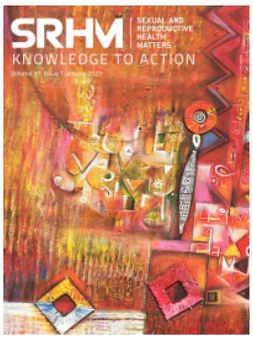


Sexual and Reproductive Health Matters

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/zrhm21

Expanding access to early medical abortion services in Ghana with telemedicine: findings from a pilot evaluation

Joseph Adu, Matthea Roemer, Georgina Page, Elymas Dekonor, George Akanlu, Chris Fofie, Mary Dornukwor Teye, Patricia Opoku Afriyie, Adjeiwa Akosua Affram, Fidelia Ohemeng, Philip Teg-Nefaah Tabong & Duah Dwomoh

To cite this article: Joseph Adu, Matthea Roemer, Georgina Page, Elymas Dekonor, George Akanlu, Chris Fofie, Mary Dornukwor Teye, Patricia Opoku Afriyie, Adjeiwa Akosua Affram, Fidelia Ohemeng, Philip Teg-Nefaah Tabong & Duah Dwomoh (2023) Expanding access to early medical abortion services in Ghana with telemedicine: findings from a pilot evaluation, Sexual and Reproductive Health Matters, 31:4, 2250621, DOI: 10.1080/26410397.2023.2250621

To link to this article: https://doi.org/10.1080/26410397.2023.2250621

RESEARCH ARTICLE

Check for updates

SRHM SEXUAL AND REPRODUCTIVE HEALTH MATTERS
KNOWLEDGE TO ACTION

Expanding access to early medical abortion services in Ghana with telemedicine: findings from a pilot evaluation

Joseph Adu [a], Matthea Roemer,[b] Georgina Page,[c] Elymas Dekonor,[d] George Akanlu,[e] Chris Fofie,[f] Mary Dornukwor Teye,[g] Patricia Opoku Afriyie,[h] Adjeiwa Akosua Affram,[i] Fidelia Ohemeng,[j] Philip Teg-Nefaah Tabong,[k] Duah Dwomoh[l]

a Director of Medical Services, MSI Reproductive Choices, Ghana. *Correspondence*: joseph.adu@mariestopes.org.gh
b Innovation, Evidence and Research Manager, MSI Reproductive Choices, Accra, Ghana
c Head of SBC and Inclusion, MSI Reproductive Choices, Accra, Ghana
d Head of Marketing, MSI Reproductive Choices, Accra, Ghana
e Country Director, MSI Reproductive Choices, Accra, Ghana
f Deputy Director, Reproductive and Child Health, Ghana Health Services, Accra, Ghana
g Clinical Quality Advisor, MSI Reproductive Choices, Accra, Ghana
h Monitoring, Evaluation, Research and Learning (MERL) Manager, MSI Reproductive Choices, Ghana
i PhD Candidate, Department of Health Policy, Planning and Management, School of Public Health, University of Ghana, Accra, Ghana
j Senior Lecturer, Department of Sociology, University of Ghana, Accra, Ghana
k Lecturer, Department of Social and Behavioural Sciences, School of Public Health, University of Ghana, Accra, Ghana
l Director, D&D Statistical Consulting Services Limited, Accra, Ghana

Abstract: *Abortion in Ghana is legally permissible under certain conditions. Updated in June 2021, the National Comprehensive Abortion Care Services Standards and Protocols included telemedicine as a recognised option for early medical abortion (EMA). Subsequently, Marie Stopes Ghana launched this pilot project to understand the feasibility and acceptability of providing EMA services through telemedicine. The pilot evaluation drew on two research protocols – a process evaluation and a qualitative study. The process evaluation focused on existing routine data sources and additional pilot-specific monitoring, while the qualitative protocol included in-depth interviews with a range of key stakeholders, including telemedicine and in-person patients, healthcare managers, and service providers. Telemedicine for EMA is feasible, acceptable, and has likely expanded access to safe abortion in Ghana. The MSIG telemedicine service package enabled 97% of patients to have a successful EMA at home. Thirty-six per cent of the total 878 patients during the pilot reported that they had no other option for accessing an abortion. Patients described telemedicine EMA services as a highly acceptable and appealing service option. Eighty-four per cent reported they would opt for the telemedicine service again and 83% reported they were very likely to recommend the service. There is potential for telemedicine to expand and improve access to critical SRH services. EMA via telemedicine can be delivered effectively in a low-resource setting. This pilot also showed how telemedicine provides access to patients who feel they do not have other safe service options, meeting specific patient needs in terms of discretion, convenience, and timing.* DOI: 10.1080/26410397.2023.2250621

Keywords: early medical abortion, sexual and reproductive health, family planning, telemedicine, telehealth, digital health, Ghana

Introduction

Ghana is regarded as one of the countries in sub-Saharan Africa that has a liberal abortion law. According to the 1985 amendment of the 1960 law, abortion is permitted in cases of rape, incest, defilement of a mentally handicapped woman, if the life or health of the woman is in danger, or if there is risk of fetal abnormality. However,

until a 2021 revision of the Ministry of Health (MoH) comprehensive abortion care guidelines, abortion services were required to be provided by registered and trained health personnel in an approved facility.[1]

Even in settings with more liberal abortion regulations, abortion remains inaccessible for many people. Factors impeding access include stigmatisation of abortion, poor knowledge of abortion's legal status among the public and medical professionals as well as misperceptions about the safety of legal abortion, a lack of providers, the need to travel long distances to reach care, inconvenient clinic hours or the inability to make appointments, and the costs associated with both care and accessing care.[2] Furthermore, in Ghana, misoprostol and/or the combination of misoprostol and mifepristone are only permitted to be sold as prescription-only medications in pharmacies, creating a barrier in access to quality products for safe self-managed medical abortions.[3]

Given these various access barriers, many women in Ghana continue to seek unsafe abortion services, which often fall outside of the legal framework, with an estimated 71% of all abortions nationally occurring illegally.[4] The treatment rate for women experiencing complications resulting from an unsafe abortion was higher for women obtaining an illegal abortion (5.2 per 1000 women aged 15–49) than for those obtaining a legal one (0.5 per 1000 women aged 15–49).[4] Complications from unsafe abortions contribute substantially to Ghana's high maternal mortality, which was estimated at 310 maternal deaths per 100,000 live births in 2017.[2]

In June 2021, the Ghana Health Service (GHS) issued updated guidance on comprehensive abortion care, allowing remote counselling and assessment of patients for provision of early medical abortions (EMA), to further increase access to safe abortion and post-abortion care.

Telemedicine, the provision of health care at a distance through technology, can expand access to high-quality care by increasing availability, reducing costs, and offering a patient-centred approach. There have been numerous studies showing the safety, effectiveness, and acceptability of telemedicine contraception and medical abortion services in other contexts, such as the UK, USA, Australia, and South Africa. However, none look specifically at the feasibility of such a model in a low-resource setting like Ghana or elsewhere in sub-Saharan Africa.[5–8]

Ghana has had a rapidly growing technology sector, with recent large investments in financial technology and moves by big technology companies, such as Twitter setting up its African headquarters in Ghana and the 2019 launch of Google's AI lab in Accra. Increasing internet connection and use of smartphones in Ghana is supporting the thriving tech market, with an internet penetration of 46.5%, which is higher than the African average of 39.3%.[9]

In line with internet penetration, Ghana also has the highest mobile penetration in West Africa and already outperforms many of its regional peers. By the end of 2019, mobile adoption was at 55%, higher than the regional average of 45%.[10] A more recent survey in 2021 estimated that 98% of internet users in Ghana aged 16–64 years owned a mobile phone of any type. According to the same survey, 99% had smartphones, while another 18% owned feature phones.[11] The current internet and mobile penetration means a large portion of the population can be served effectively through digital services.

Mobile technology has already had an impact on several sectors across the economy, including financial services, health, agriculture, transportation, and education. A clear example is the case of the financial services sector; in 2018, more than GHS220 billion/US$ 38.5 billion (169% compound annual growth rate since 2012) worth of transactions were conducted using mobile money.[10] There are 13.1 million active mobile money accounts, higher than the 12 million registered bank accounts, indicating that mobile technology is playing a key role in supporting financial inclusion across the country.[10]

Building on the increasing access to digital innovations with the growth in internet penetration, mobile phone access, and mobile money usage, MSI Ghana (MSIG) piloted a telemedicine model for EMA with the aim of expanding access to safe abortion care by addressing the structural barriers that were exaggerated by COVID-19 lockdowns in 2020. MSIG – a registered and accredited health institution in Ghana that provides sexual and reproductive health services through a network of private facilities and Outreach models across Ghana – launched the telemedicine model as a small-scale phased pilot in two regions in Ghana. The first phase of the pilot focused on the Ashanti region in July 2021,

operating from the Santasi clinic in Kumasi (Ghana's second-largest city). The second phase started in Accra, the capital city, in October 2021.

In this new pathway to abortion care, eligibility for EMA via telemedicine is assessed during the patient's initial call with MarieCall, the MSIG contact centre. MarieCall is a toll-free hotline that is managed by agents trained to respond to a wide range of questions on sexual and reproductive health and to refer patients to MSIG services as needed. If a caller requests information about abortion services, the contact centre agents present the telemedicine option. If the caller shows interest in this option, they are screened using safeguarding, legal, and clinical eligibility scripts. Once eligibility and interest in the option are confirmed, they are booked for an in-depth telephone consultation with a trained healthcare provider. At this point, the patient is charged a consultation fee that is paid via mobile money.

During the remote consultation by phone, the healthcare provider goes through full counselling and clinical eligibility for EMA, collects the patient's consent to proceed and provides detailed instructions on how to take the medication. Patients are given the choice to receive their EMA medication via a courier service or to collect it from an MSIG clinic. A further payment is taken at this point, also by mobile money, for the EMA service and any delivery fees.

The pack includes discreet outer packaging, the medical abortion (MA) product (combination mifepristone and misoprostol regime) along with a simple, visual medication leaflet, pain medication, a pregnancy test, condoms, and a short-term contraceptive method (oral contraception or self-injectable DMPA-SC) if chosen during the consultation. All MSIG patients, including those using the telemedicine EMA service, have access to support from the MSIG contact centre and are encouraged to use this. Approximately seven days after the patient takes the abortion medication, the contact centre also makes a routine follow-up call to verify that the abortion is complete and to check for any complications or side-effects. If a physical assessment or further care is required, the patient is referred to their nearest medical facility.

This article presents results from both a process evaluation of the pilot as well as an exploratory qualitative study that took place during the pilot. Results therefore draw on mixed methods, combining existing routine data sources, alongside pilot-specific monitoring and in-depth qualitative interviews. The research aimed to understand the feasibility and acceptability of EMA via telemedicine in the Ghanaian context, as well as to understand patients' own experiences with this new pathway and their preferences for self-care.

Methods

Partnership and study design

This mixed-methods process evaluation and qualitative study was a collaborative effort between researchers at MSI Reproductive Choices (MSI), MSI Ghana (MSIG), the Ghana Health Service (GHS), a research team from the University of Ghana and D&D Consulting (a Ghana-based research hub with ties to the School of Health Sciences and School of Public Health). MSI led on the protocol design and implementation for the process evaluation while the D&D consulting research team led on the protocol design and implementation of the qualitative component.

Study setting

Qualitative study

Data collection for the qualitative interviews was completed across both pilot areas – Accra and Kumasi – between April and June 2022.

Process evaluation

All routine data were collected from both pilot areas throughout the full pilot period from July 2021 through July 2022.

Data sources and sample size

Three key data sources were drawn on for the evaluation including qualitative interviews, routine data systems, and pilot-specific monitoring.

Qualitative study

A total of 38 interviews were completed with MSIG patients accessing EMA and contraceptive services through telemedicine ($n = 12$), non-telemedicine MSIG EMA and contraceptive patients ($n = 14$), MSIG service providers ($n = 5$), members of the MSIG telemedicine project team ($n = 3$), and key policy (GHS) & community stakeholders ($n = 4$).

Process evaluation: routine data systems

Several existing management information systems and data sources were already in place to support

the monitoring of the telemedicine pilot. These included:

- MSIG's electronic health records database capturing patient-level information on all services delivered in MSIG clinics including patient registration information.
- MSI's finance database used for global tracking of programme spending and income.
- Customer relationship management system which logs details of all outbound and inbound calls managed by the MSIG contact centre.
- Clinical incident tracker of all reports (and outcomes) of reported clinical incidents.

Process evaluation: pilot-specific monitoring
Given the new model of service delivery, additional monitoring was put in place to capture key data along the patient journey and to ensure that patient and staff experience of the pilot were captured at key time points. These included:

- An Excel-based courier tracker which monitored details of all telemedicine deliveries (n = 770).
- A secure online clinical follow-up form was used to capture information from the clinical follow-up calls with each EMA patient (n = 431).
- All patients reached for their clinical follow-up call were also invited to provide feedback on their service. They could do this over the phone or through a link to a secure electronic form. This was sent to a secure server that stored all patient feedback data. This article reflects the feedback collected from April to September 2022 (n = 108), due to changes that were implemented in this data collection in the first few months of the pilot.
- A short online staff feedback survey was shared with MSIG personnel supporting the telemedicine pilot (n = 11).

Participant recruitment

Qualitative study
Staff of the MSIG clinics involved in the pilot were informed of the patient profiles (inclusion and exclusion criteria) needed for the study. The staff approached eligible patients and explained the study to them in detail based on a standardised information sheet. Patients who agreed to be re-contacted were contacted by research assistants to have the study explained fully and obtain formal consent.

Service providers and the project team managers were recruited from within the health facility.

Process evaluation
All patients who were re-contactable at the 7-day follow-up call were offered the opportunity to complete the patient feedback questionnaire.

All staff supporting the telemedicine pilot were requested to complete the staff feedback survey and provided a link to the online form.

Data collection

Qualitative study
An appointment was set up with patients who agreed to take part in the study. They were given the option of a face-to-face interview at their preferred location or being contacted by telephone. All telemedicine and non-telemedicine patients preferred to be interviewed via telephone and interviews were conducted in English and other local languages, based on the patient's preference. The participants were assured that their responses would be kept confidential and that their participation would not affect the services they receive from the health facility.

Interviews with service providers and other project staff tool place at the health facility in a private space. Policymakers from Ghana Health Service and other key stakeholders were visited at their offices or interviewed online depending on their preferences and availability.

Process evaluation
All routine data systems were updated as needed before the launch of the pilot to capture the agreed-upon key performance monitoring indicators. Data were reviewed on at least a monthly basis to monitor performance and ensure data quality.

Analysis

Qualitative study
All interviews were transcribed verbatim. We adopted the model for inductive thematic analyses by Braun and Clarke.[12] This involved: (1) familiarisation with the data; (2) systematic data coding; (3) generating initial themes; (4) developing and reviewing themes; (5) refining, defining, and naming themes; and (6) writing the report. An initial codebook was created manually in Excel from the interview transcripts and the final coding was completed in Nvivo QSR qualitative

software. For this article, only the results of the analysis of the transcripts of the interviews conducted with EMA patients have been presented.

Process evaluation

Before the start of the pilot, key process and outcome indicators were defined collaboratively between MSI, MSIG, and GHS. This formed the framework for the final analysis at the end of the pilot. Data analysis was completed by two researchers using both Excel and Stata 15, based on the type of analysis required and the available data.

Ethical considerations

The independent ethics review committee of MSI Reproductive Choices, based in the United Kingdom, reviewed and approved the study protocol (protocol number: 008-21, approved 17 September 2021). Both protocols also secured local ethical approval from the Ghana Health Service Ethics Review Committee (review number GHS-ERC:008/11/21, approved 20 December 2021).

Results

The MSIG contact centre discussed EMA via telemedicine during more than 2500 calls during the pilot (July 2021–July 2022). As well as a small proportion specifically enquiring about telemedicine, contact centre agents identified further callers enquiring about their pregnancy options for whom telemedicine might be appropriate.

Almost half (40%, 1005/2502) of calls during which telemedicine was discussed resulted in a telemedicine EMA (TM EMA) consultation being booked. Feedback from contact centre agents indicated the remainder were generally either referred to an MSIG clinic or Bluestar (MSIG franchise) clinic instead or were not ready to commit to any of the offered service options, seeking only advice on potential options at that stage.

A short set of screening questions was then used to ensure that callers found this new model of service delivery acceptable and feasible prior to proceeding with booking a consultation with a provider. Almost a third (31%, 651/2102) who were screened were unable to confirm that they would be able to receive a delivery or pick-up the medication from an MSIG clinic. An even higher proportion (45%, 950/2096) did not feel they could find a private space to complete the consultation over the phone.

Patients reported a very positive experience with the MSIG contact centre in the patient feedback questionnaire: 99% (107/108) described their experience as good or very good with 76% (82/108) rating it as "very good". 100% (108/108) of patients reported getting a telemedicine appointment within one working day. This satisfaction with the contact centre interaction and booking process was reinforced in the qualitative interviews: "*The quick response was everything I needed and that was excellent on the part of the Contact Centre. They are very polite and makes you feel comfortable to talk to"* (In-depth interview, TM EMA patient).

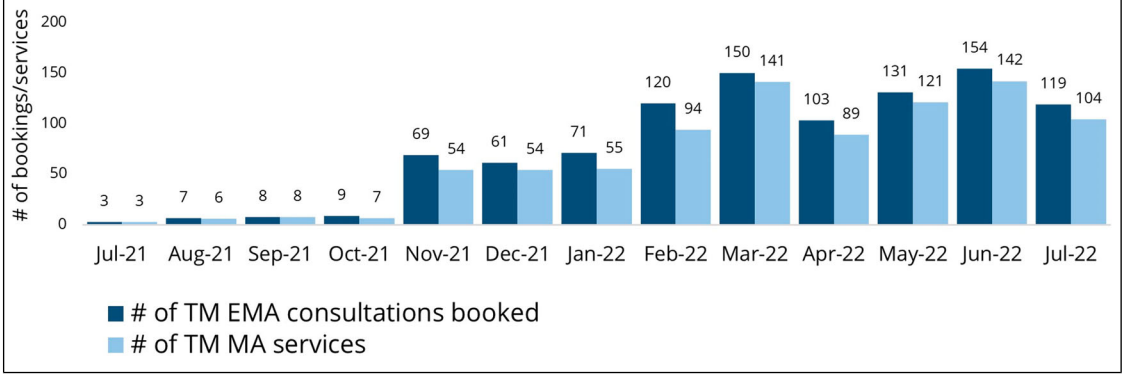
During the 13 months of the initial pilot, 87% (878/1005) of the patients booked for a telemedicine EMA consultation resulted in a TM EMA service (Figure 1). Reasons for non-conversion from consultation to service included patients changing their mind about the service entirely (and choosing to continue with the pregnancy), patients preferring to visit an MSIG or Bluestar clinic, or patients being found ineligible for the service. Service numbers for Phase 1 (Kumasi only) were relatively low (average of 6 services per month), with greater scale achieved once the pilot extended to Accra in November 2021 (Phase 2). Since January 2022 MSIG have been serving an average of 107 women each month with EMA service via telemedicine.

Post-abortion family planning (PAFP) was discussed with all telemedicine patients as part of their initial consultation, with the option to receive pills or a self-injectable contraceptive method as part of the TM package, or to visit an MSIG clinic for a long-acting method. Over the pilot period, on average, almost half (44%, 385/878) of TM EMA patients accepted a method of PAFP, with pills being slightly more often the method chosen (Figure 2). Despite almost half of all TM EMA patients accepting a PAFP method, the qualitative findings revealed that the actual use of the methods provided was likely lower. Many TM EMA patients interviewed who accepted a short-term family planning method as part of their EMA service described being reluctant to go on the pill or use the injectable. Negative perceptions about the use of hormonal contraception, and especially long-acting methods, persisted among those interviewed.

Establishing an effective and efficient system with a courier service was feasible in both pilot areas.

"*For me, the fact that they delivered it and I didn't have to go and pick it up myself [is why I chose the*

Figure 1. EMA telemedicine services booked and provided



TM option]. I was even telling my friends. I contacted them within a couple of hours I received it that very day a couple of hours later from when I initially contacted them … it's just amazing." (In-depth interview, TM EMA patient)

Patients had a strong preference for a delivery over picking-up, with 87% (101/770) opting for delivery, and 98% of dispatched products were received by patients during the pilot. In Kumasi, there was a slightly higher preference for clinic pick-up, with 17% (14/69) opting to pick-up the MA pack compared to 11% (87/701) in Accra.

Following their consultation and with the additional information provided with the MA pack, patients felt very comfortable managing the MA and prepared for side-effects or complications, with 83% reporting that they felt very comfortable with taking the medication (Table 1). This was also reinforced in the qualitative interviews, with patients reporting that they felt supported by the providers and the option to re-contact them for any reason:

"*As I said immediately, I encountered any problem and I gave them a call they are quick to pay attention to me, answer my question no matter how long I took on the phone no matter how many questions I must ask they are ready to attend to it. And they assure me that everything was going to be fine and if I don't feel okay, I shouldn't hesitate to come over, so they look at it.*" (In-depth interview, TM MA patient)

A very small proportion (1%, 2/431) of patients reported taking the pills incorrectly. In these cases, the patients had confused the timings, or sequence of the pills, likely rendering the regimen ineffective. A similarly small proportion (1%, 5/431) also changed their mind about taking the pills.

Figure 2. PAFP uptake by method type (July 2021–July 2022)

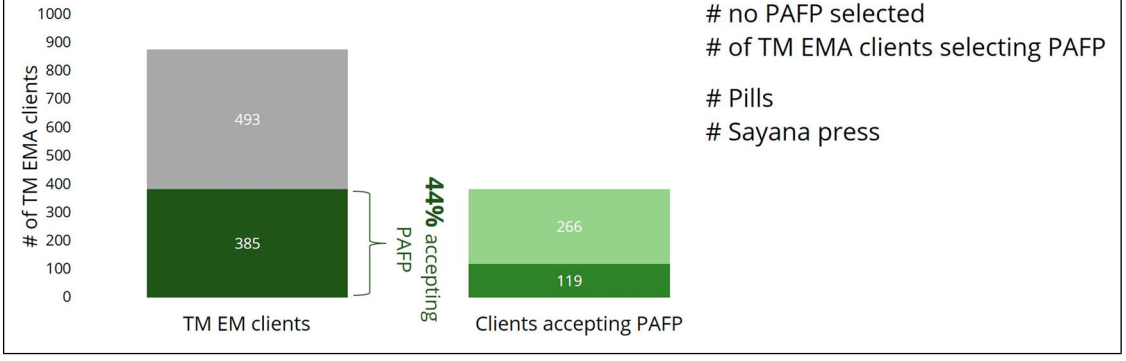


Table 1. Patient-reported comfort with taking the medical abortion medication and managing any symptoms or complications

	Very uncomfortable		Somewhat uncomfortable		Neither		Somewhat comfortable		Very comfortable	
	#	%	#	%	#	%	#	%	#	%
How comfortable were you about how to take the medication?	0	0%	1	1%	2	2%	15	14%	90	83%
How comfortable were you that you understood what to expect in terms of the risks and side effects of the medication?	0	0%	1	1%	6	6%	24	22%	77	71%
How comfortable were you that you knew what to do if you experienced any problems after taking the medication?	1	1%	0	0%	5	5%	18	17%	84	78%

Source: Patient feedback questionnaire (n = 108).

Most patients reported many of the expected symptoms of an EMA (Table 2). Many described the cramping and bleeding they experienced as worse than a period. Despite this, almost all patients (96%, 409/426) felt able to manage any pain. Pain medication was offered as part of the MA pack and discussed during the initial consultation. This seems to have successfully equipped patients to manage their pain when self-administering.

Among those we were able to track and who had completed the regimen, 97% (410/425) reported a complete medical abortion accessed via telemedicine. However, a significant proportion (42%, 309/740) of patients were unreachable for their post-service clinical check-up, and therefore the outcome of their experience is unknown. Contact centre agents attempted to contact all patients 6–7 days following their service. Follow-up calls were important in catching a small number of clinical incidents. In

Table 2. Patient-reported experience of their early medical abortion

	Yes		No		Don't know	
	#	%	#	%	#	%
Vomited within an hour of taking Mifepristone	341	80%	85	20%	0	0%
Experienced cramping	375	88%	51	12%	0	0%
Cramping was worse than regular period	290	68%	124	29%	13	3%
Experienced bleeding	413	97%	13	3%	0	0%
Bleeding was heavier than regular period	341	80%	77	18%	9	2%
Reported passing clots/tissue	392	92%	30	7%	4	1%
Felt able to manage pain	409	96%	17	4%	4	1%

Source: Patient follow-up data, patients who had completed the regimen (n = 426).

2022, MSIG saw one serious and four minor incidents for 746 MA services delivered via telemedicine.* This compares to zero serious and six minor incidents for 5600 MA services in MSIG clinics. A small proportion of patients not experiencing an incident were also referred to clinics for further assessment.

In terms of overall acceptability and accessibility, telemedicine services were perceived to be affordable for more affluent patients who value the convenience of the service. Most patients found the price to be reasonable due to the added value of the convenience of not needing to go to the facility as well as the travel cost saved:

"*I don't really know but I think it's cheaper [than in-facility service] … I didn't have time to be there in the hospital. I think it will cost me much more if I go there …* " (In-depth interview, TM MA patient)

"*I think [the cost] it's fine. If I were to pick a car to their office, it's kind of equal to paying for the telemedicine."* (In-depth interview, TM MA patient)

Other patients found the cost for EMA via telemedicine (approx. $US 36) to be expensive as the same product can be accessed from a pharmacy for one-sixth of the cost:

"*[The cost is] Very expensive. It was later I realized the drug can later be bought in town. It's expensive because the drug they gave me a friend of mine bought the same drug and it was 50 cedis and I had to pay 300 cedis plus the consultation everything was like 400 and something." (*In-depth interview, TM MA patient)

Despite the cost, the telemedicine service option does appear to be expanding access to patients who might otherwise have no other option for the service. Over one-third of patients (36%) felt they had no other option. The majority (88%) of TM MA patients were new to MSIG and a high proportion were students (45%) or professionals (34%). This profile data indicates that student-/ university-focused promotional activities had been successful and that the telemedicine model appears to especially suit students and young professionals, who may not otherwise be able to access MSIG's in-facility services or other options for abortion care.

There is high acceptability and satisfaction among patients, with 85% (91/108) reporting they would opt for the telemedicine option, over the phone (80%, 86/108) or video link (5%, 5/108), if they needed the service again in the future. Furthermore, 83% (92/108) patients reported that they are very likely to recommend MSIG's telemedicine services.

"*Marie Stopes is one of the best services I've received, and their telecommunications service was good from start till completion … The fact that they even called to check on me during the stress was a plus. I am satisfied."* (Patient feedback questionnaire, TM EMA patient)

Patients specifically reported high satisfaction with their telemedicine consultation experience. Patients were positive about the clarity of information and the quality of care provided over the phone. The majority reported that they were able to find a private place for the call (97%, 105/108) and that it was easy to hear the provider during the call (96%, 104/108). Patients also reported that the provider definitely (89%, 96/108) or mostly (10%, 11/108) gave them information during the consultation in a way that they could understand.

"*Experience? oh, it was good. They really attended to everything. They were attentive to everything. I had doubts and when I called, they were very attentive to my problems."* (In-depth interview, TM EMA patient)

Discussion

The evaluation suggests that telemedicine can successfully expand access to early medical abortion (EMA) for women in Ghana. While the age profile of telemedicine EMA patients during the pilot was like that seen in MSIG clinics, telemedicine services reached a higher proportion of students and young professionals. Qualitative data indicates that it was the discretion and convenience that made telemedicine a feasible and convenient option, particularly for younger women. Patient feedback data showed that 36% of patients felt they had no other option for accessing EMA. Further, MSIG clinic patient numbers do not

*The serious incident was referred for emergency care having reported lower abdominal pain during clinical follow-up call (ectopic pregnancy). Three of the minor incidents were method failures and were referred to and provided with a vacuum aspiration service in MSIG clinic. One remained undetermined (patient may not have been pregnant).

appear to have been negatively impacted by the introduction of telemedicine. Together these insights suggest that the telemedicine pilot was able to reach a new patient base with the option of early medical abortion.

As well as being effective at expanding access for some patients, data show that EMA TM services were generally a highly acceptable and appealing option, successfully equipping women to self-manage their early medical abortion. Our evaluation data indicate similar results to other studies in terms of the feasibility and safety of self-administration of early medical abortion outside of a clinic-setting.[5–8] Patients were extremely positive about their EMA telemedicine experience, rating highly their interactions with the MSIG contact centre, the information provided during their virtual clinical consultation, and the printed material provided as part of the medication pack. In addition, feedback data provide insight into patient comfort levels with self-administration following their virtual consultation. Most reported they were comfortable taking the medication (97%, 105/108), that they understood the risks (93%, 101/108) and knew what to do if they experienced any problems (95%, 102/108). Almost all (96%, 104/108), were able to manage any pain they experienced. The majority, 83% (92/108), were very likely to recommend the service to others and 85% (91/108) would opt for TM again in the future. These positive experiences of early medical abortion are critical for ensuring positive word of mouth and peer support for safe self-care in the future and avoiding the possibility of women reverting to unsafe options.

Finally, the evaluation provides important insight into the infrastructure necessary to offer EMA via telemedicine. The pilot took place in the context of significant improvements in connectivity, making telemedicine a viable means by which to access healthcare for a growing number of women, particularly in urban areas. The MSIG TM model was also able to leverage existing and established contact centre resource to positive effect. This emerged as key to creating awareness of the telemedicine option among patients, facilitating mobile money payments and appointments for a virtual consultation with a health provider and in the provision of ongoing follow-up care and support to patients. However, many callers with whom telemedicine was discussed did not find key elements of the model (the delivery, pick-up options, finding a private space to have the phone consultation and payment by mobile money) acceptable or feasible. Improvements in delivery, connectivity, and payment infrastructure, as well as awareness and comfort in using the same, will be required if this service model is to truly expand access. Among those who did complete their phone consultation and proceed with the service, most patients preferred to have their medication pack delivered. This preference highlights the importance of ensuring that the delivery services are well set-up to support the timely delivery of medications, and continuously monitored and maintained to support this.

Implications and recommendations

Not reflected in the evaluation findings, but critical to feasibility of the MSIG pilot, were the Ghana regulations regarding access to medical abortion outside of a clinic setting as well as those stating that medical abortion drugs require a prescription. This enabled the introduction of telemedicine in a context where the only other legal option for women to access early medical abortion is in a clinic setting. In contexts where medical abortion products can be accessed without prescription, for example in a pharmacy over the counter, the impact of telemedicine on access and the expansion of self-care is unlikely to be the same.

This evaluation and pilot primarily focused on early medical abortion. However, the findings suggest that there is potentially a broader opportunity for telemedicine to be an effective option for supporting women and girls to self-manage their sexual and reproductive health. This evaluation showed that the combination of contact centre support, virtual clinical consultation, and printed information was effective at equipping women to self-administer EMA. This raises the question of what other SRH services could be provided via telemedicine with the same positive benefits (discretion, convenience) to the patient.

In terms of expanding access to safe abortion, this evaluation suggests that telemedicine can be a valuable option to consider for those opting for an early, medical, abortion. However, indicative data from this evaluation and elsewhere indicate that some women will always prefer a surgical option, and that others will require surgical post-abortion care. It is critical that early medical abortion via telemedicine is offered alongside surgical and in-clinic options, to ensure women

have the options they deserve as well as access to post-abortion care, if they should so need it.

Also critical to the feasibility of this pilot was the collaboration with the Ghana Health Service (GHS), who lent their support and technical oversight to the pilot. The strong partnership between MSIG and GHS during this pilot allowed for regular review of the pilot progress and the inclusion of the results of the evaluation in their ongoing reflection on the future of telemedicine as a service delivery model in Ghana. Based on the results of this pilot and broader considerations, telemedicine for early medical abortion will only be an option in some contexts following revisions to national healthcare policy. Government engagement and support for pilots like this exploring the feasibility of telemedicine to expand access can help provide the necessary evidence and trigger the necessary discussions to shape policy decisions.

Limitations

This pilot evaluation was, in its definition, an evaluation of a small-scale intervention and geographically limited. Therefore, results from this pilot evaluation may not be representative to a similar intervention at scale or to other geographical regions of Ghana. The two pilot intervention areas were purposefully selected as they are the country's most urban and commercial centres. When scaling to new regions, considerations should be made around differences in digital literacy in the populations as well as other key infrastructure components of a successful telemedicine for EMA intervention.

While the MSIG contact centre agents attempted to contact all patients 6–7 days after they took the medical abortion medication, there was a significant proportion (42%, 309/740) of patients who were unreachable for their post-service clinical check-up, and therefore the outcome of their experience is unknown. This may have biased our clinical follow-up results, if this portion of the patient population experienced different outcomes, than those who were reached. However, we would assume that if they had experienced any incidents or more extreme side effects, they would have been more likely to accept the follow-up call or reach out directly.

This pilot required the implementation of additional monitoring systems, such as the patient feedback form and courier tracker. Creating parallel data systems required additional personnel resource for maintenance as well as difficulties in triangulation between data sources. If scaled, this could create further challenges. Given this, MSIG is exploring options to better integrate TM monitoring into existing systems to mitigate the risks associated with parallel systems.

Another data monitoring challenge and limitation was the tracking of post-abortion family planning (PAFP) uptake. In addition to short-term methods included with their EMA pack, patients were offered the option of visiting an MSIG clinic to access a long-acting and reversible (LARC) family planning method. Tracking EMA telemedicine patients' uptake of in-clinic PAFP services was challenging during the pilot but will be addressed (see above). Further, while a growing proportion of telemedicine MA patients accepted a short-term family planning method as PAFP during the pilot, actual usage of these methods is unknown.

Conclusion

These insights demonstrate the potential for telemedicine to expand and ensure access to critical SRH services like EMA. This pilot showed how telemedicine provides access to patients who feel they do not have other safe options, meeting specific patient needs in terms of discretion, convenience, and timing.

The findings from the pilot evaluation demonstrate that early medical abortion via telemedicine can be delivered effectively in a low-resource setting, if some infrastructure considerations are met (connectivity, delivery, and payment options). The process and resources put in place by MSIG for the pilot were effective at supporting patients through their telemedicine journey. Initial discussion of the telemedicine option with the MSIG contact centre, the telemedicine phone consultation and information provided in the telemedicine MA pack were able to equip patients to successfully self-administer at home. MA success rates were high (c. 97%) and most patients were comfortable managing any side effects, with advice on hand from the MSIG contact centre if they required ongoing support.

Given the clear benefits for those opting for telemedicine EMA, and the acceptability and efficacy of the option, a gap remains in learning how to communicate and market this option, particularly in contexts where this service delivery model is not well understood, and this low awareness and

understanding is accompanied by concerns about key aspects of this way of accessing services. In addition, further evidence is needed from a broader range of settings to help influence decision-making at the policy level to ensure additional opportunities are opened for the introduction of telemedicine.

Disclosure statement

The authors Matthea Roemer, Georgina Page, Chris Fofie, Adjeiwa Akosua Affram, Fidelia Ohemeng, Philip Teg-Nefaah Tabong, Duah Dwomohl have no conflict of interest to declare.

The authors Joseph Adu, Elymas Dekonor, George Akanlu, Patricia Opoku Afriyie, and Mary Teye were employed by MSI Reproductive Choices Ghana which charges a fee for the telemedicine service as part of their private sector model.

Funding

The pilot and evaluation were generously supported by funding from the Children's Investment Fund Foundation (CIFF).

ORCID

Joseph Adu http://orcid.org/0000-0003-1567-4799

References

1. Guttmacher. Institute Abortion in Ghana, 2016.
2. Guttmacher. Incidence of Abortion and Provision of Abortion-Related Services in Ghana, 2020.
3. Ganle JK, Busia NT, Baatiema L. Stocking and over-the-counter sale of misoprostol for medical abortion in Ghana's community pharmacies: comparison of questionnaire and mystery client survey. Int J Pharmacy Practice. 2020;28:267–274. doi:10.1111/ijpp.12593
4. Polis CB, Castillo PW, Otupiri E, et al. Estimating the incidence of abortion: using the abortion incidence complications methodology in Ghana. BMJ Global Health. 2020;5:e002130. doi:10.1136/bmjgh-2019-002130
5. Endler M, Lavelanet A, Cleeve A, et al. Telemedicine for medical abortion: a systematic review. BJOG. 2019;126:1094–1102. doi:10.1111/1471-0528.15684
6. Grossman D, Grindlay K. Safety of medical abortion provided through telemedicine compared with in person. Obstet Gynecol. 2017;130:778–782. doi:10.1097/AOG.0000000000002212
7. Hyland P, Raymond E, Chong E. A direct-to-patient telemedicine abortion service in Australia: retrospective analysis of the first 18 months. Aust N Z J Obstet Gynaecol. 2018;58:335–340. doi:10.1111/ajo.12800
8. Porter EC, Lord J, Church K. Acceptability of no-test medical abortion provided via telemedicine during COVID-19: analysis of patient-reported outcomes. BMJ Sexual & Reproductive Health. 2021;47:261–268. doi:10.1136/bmjsrh-2020-200954
9. Stats IW. Internet Users Statistics for Africa. Retrieved January23, 2023, from Internet World Stats: Available from: https://www.internetworldstats.com/stats1.htm, 2022.
10. Omondi G. The state of mobile in Ghana's tech ecosystem. Retrieved January 23, 2023, from GSMA: Mobile for Development: Available from: https://www.gsma.com/mobilefordevelopment/blog/the-state-of-mobile-in-ghanas-tech-ecosystem/, 2020, February 11.
11. Sasu DD. Ownership rate of selected digital devices in Ghana Q3 2020 and 2021. Retrieved January 23, 2023, from Statista: Available from: https://www.statista.com/statistics/1171486/ownership-rate-of-selected-digital-devices-in-ghana/, 2022, April 12.
12. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qual Res Psychol. 2021;18;3:328–352. doi:10.1080/14780887.2020.1769238

Résumé

L'avortement au Ghana est légalement autorisé sous certaines conditions. Mis à jour en juin 2021, les normes et protocoles nationaux sur les services de soins complets pour avortement incluent désormais la télémédecine comme option reconnue pour l'avortement médicamenteux précoce. Par la suite, Marie Stopes Ghana a lancé ce projet pilote pour

Resumen

En Ghana, el aborto es permitido por la ley bajo ciertas condiciones. Las Normas y Protocolos Nacionales sobre Servicios de Atención Integral al Aborto, actualizados en junio de 2021, incluían la telemedicina como una opción reconocida para el aborto con medicamentos temprano (AMT). Posteriormente, *Marie Stopes*

comprendre la faisabilité et l'acceptabilité de services d'avortement médicamenteux précoce pratiqués par le biais de la télémédecine. L'évaluation du projet pilote s'inspirait de deux protocoles de recherche: une évaluation de processus et une étude qualitative. L'évaluation de processus s'est centrée sur les sources de données systématiques existantes et sur un suivi additionnel propre au projet pilote, alors que le protocole qualitatif comportait des entretiens approfondis avec un éventail d'acteurs clés, notamment des patients en télémédecine et en personne, des gestionnaires de soins de santé et des prestataires de services. La télémédecine pour l'avortement médicamenteux précoce est faisable, acceptable et a probablement élargi l'accès à un avortement sans risque au Ghana. L'ensemble de services de télémédecine de Marie Stopes International Ghana a permis à 97% des patientes de pratiquer avec succès un avortement médicamenteux précoce à domicile. Au cours du projet pilote, 36% des 878 patientes ont déclaré qu'elles n'avaient pas d'autre option pour interrompre leur grossesse. Les patientes ont décrit les services d'avortement médicamenteux précoce par télémédecine comme une option de service hautement acceptable et attrayante. 84% ont affirmé qu'elles choisiraient à nouveau le service de télémédecine et 83% ont assuré qu'elles recommanderaient très probablement le service. La télémédecine a le potentiel d'élargir et d'améliorer l'accès aux services essentiels de SSR. L'avortement médicamenteux précoce par télémédecine peut être pratiqué efficacement dans un environnement à faibles ressources. Ce projet pilote a aussi montré comment la télémédecine donne accès aux patientes qui estiment qu'elles n'ont pas d'autres options sures de services, en répondant à leurs besoins spécifiques en matière de discrétion, de commodité et de ponctualité.

Ghana lanzó este proyecto piloto para entender la viabilidad y aceptabilidad de proporcionar servicios de AMT vía telemedicina. La evaluación del piloto se basó en dos protocolos de investigación: la evaluación del proceso y un estudio cualitativo. La evaluación del proceso se enfocó en las fuentes de datos rutinarios existentes y monitoreo adicional relacionado específicamente con el piloto, mientras que el protocolo cualitativo consistió en entrevistas a profundidad con una variedad de partes interesadas clave: pacientes vía telemedicina y en persona, administradores y prestadores de servicios de salud. La telemedicina para el AMT es factible y aceptable, y probablemente amplió el acceso al aborto seguro en Ghana. El paquete de servicios MSIG vía telemedicina permitió al 97% de las pacientes tener un AMT completo en su casa. Del total de 878 pacientes durante el piloto, el 36% informó que no tenía ninguna otra opción para acceder al aborto. Las pacientes describieron los servicios de AMT vía telemedicina como una opción de servicio muy aceptable y atractiva. El 84% indicó que optaría nuevamente por el servicio vía telemedicina y el 83% dijo que era muy probable que recomendara el servicio. Es posible que la telemedicina se extienda y mejore el acceso a servicios esenciales de SSR. El AMT vía telemedicina puede realizarse de manera eficaz en entornos con escasos recursos. Este piloto mostró que la telemedicina ofrece acceso a las pacientes que creen no tener otras opciones de servicios seguros, y atiende necesidades específicas de las pacientes con relación a discreción, conveniencia y momento oportuno.