently, in participant responses.

Results

Survey response rate by department from both the University of Iowa and University of Minnesota was 56.9% for the Department of Family Medicine, 23.9% for the Department of Pediatrics, and 9.6% for the Department of Internal Medicine. The overall response rate was 23.7% (n = 153/646). Prior to COVID-19, less than 5% of participants had any experience supervising telehealth encounters with learners. Ninety-three (60.8%) had precepted either residents and/or medical students in telehealth encounters in the four to eight weeks prior to the survey with the remainder not precepting learners in telehealth visits during this time period. Table 1 shows the characteristics of those with recent telehealth precepting experience. Most participants with recent telehealth precepting experience supervised only residents (n = 64, 68.8%) or both residents and medical students (n = 20, 21.5%) in these encounters. Fewer participants had supervised only medical students (n = 9, 9.7%). Fifty-nine preceptors (59/93 or 63%) provided comments regarding their perspective and guidance for how to approach telehealth education based on their direct experience with precepting telehealth. Participant comments ranged from single sentences to several paragraphs.

Table 1. Participant characteristics for survey of 93 clinical faculty members at the University of Minnesota and University of Iowa with telehealth precepting experience in the past 4-8 weeks.

	Distribution of participants (%)
Institution	
University of Minnesota	62.4%
University of Iowa	37.6%
Response rate	93/93=100.0%
Specialty	
Family Medicine	66.7%
Internal Medicine (including Med-Peds)	18.3%
Pediatrics	15.1%
Response rate	93/93=100.0%
Years in Practice	
0-5 years	18.9%
6-10 years	22.2%
11-15 years	14.4%
16-20 years	8.9%
More than 20 years	35.6%
Response rate	90/93=96.8%
Learner type precepted in the past year	
Medical students only	2.2%
Residents only	9.7%
Both students and residents	88.2%
Response rate	93/93=100.0%
Learner type precepted in a telehealth visit in the past 4-8 weeks	
Medical students only	9.7%
Residents only	68.8%
Students and residents	21.5%
Response rate	93/93=100.0%

Main themes

Comments from participants consistently pointed to the need for clearer guidance for preceptors and learners to conduct telehealth precepting effectively. Examples of participant statements expressing this sentiment included, "I think having the option of telehealth is good for patients and our learners, but I think we need to think through how to do this most effectively." and "I'm hopeful this [research] will provide us with better tools." Statements such as these highlight the gap preceptors perceive in their experience and understanding of how to translate their teaching skills related to supervising in-person learner-patient encounters to the newer context of telehealth visits. These statements also indicate a perception that different skills and approaches may be needed in precepting telehealth encounters and that little guidance in these issues has been available to preceptors.

Participants provided comments about approaches to effective telehealth precepting. We organized those comments into the broad themes of 1) preparation for the telehealth encounter and 2) educational opportunities and logistics during the telehealth encounter. Where appropriate we provide example comments to elucidate themes and subthemes.

Preparation

A key theme noted in the comments emphasized the importance of adequate preparation prior to the start of a telehealth encounter. This theme involved subthemes of strategies for participants to prepare themselves as preceptors, and to prepare learners and patients.

Preparation of preceptors

The unifying subtheme was noted for preceptors who suggested need for preparation in technology, education and visit logistics. Some participants commented on struggling to become comfortable with the technological aspects of telehealth precepting, identifying this need for preceptor preparation. Example statements of this from participants included, "Not everyone has the same level of comfort with technology.", and "Learn how to use the phones - conferencing, transferring, etc." These statements imply that in the context of telehealth visits, participants recognized the need for new skills beyond just effective teaching skills. The tone of these statements also indicates a perception of a potentially difficult learning curve for preceptors and learners in developing competence in the technical aspects of telehealth visits and supervision.

Participants identified a variety of approaches to precepting telehealth encounters which are explored in detail in section 2 below (educational opportunities and logistics). Based on these options, deciding how they wanted to approach precepting telehealth encounters was also noted as an important task in preceptor preparation. Common example statements from participants pointing the need for planning and decision making about how to approach the visit and precepting included "Prep ahead to determine which parts of the visit the learner will do and what can be done with all in the room.", and "Decide in advance what part of the visit you want to observe." Implications of these statements are that thoughtful consideration of how preceptors will supervise the learner and participate in the visit is necessary to guide learner orientation and to ensure effective interactions between preceptor, learner and patient in the context of telehealth visits.

Preparation of learners

In addition to their own preparation, another subtheme of preparation focused on the needs of learners. This involved aspects of orienting the learner during visit logistics and post-visit debriefing. Participants commonly identified that orienting learners at the start of a clinic session resulted in more effective telehealth precepting. This is observed in the following quote where a participant reflects on the preclinic huddle:

> My opinion is that the pre-clinic huddle is key to making the appointments run smoothly. With a pre-clinic huddle, the learner has plenty of time to ask questions regarding confusing topics.

As the previous quote indicates, orientation before seeing patients can help increase learners' confidence in approaching patient encounters as well as opportunity to express their concerns

and have them addressed. In addition, this type of orientation can also help the preceptor assess the learners' knowledge and learning needs. While orienting learners is certainly an important aspect of in person precepting, several participants noted that this orientation and pre-visit precepting was especially important in the context of telehealth visits as they are new for many learners and providers, "I walk through the plan ahead as it has been the first-time residents have done it." or "This is particularly important for younger learners as telehealth uses a slightly more complex skill set." Similar to what participants said regarding their own preparation for precepting telehealth visits, these statements reflect a recognition of the additional and potentially new skill set and learning curve for learners conducting telehealth visits.

During this pre-visit precepting and orientation, explicit discussion of the logistics of the telehealth precepting encounter was identified as important, including if and how the preceptor would be involved in the visit. This is observed in the following quote.

> Really set up a plan with your learner ahead of time, so they know which patients they might be seeing, how you want to do it (both on the line together, bringing you in to precept, calling the patient back). Getting the logistics organized ahead of time allows both you and the student more time with the patient, and more time to talk about the medicine.

These comments where the preceptor reflects on the benefits of pre-visit orientation highlight how this process can impact both the educational experience as well as the interaction with patients in a positive way.

Some participants suggested that practicing use of the technology for telehealth visits beforehand could also be important for learner preparation. As one participant noted, "Consider practicing with the video software and making sure you can get the patient, learner and faculty member on the video at the same time." Participants statements such as these reflect the perception that learners may have similar needs to those identified for preceptors regarding the unique technological aspects of telehealth encounters.

An additional suggestion to help orient learners to conducting telehealth visits was for the preceptor to role model real telehealth encounters while the learner watched, or to have the learner and preceptor initially conduct these visits together. For example, "Initially, I suggest the faculty and resident tele-visit simultaneously for 2-3 visits."

While role modeling may be less frequently used with more advanced learners such as residents for in person encounters, this suggestion points to the potential utility of role modeling even for seasoned learners to gain comfort with the unique aspects of telehealth encounters.

In addition to orienting learners at the start of a clinic session, many participants recommended "priming the learner", meaning preparing learners before individual encounters about what to expect (Heidenreich et al., 2000), to promote more effective interactions with the patient. For example, one participant said, "Recommend to 'pre-staff' the patient and create an agenda/game plan for going into the visit."

A final key subtheme in preparation of learners was clarifying what role the learner would take during the encounter with the patient and how the preceptor would act in order to reinforce that role. For example, one participant said:

Let the students take the lead and later on add our comments as if we are rephrasing the student's recommendations in a way that we don't undermine the student as well as giving the student their respect and autonomy.

This statement emphasizes the opportunity to reassure the learner prior to the visit about how the preceptor will promote the learner's autonomy. This, as well as other themes in learner preparation, reflect steps in creating a safe learning environment for the learner and helping the subsequent telehealth encounter go smoothly.

Preparation of patients

The broad preparation theme is also salient in comments participants made related to the subtheme of preparing patients for the telehealth encounter in an educational setting. The need to orient the patient to the encounter with details about how and if both preceptor and learner would participate in the visit was identified as an important aspect of effective telehealth precepting. A variety of aspects of patient orientation were suggested including who should take the lead in preparing the patient and what information should be conveyed.

In some encounters, the preceptor would take the lead in orienting the patient to the visit. One participant described this approach as, "Asking the patient for permission to have a learner prior to the learner being visible in the video format, then allowing the learner to take control of the session."

Participants suggested the content of this patient orientation should include explaining the educational process and how the learner and preceptor participate in telehealth patient care. Comments from participants described their approach this, including, "Introduce self at beginning and outline your role and structure of the visit and then sit back and let the resident run the visit" and "I always make sure the patient knows that I am present observing the resident. We briefly discuss the patient before the visit starts."

All of these examples point to the potential dynamic between preceptor, learner and patient at the beginning of the visit. Participants stressed the importance of the patient knowing who was participating in the encounter and what each person's role, whether learner or preceptor, would be. Notable in most of these examples is the emphasis on the learner leading the encounter after initial introductions and orientation.

Some participants described a different approach in which the learner took primary responsibility for this task. Thus, particularly when working with a resident, the learner was tasked with orienting the patient to the encounter and the preceptor's involvement. As participant described, "Explain the mechanics clearly to the resident and have them explain them to the patient" or "[Provide a] script for learner to introduce faculty." This approach is another way in which preceptors could reinforce learners' autonomy as a primary member of the health care team.

Participants also suggested directly addressing practical communication issues with the patient at the beginning of the encounter, "Explain roles and flow at the outset so there are no surprises; ask at the visit start where the patient is and how to connect (phone # etc.) if visit is cut off."

Similar to preceptors and learners, this statement points to patients also needing assistance and reassurance regarding how telehealth technology works.

Educational opportunities and logistics

Best practices in clinical teaching consider the clinical environment and participants discussed clinical teaching opportunities based on the telehealth clinical context. Participants identified the most likely telehealth clinical scenarios where preceptors were present for the entire encounter, joined the visit in progress, precepted in the patient's presence or precepted with learners while the patient stayed "on hold" on the call. Each of these approaches was noted as having advantages and disadvantages in regard to educational opportunities and logistics.

Being present for the whole encounter

A common educational subtheme in comments about telehealth teaching was related to direct observation of learners. Several preceptors identified that by participating in the whole encounter, they were able to assess learners' clinical skills in a way not possible with traditional precepting away from the patient. When asked about advantages of telehealth precepting, comments frequently pointed to this opportunity for observation and more direct supervision, "Being able to remote into a video visit and observe the learner interacting with the patient in an unobtrusive way." Another participant described it in this way:

> I have enjoyed doing telehealth visits with continuous observation of the residents. It helps me to give feedback and helps them learn when to listen to what I have to say. I had one resident tell me she had never had such observation and she thought it was fun and excellent learning experience. This prompted me to do more direct observation even with in-person visits with residents.

This perspective highlights the unique opportunities telehealth can provide for observation of learners which is often perceived as less feasible with in person encounters.

The observation theme is further developed with exploration of its use in feedback about effective communication. A number of preceptors noted that joining telehealth visits particularly provided opportunity to observe and reinforce learners' communication skills. For example, one preceptor commented on the added benefit of observing via telehealth, "Ability to assess the residents' skills at picking up on verbal cues, ability to assess learner's telehealth skills". Another noted:

> Most of our virtual visits were by telephone--it is a test of one's ability to listen to have a patient, medical student, preceptor, interpreter, and family member on the phone. But if everyone is thoughtful, listens for cues, knows their role, and values everyone's input, it can be incredibly beautiful.

Both of these comments emphasize that the nature of telehealth visits can allow for thoughtful attention to observing and/or listening to learners as well as serve a credible basis for real time assessment and feedback to learners.

Preceptors identified that participating in learner telehealth visits created opportunities to address other teaching points not necessarily available with traditional precepting away from the patient. One area noted by several participants was that video conferencing allowed additional insights into the patient's background and social context. For example, "Being able to see the patient's background, similar to a home visit" and "Can be a more relaxed atmosphere with patients being at home and unhurried." These statements again highlight the unique nature and potential advantages of telehealth visits compared to in person clinic

visits, giving preceptors and learners access to aspects of patient's lives that may not be apparent during in person visits. They also point to video conferencing telehealth visits as contributing to viewing the patient in a more wholistic manner.

Preceptors also noted that by observing the whole encounter they could witness the learner's clinical reasoning and how the patient history and questions asked informed their thinking, "… it was nice to directly observe. Gets a better perspective of patient's view and I can track resident's decision making"

Additionally, participants noted that precepting telehealth provides an opportunity to teach how and when to do telehealth, "We need to precept them, and learn how to do that well, since residents will need to know how to conduct these visits well once they graduate." and

"Ability to teach what is appropriate to evaluate and treat over telehealth vs what is more important for in-person evaluation." These quotes illustrate the recognition that telehealth encounters require development of additional clinical knowledge and skills in communication and clinician assessment and reasoning. They also again point to preceptors needing additional teaching skills to help learners effectively conduct telehealth visits.

The educational subthemes about how to do the real-time precepting highlight ways to maximize educational impact safely. Some participants provided useful ideas for how to best join telehealth calls for the whole visit. For example, one participant said, "Normalize learner involvement as you do in in-person precepting. Mute your microphone. Communicate with the resident via text so that you get on the visit at the same time, etc." This and similar statements again highlight that learning to precept telehealth encounters requires not only effective teaching skills but also adaptation to use of a variety of technologies. Another option noted by some participants was rather than joining the video or phone call, one could observe learners by being in the same room while they conduct telehealth visits. For example, as one participant articulated:

> I am typically in the same workroom as the resident while he/she speaks to the patient by phone and can 'eavesdrop' to get a sense of the resident's interactions with the patient, approach to questions and responses, and perhaps even thought processes with the line of questioning.

This statement points to the potential that even phone call-based telehealth visits create a non-obtrusive option for assessing learner skills and clinical reasoning, something not available in in person visits.

Being present for part of the encounter

An additional subtheme related to educational opportunities highlights how some participant approaches directly addressed the duration of precepting with emphasis on what benefits can be gleaned, no matter the how long the preceptor is present in the telehealth visit. Some preceptors noted that rather than participating in the whole visit, they could join the visit for limited periods of time and increase efficiency while precepting, "Try to pop in on the resident's screen to introduce yourself." and "Typically, I will be on briefly with 2nd and 3rd year residents." In contrast to in person visits, spending short periods of time with the learner and patient is feasible without significantly disrupting the encounter. This can accomplish several desired outcomes including letting the patient know that the preceptor is involved in

their care and saving clinical time, which is consistently noted as a challenge in clinical care and teaching.

Precepting in the patient's presence

Educational subthemes about precepting in the patient's presence were evident in several quotes. Several participants noted having the learner present the patient to the preceptor as part of, rather than away from, the telehealth encounter with the patient, "Can ask for the patient to remain on video so if there are further questions they can be asked." Or as described by another participant:

> Residents are unable to succinctly summarize patients in between visits. Only way to stay on time is either give a fixed time before I join call (e.g., 10 minutes), or join from beginning. I mute myself and let resident talk, then have resident summarize to me again on call and formulate the plan on the spot.

This approach was noted as being more efficient while enhancing the patient's experience, "Have the expectation to summarize presentation in front of patient as the patients will have greater understanding of their concern, medical recommendations and next step plans with follow-up recommendations" and "For phone visits, I would prefer to be speaking with the resident while the patient is on speakerphone. This would allow for more robust interaction." Both efficiency and key clinical opportunities were identified and highlight how the telehealth encounter is ripe for this type of teaching.

Precepting while the patient is on hold

The final educational subtheme in comments was related to the inevitable part of telehealth that is unique and does allow for more typical education away from the patient. Rather than joining the telehealth visit, some participants noted a preference for precepting with the learner "away" from the patient. Advantages to this approach were identified as not raising unnecessary concerns for the patient while they are being discussed, for example, "Allow resident to collect thoughts and not be on the spot", and "Avoid using too much medical terminology in front of the patient." Nevertheless, some participants described using a precepting approach similar to what is traditionally done for in-person visits where the preceptor and learner (usually a medical resident and not a student) meet after the visit has been completed. In the context of telehealth visits, patients can be contacted after precepting if there are additional questions or issues to discuss.

Discussion

This paper is one of the first to explore clinical teachers' perspectives on effective approaches in precepting telehealth visits with medical residents and students. Early in the pandemic, with little specific teaching guidance available, our participants figured out in "real time" how to creatively make telehealth work while educating learners. Our findings provide insight related to teachers, learners and patients in telehealth visits regarding visit preparation, setting clear

expectations and opportunities to address important communication teaching points through observation, feedback and real-time experience.

A limited number of recent publications have provided tips for telehealth teaching, particularly with early learners where medical students are primarily in an observer role (Hovaguimian et al., 2021). Our paper supplements this work by providing empirically collected insights of clinical teachers who are working with both beginning and advanced learners (senior medical students on clinical clerkships or residents) and who are actively providing care to patients. Preceptors shared their recommendations about the best educational practices in telehealth encounters when learners were primarily responsible for some or all of the patient care delivery (e.g., history gathering, physical exam, negotiating management plans, and providing patient education). Especially salient was guidance on how to address what were perceived as new challenges for clinical teaching brought on by the telehealth context, including recommendations to enable effectively joining and participating in all or part of a learner-patient telehealth encounter.

Several of the recommendations from study participants build on recommendations in the general clinical teaching literature. For example, existing literature consistently emphasizes the importance of orienting learners to the clinical setting and priming them for individual patient encounters (Heidenreich et al., 2000). Similarly, there was strong consensus among our participants that orientation to the telehealth encounter was key to effective telehealth precepting. The telehealth context appears to necessitate a more in-depth orientation than in-person encounters because the technology may be less familiar, and negotiating the technological logistics, timing, and process of participating in encounters can be more challenging. Along the same lines, orienting patients to the logistics of the encounter and the roles of learner and preceptor was noted to be important. Managing potential technological issues and the preceptor's ability to be "on" the call or join the video encounter and mute/hide themselves are different than what patients experience during in-person encounters. To help maintain learner autonomy in the encounter, more advanced learners can take the lead in orienting patients.

Participants identified the need to decide when and how to join telehealth encounters with learners. Similar to what is possible with in-person visits, our participants suggested that as preceptors, they could be present for the entire visit, or they could be present for only the precepting portion whether in or away from the patient's presence. The decision regarding which of these approaches was most appropriate depended on the precepting goal and the educational and clinical situation. For example, the medical education literature consistently points to the advantages of direct observation and demonstrates its underutilization (Hauer, Holmboe, & Kogan, 2011; Kogan, Holmboe, & Hauer, 2009; Schopper et al., 2016). Communication skills learning has been noted as potentially being undermined during clinical experiences either through lack of emphasis on these skills in teaching or the hidden curriculum devaluing effective communication. Both direct observation and role modeling have been identified as important teaching strategies to reinforce and further develop learners' communication skills (Rosenbaum, 2017; Skelly, Rosenbaum, Barlow, & Priebe, 2019). Based on responses in this study, precepting telehealth visits may provide a new and less obtrusive opportunity to observe and provide feedback to learners on their communication skills.

Several participants noted that being present for the entire visit provided important information on patient perspective and affect, as well as important assessment data on which to base feedback to learners on their general clinical skills and decision making. Furthermore, participants positively noted that one advantage of telehealth was the opportunity to join or overhear the telehealth visit to directly observe learners in a less obtrusive manner. A preceptor assigned to four residents, though, cannot simultaneously be present for the entirety of every resident encounter. Participants again noted the advantage of telehealth over in-person precepting in this situation due to the ability to easily "join" for just parts of these encounters without physically changing location, thus contributing to overall clinical efficiency, clinic flow, and learner education.

Participant comments pointed to telehealth being particularly conducive to the teaching approach of 'Precepting in the Patient's Presence (Madson et al., 2014; Petersen et al., 2008; Power et al., 2017). This approach, in which the learner presents their findings to the preceptor with the patient listening, has been demonstrated to have several benefits for in-person encounters, which are likely to be similar in the telehealth context (Madson et al., 2014; Petersen et al., 2008; Power et al., 2017). These benefits include greater time efficiency and less need for repetition, improved reimbursement for telephone encounters in particular (which are billed by provider time), and the possibility of greater patient satisfaction when the patient can hear the learner accurately repeat the history they have just provided rather than being left "on hold" (Madson et al., 2014; Petersen et al., 2008; Power et al., 2017). Our participants noted the opportunities to participate in this method with telehealth increased the effectiveness of the visits. 'Precepting in the Patient's Presence' has been noted as especially useful for communication skills education as it provides opportunity to role model and observe the learner interacting with the patient.

There is general consensus that there needs to be education about the conduct of telehealth visits for early learners (Hovaguimian et al., 2021; Iancu et al., 2020), and our results suggest there is the same need for advanced learners. Beyond effectively orienting learners to the technology and the process, participants noted that being able to participate in the encounter also provided the opportunity to guide and deepen learners' understanding and skills in conducting telehealth visits. In addition, participating in telehealth visits allow preceptors to emphasize the limitations of telehealth visits by overtly addressing which patients and what complaints are not well suited to management via telehealth.

Noting that the necessary equipment (computer or smart phone) and sufficient internet data may preclude many lower-income patients from participating in a video encounter, while potentially limiting them to telephone encounters reiterates communication learning opportunities for specific patient care populations. Because differences in navigation of telehealth services has been noted with underserved patient populations, explicit opportunities exist for providers and learners offering telehealth to promote equity for patients of all demographics (Rodriquez, 2021).

Identification of potential learner autonomy issues while promoting effective communication is not unexpected. The literature reports learner discomfort with observation and/or precepting in the patient's presence often revolves around issues of learner autonomy and performance anxiety (Schopper et al., 2016). These issues should be taken into consideration when using methods described in this paper, to create a safe learning environment for preceptor participation in learner-patient encounters. For example, our participants'

comments reflect extant literature emphasizing that orientation should include explicitly explaining preceptor and learner roles in the visit and that it will be accomplished without compromising learner safety or autonomy. During the visit, learners can be tasked with orienting patients, even with the preceptor present, to signal that they lead the encounter. Preceptors should also resist interrupting or "hijacking" the encounter away from the learner (especially when they are a resident physician) while they are present on the call and provide teaching and feedback without undermining the learner's position.

Limitations and areas for future research

This is a pilot survey done when there was little direction in the literature to guide how to teach learners during telehealth encounters. Our results therefore reflect preceptors' perspectives during this early period in the pandemic when telehealth care was being increasingly developed and used. An opportunity exists to repeat this survey with more in-depth questions directed at specific telehealth teaching styles and models as they are created. Additionally, the number of participants working with medical students was small (due to the timing of this survey), providing little opportunity to compare approaches for working with early medical learners versus advanced learners. A significant majority of our participants were primary care providers, and future research should explore differences in practice between specialties, especially those outside of primary care. Additionally, future research could explore the impact of preceptor, learner and/or patient demographics on chosen approach and effectiveness of precepted telehealth visits. Other areas for future research include exploring preceptor, student, and patient preferences for telehealth at a time when in-person visits are viable alternatives. Further exploration of the impact of precepting approaches on other important clinical variables such as time efficiency, patient outcomes and satisfaction, and learner outcomes and satisfaction is needed.

Conclusions

There is general agreement that telehealth visits are a useful way of providing clinical care and will remain and increase as a legitimate provider-patient encounter type once the COVID-19 pandemic passes. Precepting telehealth visits effectively can offer preceptors an opportunity for observation and provide feedback to learners on their communication skills. Therefore, it remains important for clinical educators, residents, and medical students to consider how best to include learners in telehealth encounters and to find the most effective ways to educate medical residents and students on how to provide high-quality telehealth care. Our findings contribute to identifying the essential components of such a model including the importance of orienting learners to the telehealth visit and how both learner and preceptor will and can be involved in these visits either as observers, co-interviewers or in reviewing visit findings after the encounter. Our results identified potential advantages of telehealth visits related specifically to communication with patients, particularly increased ease and opportunity to observe learner interactions with patients and provide feedback on their communication skills. Telehealth precepting can allow for development and reinforcement of both core communication skills as well as those specific to telehealth encounters.

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Ethical approval

The institutional review boards at the University of Minnesota and University of Iowa determined this study was not human research.

Notes

A copy of the full survey is available on request to the authors.

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