Telehealth leaders' attitudes toward telemedicine provision of medication abortion:
A qualitative study

Prepared by:

Laura Fix, MSW

Kate Grindlay, MSPH

Jane W. Seymour, MPH

Bridgit Burns, MPH

Sarah T. Reiger, MPH

Daniel Grossman, MD

ABSTRACT

BACKGROUND

Medication abortion is a simple, non-surgical method used in nearly one-third of non-hospital abortions in the United States. Telemedicine for medication abortion provision has been shown to be safe, effective, and acceptable to patients and providers, with comparable clinical outcomes to in-person abortion provision. Despite the documented safety of telemedicine for medication abortion, 19 US states prohibit the use of telemedicine to prescribe medication for abortion remotely. The purpose of this study was to explore the knowledge and attitudes of telehealth organization leaders towards telemedicine for medication abortion and bans on this use, and to situate these restrictions in the context of other telemedicine services.

METHODS

We conducted in-depth interviews with 19 leaders of US telemedicine and telehealth organizations. Interviews were digitally recorded, transcribed, and analyzed using modified grounded theory methods.

RESULTS

A majority of participants were unfamiliar with the use of telemedicine for medication abortion provision or existing bans on its use. Once the model was described to participants, most felt that telemedicine was appropriate or well-suited for medication abortion provision. No participants supported bans on telemedicine for medication abortion, and most felt such bans could negatively impact the use of telemedicine for other health care services.

CONCLUSIONS

Telehealth leaders knowledgeable about the benefits and risks of telemedicine reported favorable opinions of telemedicine use for medication abortion provision, believing it to be an appropriate use for telemedicine, and generally opposed bans on it. These thought leaders play an important role in shaping telemedicine regulations and can help advance evidence-based policies for telemedicine provision of medication abortion.

BACKGROUND

Early medication abortion, wherein a patient takes medications to terminate a pregnancy, is a simple, highly effective non-surgical abortion method [1] that comprises 31% of non-hospital abortions in the United States [2]. There are few contraindications to medication abortion and eligibility is primarily based on gestational age and medical history [1].

Telemedicine is the provision of medical care for patients by providers using telecommunications technology such as telephone, internet, wireless, and satellite media [3]. Since its inception, telemedicine has seen increasing popularity and is now used by over 50% of all US hospitals [3]. In both the United States and other countries, telemedicine is used to provide medication abortion [4,5], and has been shown to be safe, effective, and acceptable to patients and providers. For example, in a telemedicine program in Iowa, women seeking medication abortion visit a participating clinic where an ultrasound is performed by a trained technician, information and counseling about medication abortion is provided, and standard informed consent is administered. The patient's medical history and ultrasound image are then uploaded to a secure server for a remote physician to review, and the physician has a discussion with the patient using secure, HIPAA-compliant video teleconference equipment. If the patient is eligible for a medication abortion, the physician enters a password into his or her computer that remotely unlocks a drawer in front of the patient containing the mifepristone and misoprostol tablets. The physician observes the woman swallow the mifepristone and gives final instructions for taking the remaining medication and for follow up [6].

Evaluation of this medication abortion telemedicine program in Iowa found that patients had clinical outcomes comparable to those who saw a doctor in person, with equivalent effectiveness and a low prevalence of adverse events (less than one percent) [6,7]. While both in-person and telemedicine patients reported high satisfaction, telemedicine patients were more likely to recommend the service to a friend [6]. Additionally, telemedicine introduction was associated with improved access to medication abortion for women in remote areas and more patients accessing abortion at earlier gestational ages, which is associated with fewer risks and lower costs for women [8-10]. Patients and providers in Iowa cited other advantages of telemedicine for medication abortion, including decreased travel time or distance and greater availability of locations and appointments [11]. In another qualitative study of health care provider experiences with telemedicine for medication abortion in Alaska, participants reported the service facilitated improved choice of procedure type for patients and promoted a patient-centered approach to treatment in which women could obtain local care sooner [12].

Despite the documented benefits and safety of telemedicine provision of medication abortion, 19 US states prohibit the use of telemedicine for this service [13]. Given this restrictive context, we sought to explore the knowledge and attitudes of telehealth organization leaders towards telemedicine for medication abortion and bans on this use, and to situate these restrictions in the context of other telemedicine services.

METHODS

We conducted a qualitative study with leaders of telemedicine and telehealth organizations in the United States regarding their knowledge of and attitudes towards telemedicine for medication abortion. Eligible participants held leadership positions (i.e., executive director, director of communications or policy, or another leading advocacy position) at organizations working in the telehealth or rural health fields. Potential participants were identified through internet searches and referrals by other participants. Participants provided verbal informed consent and received no compensation. The Allendale Investigational Review Board provided ethical approval.

Semi-structured 30-60 minute in-depth phone interviews were conducted between June 2014 and February 2015. Participants were asked about their opinions on appropriate uses of telemedicine generally, and their knowledge and opinions on the use of telemedicine for medication abortion provision and state-level restrictions on the practice. Participants were also asked whether they were aware of similar restrictions for other telemedicine services, and how, if at all, these restrictions could impact the use of telemedicine for other health services. Telemedicine for medication abortion provision was described as follows: "The Planned Parenthood affiliate in Iowa started offering medication abortion by telemedicine in 2008. An evaluation of the program was performed and three peer-reviewed articles have been published documenting the safety, effectiveness, and acceptability of telemedicine provision of medical abortion." Restrictions on telemedicine use for medication abortion were described as such: "In the past several years, [x number of states at time of interview] have passed laws to specifically ban the use of telemedicine to provide medication abortion. In addition, the Iowa Board of Medicine voted to implement regulations to prohibit the use of telemedicine for medication abortion, although this has been blocked by the courts."

Interviews were digitally recorded, transcribed verbatim, and coded using grounded theory methods [14]. Coding was performed using ATLAS.ti 6.2.28 (ATLAS-ti GmbH, Berlin). By participant request, one interview was not recorded and instead detailed notes were taken. A codebook was developed and codes were refined as additional themes emerged. Two investigators independently coded the interviews to ensure reliability. Quotations are identified in this manuscript by participant organizational affiliation type.

RESULTS

Participant background
Sixty-one organizations were contacted by study staff. No response was received from 26 organizations, 14 declined to participate, and two organizations initially responded but were then unable to be reached. Nineteen respondents were interviewed for a response rate of 31%. Organizational affiliations included public and private universities, telemedicine resource centers, private telehealth organizations, and health care institutions. Some participants worked in multiple roles or organizations, in a catchment area spanning several states or regions, or for national organizations. Respondents represented 21 organizations operating in 28 states and the District of Columbia.

Opinions of appropriate uses for telemedicine
Participants generally felt that services not requiring physical contact to be safely and effectively administered were more appropriate for telemedicine, while care highly dependent on physical contact, or where a patient preferred to speak directly with a provider, were less ideal use cases. As one participant from a private telehealth organization explained, "except for the kind of emergency care where a physician really needs to lay hands on a patient acutely, I can't think of anything that telemedicine is inappropriate for." Mental health (n=9), radiology (n=5), and dermatology (n=3) were highlighted most often as particularly good use cases of telemedicine. Surgery (n=4), and emergency consultation and evaluation (n=2) were identified as less appropriate use cases. Notably, most participants (n=11) indicated that there are useful applications for telemedicine to some extent for almost all medical specialties. Of those who characterized a type of care as a less appropriate application of telemedicine (n=16), most (n=9) affirmed that if research showed certain services could be safely and effectively administered via telemedicine, their opinion would likely change.

All participants who commented directly on the future role or use of telemedicine (n=18) expected the use of telemedicine in the United States to increase. A majority (n=13) framed telemedicine as a solution to geographic barriers and health care provider shortages, suggesting that telemedicine could address care integration issues and ease stress from increased patient load. One said, "The shortage of doctors nationwide in itself is already impacting the delivery of medical services…. Telemedicine is the only answer at this point in time, and it's going to be necessary on the part of all the states and their medical boards to look at how to incorporate it, how to plan for it, and how to utilize it effectively in the proper delivery of service" (private telehealth organization).
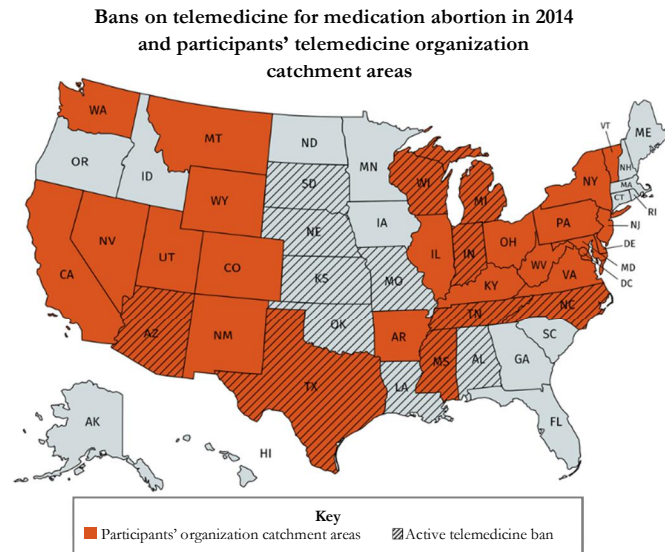
Several participants (n=6) expected that telemedicine would become central to health care delivery because of its convenience, improved patient outcomes, and increased provider availability. They thought it would become "integral" or "embedded in the standard health care delivery system" and "one of the most important ways that patients get care." Only one participant felt telemedicine would expand solely as a complement to in-person care rather than a primary means of delivering health care. This participant, who worked with a private health care institution, expected that it would not replace other services but would be used for "care coordination for complex patients" or "long-term chronic disease management."

Knowledge and opinions of medication abortion provision via telemedicine
Despite most participants (n=16) reporting a history of involvement with telemedicine in obstetrics, gynecology, or reproductive health, such as remote maternal-fetal medicine or telecolposcopy, many (n=9) were unfamiliar with telemedicine for medication abortion. One respondent from a university with telemedicine experience in obstetrics and gynecology stated, "I don't think that was available—I don't know." Several (n=5) were familiar with telemedicine for medication abortion, but did not know of practitioners actively using it. Five additional participants were familiar with telemedicine for medication abortion and aware of health care providers using this model. Of these, one was familiar with this use of telemedicine, but required clarification about the difference between medication abortion and emergency contraception. Participants familiar with the model's use (n=10) had worked for organizations with projects

in obstetrics, gynecology, or reproductive health, and all but one worked nationally or in a state with an active ban on telemedicine for abortion.

The vast majority of participants (n=18) felt that telemedicine was appropriate or well-suited for medication abortion provision. One participant declined to comment on the appropriateness of telemedicine for medication abortion because she was not an expert in that area of care. As with other medical services, respondents reported that telemedicine would improve access and ease service provision for medication abortion. One participant from a university characterized it as a "very good use case for telemedicine" because it "saves people a trip, it allows people who might

Bans on telemedicine for medication abortion in 2014 and participants' telemedicine organization catchment areas

Key
■ Participants' organization catchment areas   ▨ Active telemedicine ban

Map reflects active bans on telemedicine for medication abortion in June 2014 [15]. Enjoined legislation is not reflected.

not have easy access to that kind of specialty care to get it in a much more straightforward way." Many participants identified similarities to telemedicine use in other specialties. As one participant from a private health care institution explained, "It's not any different than cardiology or pulmonary medicine or nutrition or behavioral health or medical genetics."

A few of these respondents (n=3) stated that their support for telemedicine for medication abortion was contingent on meeting established standards of in-person care, including patient education, consent, and safety precautions. Two of these participants who were previously unfamiliar with telemedicine for medication abortion reported concerns about safety and the ability of providers to verify patient identity and ensure the medications would be taken by the patient herself. Of these, one respondent from a telehealth resource center expressed hesitation because the service was abortion-related, stating, "When you first spoke about medical abortions being done via telemedicine, I had a wall go up that said, no, that's not appropriate. But how is it really different from mental health training? And that's what I'm trying to wrap my mind around." Another respondent from a private health care institution supported the use of telemedicine for medication abortion, but reported that, as a parent, she would be concerned that an adolescent might "be able to do this and receive [an abortion] without my knowledge."

Knowledge and opinions of telemedicine abortion restrictions
Only six participants had any knowledge of federal or state restrictions on telemedicine for medication abortion. The remaining 13 participants worked nationally or in states with an active ban. No participants supported bans on telemedicine for medication abortion, and the vast majority (n=16) opposed them. One participant refrained from sharing an opinion about bans on telemedicine for this service as they were unfamiliar with the standard of care. Two remaining participants, who were concerned about safety, patient verification, and ensuring the medications would be taken by the patient herself, did not support banning

telemedicine for medication abortion. One explained that despite reservations, "it gives services to people who are really disenfranchised…. So, in that aspect, telemedicine is a good thing" (private health care institution). The other explained that "as long as checks and balances are in place, if the patient has physically been seen at a clinic," there is no reason to require patients to be in the physical presence of a physician (telehealth resource center). Most characterized procedure- or specialty-specific limitations on telemedicine as problematic and an overreach by medical boards or legislatures. One explained, "It certainly oversteps [legislatures'] bounds because they shouldn't be telling the health care provider what they can or cannot do" (private telehealth organization).

Many interviewees (n=9) believed bans were designed to restrict abortion access rather than regulate telemedicine. One respondent from a private telehealth organization described these restrictions as "arbitrary," and another from a university suggested they are based on political opposition to abortion rather than medical evidence:

> *It shouldn't be a legislative issue. It's a medical issue.... It's not being done because it makes sense or has anything to do with the safety and well-being of the woman as a patient. It's simply an attempt to keep women from having access to abortions.*

The majority (n=13) believed restrictions on telemedicine for medication abortion could impact other telemedicine uses. One respondent from a university suggested that because of existing bans, "it would therefore become easier to implement bans on the use of telemedicine for other medical services, using the abortion ban as a precedent." In another participant's state, concerns about medication abortion provision resulted in pushback against legislation to expand Medicaid reimbursement for telehealth; the interviewee explained, "[the state] legislature had somebody throw a wrench in a plan to expand Medicaid…. Somebody raised the specter of, this is going to make it possible to provide teleabortion" (telehealth resource center). In contrast, three participants thought restrictions were unlikely to impact other telemedicine services, and three were uncertain about the potential effects. One suggested: "I don't think that a law that restricts the use of the abortion pill is likely to have an effect or to have a fall-out effect on the provision of, let's say, psychiatric care by videoconference" (university).

Restrictions on other telemedicine services
More than half of participants (n=12) indicated that telemedicine for other medical specialties has not been singled out for restrictions in the same way as medication abortion. Instead, the majority (n=17) identified ways that the broader field of telemedicine has experienced restrictions, including requirements that patient-provider relationships be established in person, restrictions on prescribing medication remotely without an established patient-provider relationship, and remote prescribing of controlled substances. Participants generally felt restrictions on prescribing controlled substances were a way to limit access to a health care service and that, similar to bans on medication abortion, they were not based on the appropriateness or safety of telemedicine for delivery of that service. One respondent from a telehealth resource center stated, "That concern that somehow telemedicine is going to make it too easy to get the wrong stuff, the bad stuff. That concern has been around…since the beginning of the war on drugs…. There are certain kinds of things we really don't want to have good access to, like narcotics and abortion pills."

Seventeen participants had heard more broadly about pushback against telemedicine for other health services due to a perceived need for a physical exam to be performed. One participant was unfamiliar with this concern being raised for other services, and one did not respond directly to this question. Of those familiar with this argument being made for other services, four emphasized that telemedicine is a tool through which patient information can be obtained and used to inform care, and that its use does not alter the quality of the care already being provided, with one likening it to a review of a medical chart. Two felt that telemedicine technology allows providers to conduct the equivalent of an in-person exam, while another indicated that in select circumstances in-person visits may be required, but "in 99% of the cases, it's just absolutely not necessary" (telehealth resource center). Several participants (n=4) indicated that concerns about in-person visits are "uninformed," not supported by the literature, and are "misguided." Others (n=5) felt that these requirements were unnecessary and emphasized that they should not be used to limit telemedicine use. Another did not express an opinion, but stated only that they were familiar with this concern in the telemedicine field.

Participants also reported that variation in state-level telemedicine policies resulted in inconsistencies in telemedicine practice nationwide. Lack of uniform policy for insurance reimbursement, professional licensing portability, in-person visit requirements, and limitations on the practice of out-of-state clinicians were identified as common barriers to telemedicine.

DISCUSSION

The telehealth leaders interviewed for this study reported favorable opinions of telemedicine for medication abortion provision and none supported targeted regulation of this service. In general, participants cited improved quality of care and accessibility of services as the primary benefits of using telemedicine. They considered telemedicine to be appropriate across a wide range of medical specialties, and most found medication abortion to be an appropriate application of telemedicine. Identified barriers to using telemedicine for medication abortion were primarily policy or legislative roadblocks rather than clinical or patient safety issues. Many thought such bans were intended to limit abortion access rather than protect patient safety. Others characterized the bans as unsupported by medical evidence and a misuse of legislative or medical board authority. Most participants believed targeted bans on medication abortion could have a broader impact on the field and limit the use of telemedicine for other medical services.

Two respondents expressed concern about telemedicine for medication abortion related to the ability of providers to verify patient identity and ensure medications would be taken by the patient, concerns that are not specific to medication abortion and must be accounted for in all telemedicine services. Similarly, one participant's concern about minors' access to abortion without parental consent relates to abortion access broadly, not just to telemedicine provision of abortion. Many participants felt benefits generally attributed to telemedicine use, such as improved quality of patient care, increased access to services, and improved convenience, could benefit women facing barriers to accessing abortion care.

The majority of participants had been unfamiliar with state-level bans on telemedicine for medication abortion before the study interview, even though 15 states had active bans in place at the start of study recruitment [15] and all unfamiliar respondents worked nationally or in states with bans. This lack of awareness on the topic in the telemedicine community suggests a need for more education and involvement of telemedicine experts in the debate regarding abortion-specific telemedicine policy. Additionally, the expertise of leaders in the fields of telehealth and rural health can help inform potential solutions to policy, program development, and implementation barriers faced by providers of telemedicine for medication abortion. Involving telehealth thought leaders in the development of policies around telemedicine for medication abortion may help ensure that scientific evidence is used to inform legislation.

This study has several limitations. Participants' personal opinions about abortion may have made them more likely to participate, as only 31% of organizations responded. Furthermore, as a qualitative study, these results are not generalizable to the knowledge and opinions of all leaders in the telehealth field. Finally, most participants were unaware of state-level bans on telemedicine for medication abortion, and thus our results capture their initial responses upon learning about the bans; their limited knowledge may have impacted the depth and nature of their responses.

CONCLUSIONS

This study demonstrates that leaders knowledgeable about the benefits and risks of telemedicine believe it to be an appropriate way to provide medication abortion and generally oppose bans on its use for this purpose. These thought leaders play an important role in shaping telemedicine regulations and can help advance evidence-based policies for telemedicine provision of medication abortion.

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