Remote Delivery in Reproductive Health Care: Operation of Direct-to-Patient Telehealth Medication Abortion Services in Diverse Settings

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VISUAL ABSTRACT

Conflicts of interest: Dr Godfrey and Dr Bennett receive honoraria as trainers in the Nexplanon Clinical Training Program from Organon, outside the submitted work. Other authors report none.

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ABSTRACT

PURPOSE Established models of reproductive health service delivery were disrupted by the coronavirus disease 2019 (COVID-19) pandemic. This study examines rapid innovation of remote abortion service operations across health care settings and describes the use of telehealth consultations with medications delivered directly to patients.

METHODS We conducted semi-structured interviews with 21 clinical staff from 4 practice settings: family planning clinics, online medical services, and primary care practices—independent or within multispecialty health systems. Clinicians and administrators described their telehealth abortion services. Interviews were recorded, transcribed, and analyzed. Staff roles, policies, and procedures were compared across practice settings.

RESULTS Across all practice settings, telehealth abortion services consisted of 5 operational steps: patient engagement, care consultations, payment, medication dispensing, and follow-up communication. Online services and independent primary care practices used asynchronous methods to determine eligibility and complete consultations, resulting in more efficient services (2-5 minutes), while family planning and health system clinics used synchronous video encounters requiring 10-30 minutes of clinician time. Family planning and health system primary care clinics mailed medications from clinic stock or internal pharmacies, while independent primary care practices and online services often used mail-order pharmacies. Online services offered patients asynchronous follow-up; other practice settings scheduled synchronous appointments.

CONCLUSIONS Rapid innovations implemented in response to disrupted in-person reproductive health care included remote medication abortion services with telehealth assessment/follow-up and mailed medications. Though consistent operational steps were identified across health care settings, variation allowed for adaptation of services to individual sites. Understanding remote abortion service operations may facilitate dissemination of a range of patient-centered reproductive health services.

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INTRODUCTION

In 2020, the coronavirus disease 2019 (COVID-19) pandemic resulted in nationwide changes in health service delivery, spurring broad shifts toward remote care and telehealth models to reduce in-clinic interactions.[1] Following this trend, primary care practices offering reproductive health care leveraged online consultations and patient-centered clinical guidelines to innovate ways to provide care, including video prenatal visits, facilitating self-removal of intrauterine devices, and self-injection of long-acting contraception options.[2-4] Among these innovations, telehealth medication abortion services emerged as a model for expanding reproductive health services within primary care settings in the United States.

New evidence-based medical protocols helped make remote abortion options possible in the United States by no longer requiring in-clinic exams, blood tests, or ultrasounds for gestational dating and confirming intrauterine pregnancy for most early pregnancy terminations.[5,6] Gestational age and other contraindications could now be ascertained through patient history used for remote consultations.[7,8] Additionally, the Food and Drug Administration's restrictions on mifepristone—1 of the

2 medications used to terminate an early pregnancy—that required clinicians to stock and dispense the medication in person to their patients, were loosened by court injunction and later permanently removed.[9,10] The simplification of protocols and removal of federal regulations allowed licensed clinicians (in states that do not prohibit abortion using telemedicine) to mail medication abortion pills directly to patients or to contract dispensing with mail-order pharmacies.[11]

Remote abortion care is a safe and effective alternative to in-clinic care for early pregnancy termination,[12-14] with 99% of patients successfully terminating their pregnancies via telemedicine compared with 98% of patients who used in-clinic services.[15] Patients report high degrees of satisfaction and equal or greater privacy when compared with in-clinic options.[16-18] Additionally, clinicians report preferring the flexibility and increased access to care afforded by telehealth, as well as the ease of integrating into existing clinic infrastructure.[19,20]

Moreover, remote abortion care has the potential to reduce the harmful effects of barriers to care.[21] First trimester abortion care is an essential health care service that is sought by 1 in 4 US women by the time they reach age 45, yet 89% of US counties do not have facilities that provide abortion care, leaving many without abortion services.[22,23] As a result, people needing abortion care travel, on average, 33 miles each way for services, with almost one-fifth having to travel 100 miles or more each way.[24] The farther patients need to travel, the greater the costs associated with seeking care and the longer the delay in access to abortion. While early terminations are very safe, receiving care later in pregnancy can lead to greater complications.[24-28] The cost of services is an additional barrier. The federal government and 34 state governments and the District of Columbia prohibit the use of public funds to pay for abortion, except for cases of rape, incest, or to save a pregnant person's life.[29,30] Thus, most persons seeking abortion services must shoulder the cost.[31] Compared with in-clinic services, telemedicine reduces the cost to the clinic by eliminating unnecessary laboratory and clinical tests, off-loading intake to non-medical staff, and reducing face-to-face clinician time.[32-34]

Telehealth medication abortion services offer a simplified model of care that is well within the scope of family medicine and allows for early abortion care to be integrated into existing primary care practices.[35] Though family physicians provide 20% of first trimester abortions nationally, only 3% provide abortion within their primary care practices.[36-38] Inclusion of abortion services in primary care is a critical step toward fulfilling the shared principles of primary care by offering accessible, equitable, comprehensive, person-centered care across the lifespan.[39] Proliferating remote reproductive health services warrant careful and systematic evaluation so that best practices can be identified, documented, and disseminated widely for broad adoption. This study evaluates telehealth abortion services established during the 2020 COVID-19 pandemic and examines their operation by primary care practices in different health care settings.

METHODS

We sought to identify and describe the operational steps for providing remote medication abortion care and to compare service models of different practice settings. This study is part of the University of Washington's Access, Delivered initiative aimed at evaluating telehealth medication abortion services and disseminating best patient-centered practices. This research was reviewed and given a determination of exempt status by the University of Washington Institutional Review Board.

This study builds on previous work that examined factors associated with the successful implementation of such services.[20] The study sample, participant recruitment, and data collection methods are described in detail elsewhere.[20] Briefly, we conducted 21 semi-structured, in-depth interviews in November and December of 2020 with clinicians and administrators involved in the implementation of a telehealth abortion service (4) or directly providing this service to patients (17). We defined telehealth abortion services as those that utilized a synchronous or asynchronous remote clinician-patient consultation with medications mailed directly to patients and operating outside of a research study within the United States. To our knowledge we recruited all clinic sites that met inclusion criteria. The clinicians we interviewed were mostly family physicians or family nurse practitioners from 15 service delivery sites representing 4 types of practices: (1) independent primary care practices (independent practices), (2) telemedicine only, web-based health care clinics (online services), (3) specialized family planning clinics (family planning clinics), and (4) primary care clinics within multispecialty health systems (health system). Within each site, we employed snowball sampling, asking each interviewee about other individuals at their site that could offer additional information or a different perspective on the implementation or delivery of the telehealth service. A total of 24 individuals were invited to an interview (2 never responded, 1 declined). A gift card of $25 was offered to each participant. Of the 15 sites, 1 was excluded from this analysis because the interviewee had attempted but not operationalized a telehealth abortion service.

Interviews were conducted by A.E.F., a PhD student in public health with experience working in abortion policy and qualitative research, and M.R.R., a research coordinator. Conversations via HIPAA-compliant video conferencing averaged 70 minutes and consisted of questions regarding interviewee involvement with telehealth abortion, with a focus on steps taken to implement the service and day-to-day operations. Relevant to this analysis, interviewees were asked about clinic policies and procedures, staff roles and responsibilities, communication among clinic staff and with patients, and time and resource inputs for service delivery. Throughout the process, the study team met regularly to discuss interview

content and interviewer field notes to improve the interview guide for clarity and focus and to discuss data saturation.

Analysis

Building on the previous qualitative analysis, a subset of codes relevant to service operation were excerpted, analyzed, and organized based on the principles of service operations management.[40] Descriptive statistics were used to describe the 14 service delivery sites offering telehealth abortion.

RESULTS

We reviewed 20 interviews with clinicians and administrators from 14 different service delivery sites (Table 1). Seven of the sites were primary care practices—5 smaller independent practices and 2 larger multispecialty health systems. Most interviewees were involved with both the establishment of the new telehealth services as well as the day-to-day operations and care provision.

Steps for Providing Service

All health care settings had similar operational procedures for remote medication abortion services, entailing 5 steps: patient engagement, patient consultation, payment, medication dispensing, and patient follow-up communication (Figure 1). Patient engagement included marketing and patient recruitment as well as screening for appropriateness of remote care. Patient consultations were conducted either through a store-and-forward asynchronous method, known as an e-visit; a synchronous (live) telephone or video conversation; or a combination of asynchronous and synchronous methods. Sites accepted public and private insurance payments as well as cash payments. Practices or mail-order pharmacy partners (having an established agreement with the supervising clinician) mailed abortion medications directly to patients at their preferred address. Finally, patient follow-up communication took various forms, ranging from no follow-up to automated robot texting with patients to a clinician telephone call at varying intervals after services were rendered.

Though all 5 steps were consistent across practices, methods varied across clinic sites and practice settings. The following is a summary of the variation and association of certain approaches with different practice settings.

Patient Engagement

Online services utilized the most direct advertising to potential patients since telehealth abortion is their primary service offering, while independent primary care practices and family planning clinics used moderate amounts of advertising (Table 2). Marketing tactics included Google Ads, social media postings, search engine optimization, and billboards. Health systems did not advertise their abortion services.

Telehealth abortion services used their websites to inform patients about the remote medication abortion option, screen them for eligibility, and schedule appointments. Patients entered medical information into automated HIPAA-compliant questionnaires, which were reviewed for appropriateness of remote care using an automated algorithm or asynchronous clinician review. If approved, patients were automatically scheduled for consultations with a clinician (if required). If not approved, additional communication between the clinician and patient was initiated to further clarify medical history information or refer patients to alternative in-clinic abortion services when necessary. All practice settings followed this approach excluding health systems, which screened interested abortion patients via telephone and scheduled telehealth consultations or in-clinic appointments as appropriate and preferred by the patient.

Patient Consultation

Online services and independent primary care practices relied on e-visits or asynchronous messaging methods for communication between clinicians and patients. Family planning and health system clinics used synchronous telephone or video encounters. During the consultation, regardless of method, clincians confirmed patient eligibility for remote abortion services, shared information about the process, and answered patient questions. On average, consultations required 7-20

Table 1. Characteristics of Service Delivery Sites (N = 14) By Clinic Size and Interviewee Roles in Clinic and Service Operations

Site No.	Clinic Size[a]	No. Interviewed	Role in Clinic	Role in Abortion Service
Independent primary care practices				
1	1	1	FP	OSD
2	1	1	FP	OSD
3	1	1	FP	OSD
4	2-10	1	FP	IMP
5	2-10	1	FP	IMP
Telemedicine-only health care clinics				
6	2-10	2	NP	OSD
7	11-50	1	ADM	OSD
8	1	2	FP, ADM	OSD
Specialty family planning clinics				
9	2-10	1	FP	OSD
10	1	1	FP	OSD
11	11-50	5	FP, NP, ADM	OSD
12	1	1	FP	IMP
Multispecialty health systems				
13	>50	1	FP	OSD
14	>50	1	FP	OSD

Note: The implementation role includes clinicians and administrators involved in the implementation of a telehealth abortion service. The operations and service delivery role includes clinicians or administrators who are involved in the day-to-day operations of providing service to patients.

FP = family physician; NP = nurse practitioner; ADM = administrator; OSD = operations, service delivery; IMP = implementation

[a] Clinic size is based on the number of clinicians in the practice.

minutes of clinician time, with synchronous visits taking longer for the patient visit and chart documentation (10-30 minutes), and asynchronous e-visits requiring less clinician time (2-5 minutes). Licensed clinicians provided remote abortion care, although care coordinators at some clinics completed preliminary screening, counseling, or provided basic information about medication abortion before the clinician consultation. Common telehealth software used across clinic types included Doxy.me Inc and DocuSign Inc. Other platforms included Kareo, Rhinogram, Phone.com, and Epic Systems Corporation.

Payment

For payment options, the online services did not accept insurance, requiring cash payment from patients. The other 3 clinic types accepted public and private insurance options. Examination of cash costs to patients showed independent primary care practices offered patients the lowest prices, online services fell in the middle, and family planning clinics had the highest prices. The primary care practices within health systems primarily served Medicaid recipients (in states where abortion services are covered) and were unaware of cash payment as an option. Independent primary care, online services, and family planning clinics often coordinated with independent not-for-profit organizations, such as abortion funds, that raise money to cover out-of-pocket costs (partially or completely) for patients unable to pay for services.

Medication Dispensing

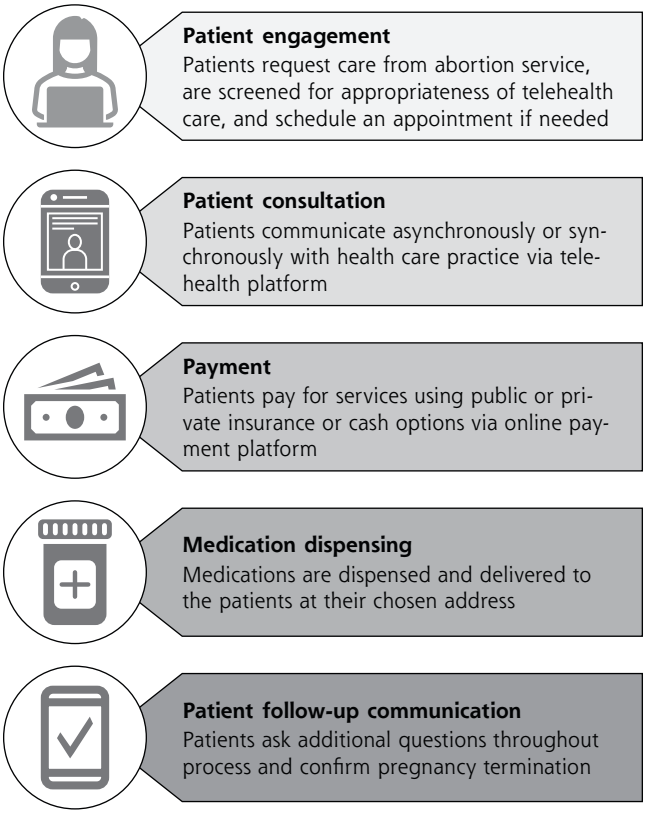
To comply with the Food and Drug Administration regulations restricting the distribution of mifepristone through retail pharmacies, all remote abortion services mailed medications directly to patients' addresses, and all but online services offered the option to pick up medications in person. Some independent primary care practices dropped off medications when patients were nearby and agreed to a home delivery.

When mailing mifepristone and misoprostol, family planning and health system clinics shipped medications from clinic stock or internal pharmacies. Independent primary care practices and online services often partnered with mail-order pharmacies that stored and shipped medications on behalf of the clinician after patient consultations were completed and approved.

Patient Follow-up Communication

Patients could follow-up with service sites as needed. All practices had an option for immediate assistance before and after taking the medications, with clinicians or support staff available to answer patient questions. Online services and independent practices offered follow-up communication via text or automated chatbots that answered patients' frequently asked questions. Most sites offered, but none required, scheduled synchronous video visits or follow-up calls from clinicians or support staff between 1 to 4 weeks after rendered services. Clinic personnel conducting synchronous follow-up visits assessed completion of abortion, answered patient questions, and, in some cases, offered contraceptive prescriptions and services (Table 2).

Figure 1. Five steps used to provide remote medication abortion service across health service settings.



Integration of Telehealth Medication Abortion Service

Most sites integrated telehealth medication abortion services into existing clinical offerings. Health systems developed telehealth medication abortion services to supplement existing in-clinic medication abortion services and telemedicine services for other appointment types. Nearly all independent practices did not previously offer medication abortion as a part of their practice and began to offer both remote and in-person abortion care simultaneously. Most online services did not exist before the pandemic and only initiated remote abortion services.

DISCUSSION

We found that delivery of medication abortion services via telemedicine was an efficient model for offering early pregnancy termination and could be tailored to function successfully in a variety of clinical settings staffed by primary care clinicians. All study sites followed 5 steps for care provision:

Table 2. Components of the 5 Steps for Remote Medication Abortion Service Operation Across 4 Health Care Settings (N = 14)

	Practice Settings							
Operational Factor	**Independent Primary Care Practices (n = 5)**		**Telemedicine-Only Health Care Clinics (n = 3)**		**Specialized Family Planning Clinics (n = 4)**		**Primary Care in Multispecialty Health System (n = 2)**	
Patient engagement								
Importance of marketing[a]	Moderately important		Very important		Moderately important		Unimportant	
Mechanism for recruitment[b]	Website		Website		Website, call clinic		Internal referral, call clinic	
Method of screening	Questionnaire		Questionnaire		Questionnaire		Call clinic	
Scheduling consultation[c]	Automated		Automated		Automated		Call clinic	
Patient consultation								
Technology platforms used	Doxy.me		Kareo, Rhinogram		DocuSign, Doxy.me, Phone.com		DocuSign	
Type clinic staff[d]	Clinician		Care coordinator, clinician		Care coordinator, clinician		Clinician	
Type of visit[e]	Synchronous	Asynchronous	Synchronous	Asynchronous	Synchronous	Synchronous		
Duration, min[e]	10-30	2-5	10-20	2-5	20-30	10-30		
Payment								
Source of funds[g]	Insurance, cash		Cash		Insurance, cash		Insurance,	
Cash cost, $	70-150		199-375		500-575		No Data	
Medication dispensing								
Method of delivery[h]	Mailed, pick up, drop off		Mailed		Mailed, pick up		Mailed, pick up	
Type of pharmacy	Mail order, clinic stock		Mail order		Clinic stock		Mail order, health system pharmacy	
Follow-up communication								
Type[e]	Synchronous		Asynchronous		Synchronous		Synchronous	
Timing after medication taken	2-3 d		3 d and 4 wk		1-2 wk		1 d and 4 wk	

[a] Measured using a Likert Scale: 1 = unimportant; 2 = slightly unimportant; 3 = moderately important; 4 = important; 5 = very important.
[b] Mechanisms: website = patient navigates to clinic website to request abortion service; internal referral = primary care clinician refers patient to in-house abortion service; call clinic = patient calls clinic to discuss abortion service.
[c] Automated = website system automatically proceeds to scheduling options.
[d] Clinician = a family physician or nurse practitioner; care coordinator = member of abortion care team who screens and counsels patient before meeting a clinician.
[e] Synchronous = a live, scheduled telephone or video call; asynchronous = a non-live e-mail, chat, or messaging function, also known as an e-visit.
[f] Duration of visit = total time for clinician to meet with patient and complete all documentation.
[g] Insurance = private or federal/state insurance plan; cash = patient pays with cash or credit.
[h] Mailed = medications are mailed directly to a patient; pick up = patient picks up medication from clinic; drop off = clinician personally delivers medications to patient.

patient engagement, patient consultation, payment, medication delivery, and patient follow-up communication. Though the overarching structure of services remained consistent, each step of care provision was adapted to specific care settings, clinic practices, local regulatory landscapes, and the needs of the unique patient populations. For example, primary care clinics within multispecialty health systems offered only synchronous options for screening, scheduling, and patient-clinician consultations, while online services offered both asynchronous and synchronous consultation options. These 2 types of remote consultations allow for flexibility in clinician scheduling with the potential for greater convenience and efficiency. Furthermore, the diversity in options for medication delivery—mail, pick up, or delivery—allows service sites to leverage existing infrastructure (on-site pharmacies or medication dispensing protocols) or outsource to partner pharmacies. These findings demonstrate the feasibility of offering the service in a variety of primary care settings and highlight the potential variations that can be made to adapt the service to different clinical practices.

In addition to being offered in distinct settings, remote abortion services were also adapted to, and operated within, existing non-obstetric clinical practices, primarily by family physicians and advanced practice clinicians. In the face of limited access to safe and timely abortion services in the United States, family medicine clinicians can integrate simplified abortion services into their primary care practices to offer comprehensive reproductive health care. This way, practices can meet the diverse needs of their patients and authentically uphold the principles of primary care. Different approaches to remote services in primary care settings may also be preferrable to patients and better meet their needs.

Future research should examine patient perceptions of, and experiences with, these various service approaches in different health care settings.

Finally, it is of note that asynchronous models of medication abortion care were more efficient, requiring only 2-5 minutes of clinician time, compared with those using synchronous video encounters, needing 10-30 minutes for the patient visit and associated chart documentation. Since the majority of patients must pay for abortion services out-of-pocket, reducing face-to-face time with clinicians has the potential to reduce the direct cost of the service, a documented barrier to care. Additional research is needed to better understand the cost of providing abortion services and compare service models for cost savings to practices and patients.

CONCLUSIONS

Comprehensive reproductive health services are essential to providing primary health care, and telehealth service options offer an effective, efficient, and, in many cases, preferred mechanism for care delivery. This study examined remote medication abortion services as a case study for understanding how reproductive health services can be implemented quickly and adapted to various health care settings, offered remotely, and, ultimately, improve access to care. Given the documented success of remote abortion services, clinicians in all settings should consider ways that telehealth medication abortion can be incorporated into their primary care practices to offer comprehensive reproductive health services. Principles of this approach should also be considered for other medical services that are not easily delivered in-person, have limited clinician access, or for which remote care options would increase patient centeredness.

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Key words: telehealth; telemedicine; service operation; remote service delivery; abortion; medication abortion; pregnancy, unwanted; pregnancy, unplanned

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