# Effectiveness and Acceptability of Medical Abortion Provided Through Telemedicine

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**OBJECTIVE:** To estimate the effectiveness and acceptability of telemedicine provision of early medical abortion compared with provision with a face-to-face physician visit at a Planned Parenthood affiliate in Iowa.

**METHODS:** Between November 2008 and October 2009, we conducted a prospective cohort study of women obtaining medical abortion by telemedicine or face-to-face physician visits. We collected clinical data, and women completed a self-administered questionnaire at follow-up. We also compared the prevalence of reportable adverse events between the two service delivery models among all patients seen between July 2008 and October 2009.

**RESULTS:** Of 578 enrolled participants, follow-up data were obtained for 223 telemedicine patients and 226 face-to-face patients. The proportion with a successful abortion was 99% for telemedicine patients (95% confidence interval [CI] 96–100%) and 97% for face-to-face patients (95% CI 94–99%). Ninety-one percent of all participants were very satisfied with their abortion, although in multivariable analysis, telemedicine patients had a higher odds of saying they would recommend the service to a friend compared with face-to-face patients (odds ratio, 1.72; 95% CI 1.26–2.34). Twenty-five percent of telemedicine patients said they would have preferred being in the same room with the doctor. Younger age, less education, and nulliparity were significantly associated with preferring face-to-face communication. There was no significant difference in the prevalence of adverse events reported during the study period among telemedicine patients (n=1,172) (1.3%; 95% CI 0.8–2.1%) compared with face-to-face patients (n=2,384) (1.3%; 95% CI 0.9–1.8%) (82% power to detect difference of 1.3%).

**CONCLUSION:** Provision of medical abortion through telemedicine is effective and acceptability is high among women who choose this model.

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**LEVEL OF EVIDENCE: II**

Mifepristone was approved by the U.S. Food and Drug Administration in September 2000. Early medical abortion using mifepristone with misoprostol is effective and highly acceptable to U.S. women with some preferring it over vacuum aspiration.[1–3] Medical abortion is not a surgical procedure and can be offered by nonspecialist clinicians,[4] a fact that led some to believe that its availability would improve access to abortion services in the United States. However, a recent analysis found that almost all medical abortion-only providers were located within 50 miles of a large-volume surgical abortion provider.[5]

In approximately 15 states, certified nurse–midwives, physician assistants, and nurse practitioners are permitted to provide medical abortion.[6] In the remaining states, laws that limit provision of abortion to physicians have been applied (or assumed to apply) to medical abortion as well.

Telemedicine, the delivery of health care services at a distance using information and communication technology, has been used in many fields of medicine to improve access to services. For example, telemedicine has been used to provide specialist consultation to primary care services and to deliver rural outpa-

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tient care, generally with patient outcomes that are comparable to in-person treatment.[7] In 2008, Planned Parenthood of the Heartland, a clinic network located in Iowa that provided 74% of all abortions in the state that year,[8] had 17 clinic sites. Three of these clinics had an on-site physician, whereas an additional three sites intermittently offered abortion care when a physician traveled to the clinic; the remaining 11 clinics did not provide abortions. In June 2008, Planned Parenthood of the Heartland launched a program to provide medical abortion using telemedicine at clinic sites not staffed by a physician to improve access to early abortion and reduce physician travel to outlying clinics. The objective of this study was to estimate the effectiveness and acceptability of the telemedicine provision model compared with the standard practice of a face-to-face visit with a physician.

## MATERIALS AND METHODS

Between November 2008 and October 2009, women seeking medical abortion at six Planned Parenthood of the Heartland clinics in Iowa were invited to participate in the study. At four sites, medical abortion was offered only through telemedicine; at one site it was offered only with a face-to-face physician visit; and at one site both models were offered, depending on physician availability. Women seeking abortion at Planned Parenthood of the Heartland called a central call center, which gave them information about the nearest clinic and soonest appointment and informed them whether the service would be provided by telemedicine or not, and women selected the appointment they preferred. In the areas served by the telemedicine clinics, there was no other abortion clinic closer than the closest physician-staffed Planned Parenthood clinic. Once at the clinic, women who chose medical abortion and were eligible for the method (including being pregnant at 63 days gestation or less and not having other standard contraindications[9]), were 18 years old or older, able to speak English, and able to give informed consent were eligible to participate in the study.

Clinical information was collected at the participants' first clinic visit, including demographic information and gestational age according to ultrasonography. Participants were given the standard medical abortion regimen at the clinics: 200 mg mifepristone administered orally followed 24–48 hours later by 800 $\mu$g misoprostol administered buccally at home.[10] All women had ultrasonography performed by a trained technician, received information about medical abortion, and underwent standard informed consent for the abortion. A physical examination was not routinely done, consistent with the standard of care.[9] For face-to-face visit patients, one of two physicians reviewed the patient's medical history and ultrasonographic images and had a brief discussion with the patient. If the patient was eligible for a medical abortion, the physician handed her the mifepristone and misoprostol tablets, observed her swallow the mifepristone, and gave her final instructions. For those who received services through telemedicine, clinic staff uploaded the patient's medical history and ultrasonographic image to a secure server for the physician to review. One of the same two physicians then had a discussion with the patient using video teleconference equipment that was linked through a dedicated Multiprotocol Label Switching data connection. If the patient was eligible for medical abortion, the physician entered a password into her computer that remotely unlocked a drawer in front of the patient containing the mifepristone and misoprostol tablets. The physician observed her swallow the mifepristone and gave her final instructions through the video teleconference.

Women were scheduled for a follow-up visit within 2 weeks after receiving mifepristone. Pelvic ultrasonography was performed at follow-up to confirm completion of the abortion. If the abortion was incomplete, women were given the option of expectant management, additional misoprostol, or vacuum aspiration; ongoing pregnancies were treated with vacuum aspiration. If a telemedicine patient required a nonemergent vacuum aspiration, she was scheduled at a physician-staffed clinic for the procedure. If the abortion was not complete at the time of this visit, another visit was scheduled. Clinical information was collected at each follow-up visit, including the ultrasonographic result, any medications given, and whether a vacuum aspiration was performed. Effectiveness of medical abortion was defined as the proportion of women with a complete abortion not requiring a surgical procedure, including vacuum aspiration.

Once the abortion was complete, participants were asked to fill out a self-administered questionnaire focusing on their experience with the abortion service, including satisfaction with the service they received. If participants did not return for follow-up, they were contacted at least three times by phone and once by mail to schedule either an in-person follow-up visit or a telephone interview to complete the questionnaire. Information on adverse events was collected from participants at each follow-up visit or

during the telephone interview, and medical records from other facilities were reviewed when relevant.

All statistical analyses were performed using STATA 10.1. $\chi^2$ analyses and $t$ tests were used to compare study participants to all medical abortion patients aged 18 years or older seen during the study period to assess potential selection bias and to compare demographic, clinical, and acceptability information between telemedicine and face-to-face study participants. All analyses among cohort participants were conducted among women with complete follow-up information.

Univariable and multivariable analyses were conducted to identify potential associations between service delivery model (telemedicine compared with face-to-face) and the primary effectiveness and acceptability outcomes. To account for the possibility that a patient's experience might vary by the clinic she attended, clinic site was introduced into the multivariable model as a random effect, and the standard error was adjusted with a modified-sandwich estimator using STATA's vce (cluster clustervar) option for cluster-correlated data.[11,12] Automated forward selection was used to build the multivariable models with the entry level set at $P<.20$. Demographic and clinical covariates with univariable significance of $P<.20$ not entered during forward selection were next added to the model in order of ascending univariable $P$ value and were included in the final model if their inclusion changed the predictor variable's effect estimate by 10% or more. Gestational age was forced into the multivariable model assessing effectiveness because of evidence that the prevalence of ongoing pregnancy after medical abortion increases with increasing gestational age.[1] Covariates were added using these rules up to the maximum number of allowable covariates in a multivariable model based on the rule: number of events/10.[13]

Sample size was based on the acceptability outcome of overall satisfaction, because we anticipated that effectiveness would be comparable between groups. We also anticipated that acceptability of the telemedicine service would be high but might be somewhat lower than the standard provision model. Assuming 90% of women in the standard provision group reported being satisfied or very satisfied with their experience,[10] a sample of 219 in each group was needed to detect a difference in acceptability among telemedicine patients of 10% or more (two-sided $\alpha=0.05$, power=80%). Recruitment was continued until the desired sample of participants with follow-up data was obtained.

Because of the relatively small sample size of the cohort study, we also analyzed deidentified data on all adverse events after medical abortion reported to the Planned Parenthood Federation of America and Danco Laboratories by Planned Parenthood of the Heartland between July 1, 2008 (shortly after telemedicine was initiated) and October 31, 2009 (shortly after cohort recruitment ended). Planned Parenthood affiliates are required to report the following adverse events: ongoing pregnancy, emergency room treatment, hospitalization, transfusion, unrecognized ectopic pregnancy, allergic reaction, infection requiring intravenous treatment, and death. We calculated the prevalence, 95% confidence intervals (CIs), and $\chi^2$ analyses of any adverse event, ongoing pregnancy, or blood transfusion, comparing telemedicine with face-to-face patients during this period. We also conducted a multivariable analysis of any adverse event comparing telemedicine with face-to-face patients during this period adjusting for possible confounders.

All cohort study participants gave informed consent to participate in the study. They received a $10 gift card for completing the questionnaire. The study was approved by Allendale institutional review board.

## RESULTS

The study flow diagram is shown in Figure 1. Fifty-six percent of patients aged 18 years or older seen during the study period were enrolled into the study. Reasons for nonparticipation were not collected, although study staff noted that fewer patients were enrolled on busy clinic days, possibly because staff did not have time to thoroughly explain the study. After excluding seven patients, 578 women were included in the cohort study. Among the 281 telemedicine patients, 205 (73%) had an in-person and 18 (6%) had a phone follow-up interview; 58 (21%) were lost to follow-up. Among the 297 face-to-face patients, 196 (66%) had an in-person and 30 (10%) had a phone follow-up interview; 71 (24%) were lost to follow-up. The proportion of patients that attended an in-person visit was not significantly different between the two groups ($P=.07$).

Age, marital status, and race were similar between cohort study participants and all patients receiving medical abortion aged 18 years or older seen during the study period. A lower proportion of study participants were Latina (4% compared with 7%, $P=.008$) and had a maximum completed education of 12 years or less (52% compared with 58%, $P=.03$). Table 1 shows the enrollment demographic and clinical information for cohort study participants with follow-up data. Among study participants, telemedicine and face-to-face patients were similar in terms of age, marital status, race, ethnicity, parity, and gesta-

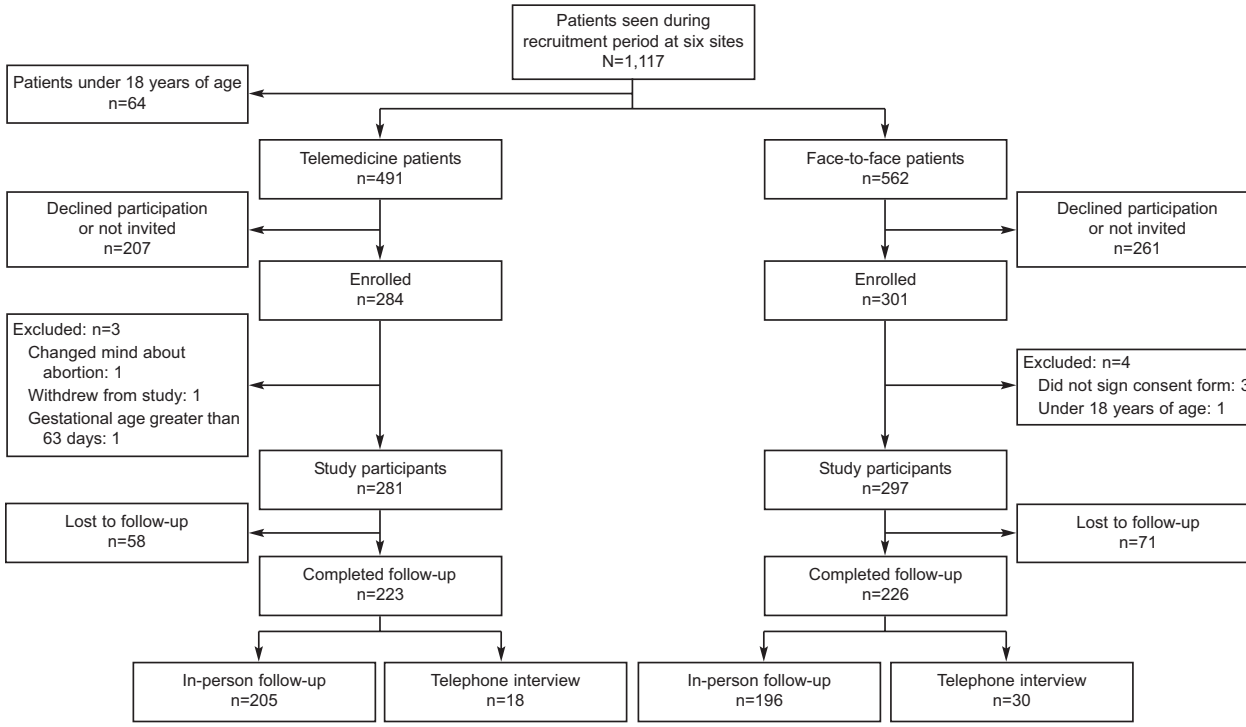


**Fig. 1.** Flow of patients through the study.
*Grossman. Telemedicine Provision of Medical Abortion. Obstet Gynecol 2011.*

tional age. Compared with telemedicine participants, more face-to-face participants had a maximum completed education of 12 years or less (58% compared with 46%, $P$=.01) and reported a prior abortion (38% compared with 26%, $P$=.006).

Follow-up information was obtained a median of 15 days after enrollment for those with in-person visits and 27 days after enrollment for those who had phone interviews. At follow-up, eight women (three telemedicine and five face-to-face patients) were given an additional dose of misoprostol and scheduled for a second follow-up visit.

Contraceptive uptake postabortion was slightly higher among participants with a face-to-face visit. Eighty-eight percent (n=199) of face-to-face participants and 80% (n=179) of telemedicine participants were given or had started a contraceptive method by the time of the follow-up visit or phone interview ($P$=.02). Use of specific contraceptive methods was not significantly different between the cohorts, except more face-to-face participants were given condoms (21% compared with 6%, $P$<.001) or had an intrauterine device inserted (23% compared with 12%, $P$=.005) at the follow-up visit.

Two of the 223 telemedicine patients underwent vacuum aspiration for ongoing pregnancy (n=1) or incomplete abortion (n=1), and one woman elected to continue an ongoing pregnancy for a total effectiveness of 98.7% (95% CI 96.1–99.5%). Six of the 226 face-to-face patients underwent vacuum aspiration and one underwent dilation and curettage for ongoing pregnancy (n=2) or incomplete abortion (n=5) for a total effectiveness of 96.9% (95% CI 93.7–98.5%). The odds of successful abortion with telemedicine compared with face-to-face provision was not significantly different in the multivariable model, which adjusted for within-cluster correlation and gestational age (odds ratio [OR] 2.34, 95% CI 0.84–6.55).

There were no deaths or hospitalizations among the cohort study participants. Adverse events, including emergency room visits and visits to other clinics, occurred among 2.5% of participants and were not statistically different between groups ($P$=.78). One telemedicine participant received a blood transfusion in an emergency room. The telemedicine participant who decided to continue with an ongoing pregnancy reported her child was normal at 7 months of age.

Table 2 shows the prevalence of adverse events among all patients undergoing medical abortion from July 1, 2008, to October 31, 2009. A total of 46 adverse events were reported (1.3% of 3,556 medical abortions). No deaths were reported. There was no

**Table 1. Characteristics of Cohort Study Participants**

| | Telemedicine Cohort (n=223) | Face-to-Face Cohort (n=226) | *P* |
|---|---|---|---|
| Age (y) | | | .65 |
| 18–25 | 137 (61) | 130 (58) | |
| 26–35 | 71 (32) | 77 (34) | |
| 36–45 | 15 (7) | 19 (8) | |
| Median | 23 | 24 | |
| Mean | 24.9 | 25.7 | .11 |
| Marital status | | | .72 |
| Single | 163 (74) | 164 (73) | |
| Married or partnered | 35 (16) | 42 (19) | |
| Divorced, widowed, or separated | 22 (10) | 20 (9) | |
| Latina or Hispanic | 5 (2) | 12 (5) | .09 |
| Race | | | .85 |
| White | 179 (82) | 182 (85) | |
| African American | 28 (13) | 22 (10) | |
| Asian American | 5 (2) | 4 (2) | |
| Other* | 6 (3) | 6 (3) | |
| Highest grade completed 12 y or less | 102 (46) | 130 (58) | .01 |
| Median | 13 | 12 | |
| Mean | 13.5 | 13.1 | .01 |
| Parous | 112 (50) | 133 (59) | .07 |
| Mean | 1.01 | 1.09 | .49 |
| Prior abortion | 58 (26) | 86 (38) | .006 |
| Gestational age (d) | | | .79 |
| 49 or less | 141 (63) | 142 (63) | |
| 50–56 | 53 (24) | 50 (22) | |
| 57–63 | 29 (13) | 34 (15) | |
| Median | 46 | 46 | |
| Mean | 46.7 | 47.1 | .58 |

Data are n (%) unless otherwise specified.
* Other race includes women who reported more than one race and women who reported their race as Native American or Alaska Native.

significant difference in the prevalence of any adverse event, ongoing pregnancy, or blood transfusion between women who received services through telemedicine compared with face-to-face provision. With a one-sided $\alpha$ of 0.05, this sample size had 82% power to detect an increase in the prevalence of any adverse event from 1.3% among face-to-face patients to 2.6% among telemedicine patients. The odds of any adverse event among telemedicine compared with face-to-face patients was not significantly different in the multivariable model, which adjusted for within-cluster correlation, marital status, Latina ethnicity, and race (OR 0.96, 95% CI 0.48–1.91).

**Table 2. Adverse Events Among All Medical Abortion Patients, July 1, 2008, Through October 31, 2009**

| | Telemedicine (n=1,172) | Face-to-Face (n=2,384) | *P* |
|---|---|---|---|
| Any adverse event | 1.3 (0.8–2.1) | 1.3 (0.9–1.8) | .96 |
| Ongoing pregnancy | 0.9 (0.5–1.7) | 1.0 (0.6–1.4) | .94 |
| Blood transfusion | 0.3 (0.1–0.9) | 0.1 (0.04–0.4) | .23 |

Data are % (95% confidence interval) unless otherwise specified.

Table 3 shows information on acceptability of abortion services. Overall satisfaction was very high among participants, although more telemedicine patients (94%) reported being very satisfied compared with face-to-face patients (88%), which was significantly different in the univariable analysis ($P$=.03). However, when adjusted for within-cluster correlation (no additional covariates met the multivariable model inclusion criteria), this difference was no longer significant (OR 2.10, 95% CI 0.75–5.92).

More telemedicine patients (90%) said they would recommend the medical abortion service to a friend in a similar situation than face-to-face patients (83%, $P$=.04). In the multivariable model, which adjusted for within-cluster correlation, age, education, and prior abortion, telemedicine patients had greater odds of saying they would recommend the service compared with face-to-face patients (OR 1.72, 95% CI 1.26–2.34).

Patients in both groups reported liking similar aspects of the service, including the staff (58%), information received (30%), and the fact that they did not feel judged (11%). A minority of patients reported dislikes, and a significantly higher proportion of face-to-face patients (32%) complained about the waiting time in the clinic compared with telemedicine patients (7%, $P$<.001).

We asked women several questions about the factors that influenced their decision about what abortion method to have and which clinic to go to. Seventy-one percent of participants said they strongly wanted medical abortion when they were making their decision (no difference between cohorts), and 94% of participants said having the abortion as early as possible was very important to them (no difference between cohorts). However, 69% of telemedicine patients said having the abortion close to home was very important compared with 58% of face-to-face patients ($P$=.02).

Three fourths of patients reported being satisfied with the conversation with the doctor (the video teleconference for those receiving telemedicine services), and this did not differ between the two groups ($P$=.89). Among telemedicine patients, 99% said it was easy to see the doctor, and 99% said it was easy to hear the doctor; 89% said they felt comfortable asking the doctor questions during the video teleconference.

**Table 3. Acceptability of Abortion Services**

| | Telemedicine Cohort (n=214) | Face-to-Face Cohort (n=217) | *P* |
|---|---|---|---|
| Overall satisfaction | | | |
| Very satisfied | 201 (94) | 191 (88) | .03* |
| Somewhat satisfied | 10 (5) | 21 (10) | |
| Somewhat or very dissatisfied | 1 (.5) | 1 (.5) | |
| Not sure or no response | 2 (1) | 4 (2) | |
| Would recommend a medical abortion in this clinic to a friend | 192 (90) | 180 (83) | .04 |
| What liked best (more than one response possible) | | | |
| Staff | 128 (60) | 123 (57) | .51 |
| Information received | 67 (31) | 61 (28) | .47 |
| Did not feel judged | 20 (9) | 27 (12) | .30 |
| Other | 18 (8) | 20 (9) | .77 |
| Felt comfortable | 14 (7) | 16 (7) | .74 |
| Privacy and confidentiality | 14 (7) | 11 (5) | .51 |
| Fast | 11 (5) | 11 (5) | .97 |
| Nothing or no response | 10 (5) | 8 (4) | .61 |
| What liked least (more than one response possible) | | | |
| Nothing or no response | 148 (69) | 110 (51) | <.001 |
| Waiting time | 16 (7) | 70 (32) | <.001 |
| Other† | 50 (23) | 37 (17) | .10 |
| Information received | | | |
| Very helpful | 195 (91) | 202 (93) | .45‡ |
| Somewhat or not helpful | 16 (8) | 13 (6) | |
| Not sure or no response | 3 (1) | 2 (1) | |
| Satisfaction with conversation with doctor | | | |
| Very satisfied | 163 (76) | 164 (76) | .89* |
| Somewhat satisfied | 34 (16) | 36 (17) | |
| Somewhat or very dissatisfied | 11 (5) | 6 (3) | |
| Not sure or no response | 6 (3) | 11 (5) | |
| Initial feelings about medical compared with surgical abortion | | | |
| Strongly wanted medical abortion | 156 (73) | 152 (70) | .51§ |
| Leaning toward medical abortion | 33 (15) | 36 (17) | |
| Strongly wanted surgical abortion | 2 (1) | 2 (1) | |
| Leaning toward surgical abortion | 2 (1) | 5 (2) | |
| No strong feeling either way | 19 (9) | 19 (9) | |
| No response | 2 (1) | 3 (1) | |
| Feelings about importance of having abortion close to home | | | |
| Very important | 147 (69) | 126 (58) | .02‖ |
| Somewhat important | 38 (18) | 50 (23) | |
| Not important | 21 (10) | 31 (14) | |
| Not sure or no response | 8 (4) | 10 (5) | |
| Feelings about importance of having an early abortion | | | |
| Very important | 202 (94) | 202 (93) | .58‖ |
| Somewhat important | 8 (4) | 10 (5) | |
| Not important or not sure | 4 (2) | 5 (2) | |
| Easy to see doctor during telemedicine encounter | | | |
| Yes | 211 (99) | | |
| No | 3 (1) | | |
| Easy to hear doctor during telemedicine encounter | | | |
| Yes | 212 (99) | | |
| No | 2 (1) | | |
| Comfortable asking questions during telemedicine encounter | | | |
| Yes | 190 (89) | | |
| No | 24 (11) | | |
| Would prefer doctor in room instead of telemedicine | | | |
| Yes | 53 (25) | | |
| No | 154 (73) | | |
| No response | 5 (2) | | |

Data are n (%) unless otherwise specified.
* *P* value for very satisfied compared with not very satisfied.
† Other includes: staff (nine), telemedicine (nine), not enough information received (eight), having abortion (seven), lack of privacy (seven), distance (six), partner could not attend visit (five), and general (36).
‡ *P* value for very helpful compared with not very helpful.
§ *P* value for strongly wanted medical abortion compared with other responses.
‖ *P* value for very important compared with not very important.

One fourth of telemedicine patients said they would have preferred being in the same room with the doctor. Participants were allowed to write in comments about this response, which generally indicated that although they would have preferred to be in the same room, because that was not an option, they were satisfied with the video teleconference. These open responses are representative of some of the comments participants gave: "I am always generally more comfortable dealing with serious issues in person" and "It was rather irritating, but probably faster/more convenient. (I'm a face to face person)."

In multivariable analysis, the following covariates were associated with a preference for being in the same room with the physician: age 18–25 years (compared with 26 years or older; OR 1.58, 95% CI 1.20–2.09); education 12 years or less (compared with more than 12 years; OR 1.80, 95% CI 1.51–2.14); and nulliparous (compared with parous; OR 1.71, 95% CI 1.15–2.54).

## DISCUSSION

We found that provision of medical abortion through telemedicine had comparable clinical outcomes to the face-to-face provision model with equivalent success rates and a low prevalence of adverse events. Both the high success rate and low prevalence of adverse events for the telemedicine service are similar to those reported for medical abortion in the literature.[1,10,14] Although contraceptive uptake was slightly higher among the face-to-face cohort, this was most likely the result of the limited number of providers trained to insert intrauterine devices at telemedicine sites.

Acceptability was high among both groups of women in this study, and these results were similar to other studies on medical abortion with buccal misoprostol.[10,15] We found one measure of acceptability–willingness to recommend the service to a friend–to be significantly higher among telemedicine patients, even after controlling for confounders. The fact that telemedicine patients reported high levels of satisfaction may be related to the convenience of receiving services closer to home or earlier in pregnancy, both of which were important for this group. Our results do not indicate that telemedicine patients were coerced to have a medical abortion despite this being the only method available at the clinics they accessed, because a high proportion reported strongly wanting medical abortion from the outset, and this did not differ from face-to-face patients. The fact that telemedicine patients had a restricted choice at the clinics they attended, if anything, might have biased them to have lower levels of satisfaction compared with face-to-face patients, who also had the option of aspiration abortion.

We found that 25% of telemedicine patients would have preferred a face-to-face visit with the physician, and this was more common among younger, less educated, and nulliparous women. Another study of clinic-based medical abortion found that older age was an independent predictor of a positive experience, whereas education level was not.[16] In our study, participants were told at the time they scheduled their appointment whether they would receive abortion services through telemedicine or not. It seems that some decided to have the abortion through telemedicine perhaps because the clinic was closer to their home or because they could get an appointment sooner, although ideally they would have preferred to be in the same room with the physician. This finding highlights the importance of informing women about what the telemedicine service involves so patients can weigh the options about which service they prefer.

This study has several limitations. Participants were not randomized and instead selected the treatment they received (telemedicine compared with a face-to-face visit), which might have introduced selection bias. However, because this was the first study of telemedicine provision of medical abortion, we felt it was important for women to be well informed of the two provision models and be allowed to choose which they preferred. In the future, a randomized controlled trial might be possible among women who have no real preference between the two models as has been done to compare medical and surgical abortion.[17,18] Overall, 56% of patients aged 18 years or older seen during the study period agreed to participate in the cohort study, and participants were somewhat more educated and less likely to be Latina than the general medical abortion clinic population. This might have introduced selection bias, although the acceptance rate likely affected both cohorts similarly. In addition, 22% of participants were lost to follow-up despite multiple attempts to contact them. Although this loss to follow-up is high, it is similar to proportions reported in the literature[19] and did not differ between cohorts. Finally, our results are specific to the provision models offered in this clinic system, and we cannot generalize our findings to other service delivery settings.

In states where physicians are required to perform medical abortion, the findings from this study indicate that telemedicine can be used to provide medical abortion in an effective and highly acceptable manner. Future research should evaluate whether

telemedicine provision improves access to services for women in rural areas as well as whether there are cost savings associated with the model. Just as telemedicine has been used to extend the reach of physicians in other disciplines, this provision model has the potential to provide abortion services earlier in pregnancy and closer to a woman's home and to help overcome the barriers to abortion access in the United States.[20]

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