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Introducing medication abortion into public sector facilities in KwaZulu-Natal, South Africa: an operations research study☆,☆☆

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Abstract

Objectives: Examine the feasibility of introducing mifepristone–misoprostol medication abortion into existing public sector surgical abortion services in KwaZulu-Natal, South Africa.

Study Design: Cohort study of women offered medication or surgical abortion in a larger medication abortion introduction study. The sample included 1167 women seeking first-trimester abortion at four public sector facilities; 923 women at ≤9 weeks' gestation were eligible for medication abortion. Women who chose medication abortion took 200 mg of mifepristone orally at the facility and 800 mcg of misoprostol buccally (or vaginally if they anticipated or experienced problems with buccal administration) 48 h later at home, based on international research and global safe abortion guidelines. Women who chose surgical abortion received 600 mg of misoprostol sublingually or vaginally on the day of their procedure followed by manual vacuum aspiration 4 h later. Main outcome measures included proportion of eligible women who chose each method, proportion with complete abortion and proportion reporting adverse events.

Results: Ninety-four percent of eligible women chose medication abortion. No adverse events were reported by women who chose surgical abortion; 3% of women in the medication abortion group reported adverse events and 0.4% reported a serious adverse event. Seventy-six percent of women received a family planning method at the facility where their received their abortion, with no difference based on procedure type. Medication abortion patients were significantly more likely to report they would choose this method again (94% vs. 78%, $p<.001$) and recommend the method to a friend (98% vs. 84%, $p<.001$).

Conclusions: Medication abortion was successfully introduced with low and acceptable rates of adverse events; most women at study facilities chose this option.

Implications: Mifepristone–misoprostol medication abortion was successfully integrated into public sector surgical abortion services in South Africa and was chosen by a large majority of women who were eligible and offered choice of early termination method; access to medication abortion should be expanded in South Africa and other similar settings.

Keywords: Medication abortion; South Africa; Acceptability; Public sector

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1. Introduction

Medication abortion has been proven to be safe, effective and acceptable and has been used by millions of women around the world [1–7]. The Republic of South Africa (RSA), whose 1996 Choice on Termination of Pregnancy Act legalized abortion on request through 12 weeks' gestation and for social, economic or psychological reasons from 13 to 20 weeks [8], is one of the only countries in the southern hemisphere where mifepristone has been approved [9]; the South African Medicines Control Council in 2001 approved mifepristone for use with misoprostol through 56 days from the last menstrual period (LMP).

Legal abortion has reduced RSA's abortion-related morbidity and mortality, but barriers to high-quality legal services remain [10–13]. Medication abortion is not widely available in public sector facilities, where 80% of South African women receive their health care [14]. KwaZulu-Natal (KZN), one of the most populous provinces in RSA, has one of the lowest numbers of facilities offering abortion services [15]. Staffing shortages and low levels of health worker and community support have been identified as barriers to service provision [16]. Studies suggest that the availability of medication abortion might increase the number of providers willing to provide abortion and encourage women to seek abortion services sooner [17–19]. Offering additional options early in pregnancy may be particularly important in RSA, where more than 20% of abortions occur in the second trimester [20].

The aim of this study was to examine the feasibility of introducing medication abortion with mifepristone and misoprostol into existing public sector surgical abortion services in KZN. We documented medication abortion uptake, assessed the safety, effectiveness and acceptability of medication and surgical abortion, and compared clients' experiences of the procedures.

2. Materials and methods

Between 2009 and 2011, we conducted an operations research study to evaluate the introduction of medication abortion services in public sector facilities in KZN, which were providing first-trimester, surgical abortion. Eligible facilities had to be registered and approved to provide abortion in KZN, have offered abortion services between August and September 2009 and have one or more providers currently (in the previous month) providing first-trimester abortions. A list of registered abortion facilities was obtained from the KZN Department of Health in August 2009. The average number of first-trimester surgical abortions performed per month at each eligible facility over the previous 6 months was determined through prerandomization assessment visits and sites were stratified into high (74 or more cases per month) and low (less than 47 cases per month) caseload groups based on the natural break in distribution of facilities' caseloads (data not shown).

High and low caseload sites were randomized separately into either the intervention group where sites added medication abortion to their existing surgical services or to the control group where sites continued with surgical services only. Providers and staff at both the intervention and control sites received didactic medication abortion training (including values clarification and training on the study protocol and procedures); at the intervention sites, providers also received clinical training and mifepristone tablets (Fig. 1).

Six sites were randomized to each group; two sites dropped out of the intervention group before data collection began due to loss of their abortion provider, or inability of the provider to attend the medication abortion training. The final sample included 10 public hospitals: 4 intervention and 6 control sites. The data presented in this paper are from the intervention sites.

At the intervention sites, women who were able to communicate in English or Zulu, were willing and able to comprehend and give informed consent, reported a gestational age of 12 weeks or less based on LMP, lived within 1 h from the facility and had access to emergency facilities, and were willing to attend at least one follow-up visit were eligible to participate in the study. In addition, women confirmed by a trained, facility-based nurse to be 9 weeks or less gestation (cutoff selected based on best current clinical evidence and global/national medication abortion guidelines) using standard assessment at the clinic (including reported LMP, physical exam and/or ultrasound evaluation) and who did not have any of the contraindicated conditions included on the mifepristone label in RSA were eligible for medication abortion and were given the option of medication or surgical abortion [21,22]. Women 10–12 weeks' gestation completed a short interview regarding their interest in medication abortion but were not clinically eligible for medication abortion and are excluded from this analysis. All women who were interested in the study and eligible to participate signed an informed consent form.

Women 9 weeks' or less gestation and eligible for medication abortion received detailed information about their abortion procedure options. Surgical abortion information was the same as usually provided in the facility; information on medication abortion included details about the drugs, how they work, dosing schedule and routes of administration, side effects, signs of complications and what to do in case of emergency. These messages were reinforced with a take-home client care sheet that included the provider's phone number and the date and time of her follow-up appointment. Women who selected surgical abortion received an appointment to return for their procedure approximately 1.5 days after their first visit; the specific timing depended on the facility's existing booking system, caseload and provider availability. Medication abortion clients started their procedures by taking the mifepristone on the day they received the counseling and information about the procedure. According to national guidelines, women who chose surgical abortion received 600 mg of misoprostol sublingually or vaginally, followed by manual vacuum aspiration approximately 4 h later. Women who chose medication abortion received 200 mg of mifepristone orally

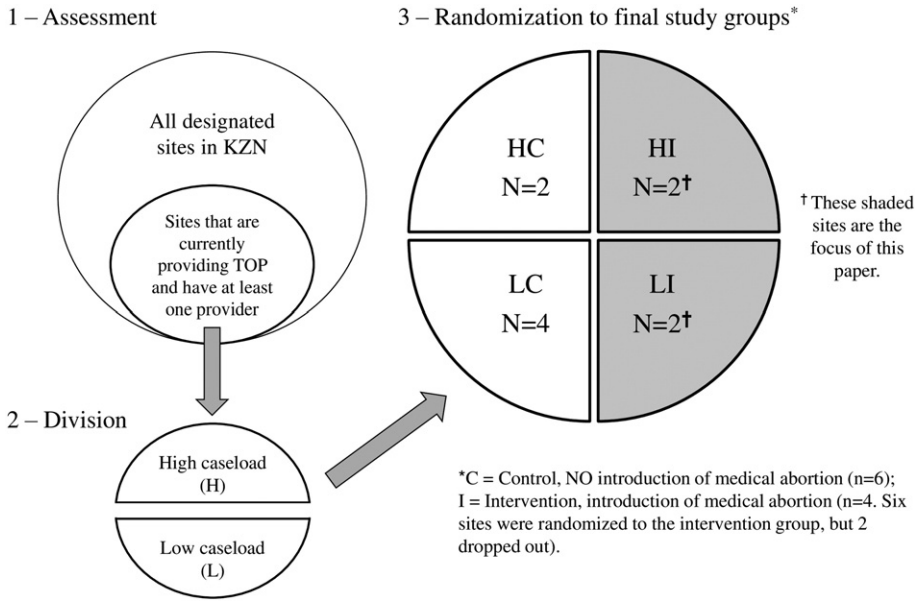


Fig. 1. Site selection and randomization.

and were instructed to take 800 mcg of misoprostol buccally (or vaginally if they anticipated or experienced problems with buccal administration) 48 h later at home, based on international research and global safe abortion guidelines [22]. This protocol did not require an ultrasound evaluation to determine the gestational age of the pregnancy or to confirm the completion of the termination following a medication abortion procedure, but many facilities did perform ultrasounds as routine standard of care. Women in both groups were advised to treat pain with paracetamol as needed, but were not routinely provided with pain medication.

Women who enrolled in the study completed two interviews. Women completed their baseline interview on the day they enrolled in the study (the day they booked their surgical abortion or started the medication procedure). For medication abortion clients, the interview took place after receiving the medication from the clinician. A trained interviewer collected data on demographic characteristics, reproductive history, abortion decision-making, abortion method choice, family planning uptake, and information sources for abortion services. All women received ZAR 50 (roughly USD 6 based on 2009–2011 exchange rates) reimbursement for their time.

Study participants were asked to return for an in-person follow-up visit and interview 10–21 days after their first visit. The study team made at least five attempts to contact women who did not return by telephone, and if successful completed the follow-up interview over the phone. During in-person follow-up visits, a nurse recounseled women on family planning and expected recovery experience, and assessed abortion completion using a set of standard questions and either a clinical or ultrasound exam, at the nurse's discretion. Women who chose medication abortion and required additional care due to method failure or other concerns received a surgical abortion or other treatment at the study facility.

At the follow-up visit, women met with the study interviewer to complete their follow-up interview. Interview questions addressed experiences with their chosen method, including side effects and any adverse events (defined as side effects that were significant enough that the woman returned to the study facility for care/advice, or sought treatment at another health care facility), whether they had visited another health care facility since their first visit, satisfaction with the method, and family planning uptake. If the follow-up visit was completed via telephone, a study interviewer completed the follow-up interview and encouraged the woman to come to the facility to see the nurse to confirm the abortion was complete. Reimbursement for the women's time at the follow-up interview was again ZAR 50 and provided via an airtime voucher (in-person) or credited directly to her cell phone account (if interviewed via telephone).

We calculated the sample size for this study based on early abortion case load in the province and international data on medication abortion uptake [4–6]. Based on data from a previous multicenter study conducted in RSA [19], we estimated that approximately 20% of women attending public sector services would be eligible for medication abortion; applying that to provincial statistics in KZN, we predicted that approximately 1200 eligible women (based on gestational age) would present at the study sites during a

1-year period. We estimated that approximately 50% of women would choose medication abortion and a sample of at least 600 women who used medication abortion was deemed sufficient to assess uptake and experience with the method.

The Biomedical Research Ethics Committee at the University of KZN and the Allendale Investigational Review Board of Regulatory and Technical Associates approved the study protocol. Approvals were also obtained from the KZN Department of Health and each facility prior to initiating data collection.

2.1. Statistical analysis

Quantitative data were entered into CSPro (version 4.1 US Census Bureau) and then exported to SPSS (version 18.0. IBM, version 14, USA) and Stata (StataComp, version 11, USA) for analysis. Differences between the medication and surgical abortion groups were computed using independent *t* tests for continuous variables, chi-square tests for categorical variables and Fisher's Exact tests when the cell size dropped below a count of five. Statistical significance is reported at the alpha<.05 level. All analyses were stratified by early abortion method choice, medication versus surgical abortion.

3. Results

3.1. Client demographics

One thousand one hundred sixty-seven women seeking first-trimester abortion were enrolled at the intervention sites; 923 (79%) women presenting at 9 weeks or less gestation were eligible for medication abortion. Of these participants, 865 (94%) chose medication and 58 (6%) chose surgical abortion (Fig. 2). The mean gestational age at presentation was 51 days (Table 1).

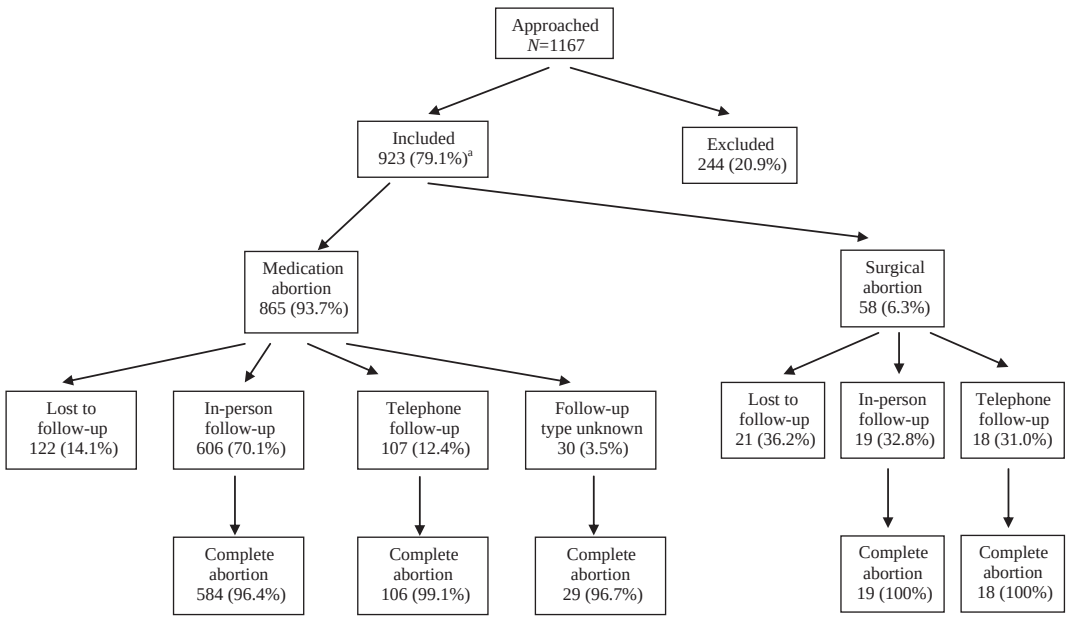
Demographics of the study population are presented in Table 1. Women averaged 25 years of age and were primarily African race [864 (94%)] and single [837 (91%)]. The characteristics of women who chose medication and surgical abortion were not statistically different.

Seven hundred eighty women (85%) enrolled in the study returned for a follow-up visit or completed a follow-up interview via telephone (Fig. 2); medication abortion clients were more likely to complete a follow up visit than surgical abortion clients [743 (86%) vs. 37 (64%), p<.001].

3.2. Procedure outcomes

Among women completing a follow-up visit, 37 (100%) surgical abortion clients and 719 (97%) medication abortion clients had complete abortions (Table 2). Of the women who chose medication abortion and did not have a complete abortion ($n=24$), almost all ($n=22$) had a surgical abortion at the study facility to complete their abortion. Two women left their study facility while still pregnant but reported having an abortion at another facility.

Seven hundred thirty-five women (99%) in the medication abortion group and 36 (100%) women in the surgical abortion group reported bleeding during the abortion process (Table 2). More women in the medication abortion group reported pain with or after the procedure than women in the surgical abortion group [726 (99%) vs. 23 (92%), p<.01]. Women in the medication abortion group also reported fever [20 (3%)], chills [8 (1%)] and nausea [23 (3%)]. Women who experienced other symptoms [90 (12%)] reported, in order of most to least



[a]All data reported as n (%)

Fig. 2. Participant flow.

Table 1
Demographic characteristics, by procedure type.

	Surgical abortion (*n*=58)	Medication abortion (*n*=865)	Total (*n*=923)	p Value[a]
Age[b]	25 (22–28)	25 (21–29)	25 (21–29)	.887
Highest grade completed in school[c]				.098
Grade 5 or less	3 (5.2)	15 (1.8)	18 (2.0)	
Some secondary school	17 (29.3)	202 (23.5)	219 (23.9)	
Grade 12 — matriculated	38 (65.5)	642 (74.7)	680 (74.2)	
Race				.902
African	55 (96.5)	809 (93.6)	864 (93.8)	
White	0	10 (1.2)	10 (1.1)	
Colored	1 (1.8)	24 (2.8)	25 (2.7)	
Indian	1 (1.8)	20 (2.3)	21 (2.3)	
Other Asian	0	1 (0.1)	1 (0.1)	
Marital status				.074
Married/cohabiting	4 (7.0)	70 (8.1)	74 (8.1)	
Divorced/separated	0	4 (0.5)	4 (0.4)	
Single	52 (91.2)	785 (91.3)	837 (91.3)	
Widowed	1 (1.8)	1 (0.1)	2 (0.2)	
Employment status				.831
Employed full-time	14 (24.6)	148 (17.7)	162 (18.1)	
Employed part-time	7 (12.3)	106 (12.7)	113 (12.6)	
Unemployed looking for work	19 (33.3)	309 (36.9)	328 (36.7)	
Unemployed not looking for work	7 (12.3)	118 (14.1)	125 (14.0)	
Self-employed working full-time	0	10 (1.2)	10 (1.1)	
Self-employed working sporadically	0	6 (0.7)	6 (0.7)	
Other	10 (17.5)	140 (16.7)	150 (16.8)	
Source of income in past year				.378
None	6 (10.7)	83 (10.3)	89 (10.4)	
Family	29 (51.8)	460 (57.3)	489 (56.9)	
Employment	13 (23.2)	181 (22.5)	194 (22.6)	
Spouse/Boyfriend/Girlfriend	1 (1.8)	26 (3.2)	27 (3.1)	
Grant	7 (12.5)	45 (5.6)	52 (6.1)	
Other	0	8 (1.0)	8 (0.9)	
Household goes without food				.334
Often	0	12 (1.5)	12 (1.4)	
Sometimes	7 (12.5)	54 (6.7)	61 (7.1)	
Seldom	4 (7.1)	59 (7.3)	63 (7.3)	
Never	45 (80.4)	678 (84.4)	723 (84.2)	
Prior pregnancy				.233
Yes	45 (78.9)	598 (71.6)	643 (72.1)	
Prior abortion				.966
Yes	2 (3.5)	29 (3.4)	31 (3.4)	
Parity (number of live births)				.461
0 births	12 (20.7)	232 (27.9)	244 (27.5)	
1 live birth	24 (41.4)	328 (39.5)	352 (39.6)	
2 or more live births	22 (37.9)	271 (32.6)	293 (33.0)	
Gestational age at presentation[c]	52.2	51.3	51.3	.349
Ever used FP[d] method	43 (74.1)	580 (67.9)	623 (68.3)	.324
IUD[e,f]	0	0	0	–
Injectable[f]	35 (81.4)	440 (75.9)	475 (76.2)	.411
Oral contraceptive pill[f]	5 (11.6)	86 (14.8)	91 (14.6)	.566
Male condoms[f]	2 (4.7)	58 (10.0)	60 (9.6)	.251
Female condoms[f]	0	0	0	–
Emergency contraception[f]	0	0	0	–

Note: All data reported as *n* (%) unless otherwise specified. Percentages shown are valid percent and exclude missing data; there were 3 missing responses for age, 6 missing responses for highest grade completed, 2 missing responses for race, 6 missing responses for marital status, 29 missing responses for employment status, 64 missing responses for source of income, 64 missing responses for household goes without food, 31 missing responses for prior pregnancy, 14 missing responses for prior abortion, 34 missing responses for parity, and 11 missing responses for ever used a family planning method, and all other questions had 0 missing responses.

[a] *t* Tests were used for comparisons of proportions, and χ^2 tests were used for comparisons of categorical variables.

[b] Data reported as mean (interquartile range).

[c] Data reported as mean days.

[d] FP, family planning.

[e] IUD, intrauterine device.

[f] Percentages are calculated among the 623 participants who had ever used FP.

Table 2
Procedure outcomes, reported side effects, unscheduled facility visits and adverse events, by procedure type (as reported at follow-up).

	Surgical abortion (*n*=37)	Medication abortion (*n*=743)	Total (*n*=780)	p Value[a]
Procedure outcomes				
First choice/procedure was complete abortion	37 (100)	719 (96.8)	756 (96.9)	.540
Follow-up procedure needed to complete abortion	0	22 (3.0)	22 (2.8)	
Ongoing pregnancy at study exit	0	2 (0.3)	2 (0.3)	
Reported side effects				
Had pain with or after procedure				.005
Yes	23 (92.0)	726 (98.8)	749 (98.6)	
Did you have bleeding?				.461
Yes	36 (100)	735 (99.5)	771 (99.5)	
Reported heavy bleeding	1 (2.8)	82 (11.6)	83 (11.0)	.103
Did you have any other symptoms?	2 (5.4)	129 (17.4)	131 (16.8)	.058
Fever	1 (2.7)	20 (2.7)	21 (2.7)	.997
Chills	0	8 (1.1)	8 (1.0)	.526
Nausea	1 (2.7)	23 (3.1)	24 (3.1)	.893
Other	1 (2.7)	90 (12.1)	91 (11.7)	.082
Had any unscheduled visits	0	27 (3.6)	27 (2.9)	–
Had any adverse events	0	25 (3.4)	25 (2.7)	–
Had any serious adverse events	0	4 (0.5)	4 (0.4)	–

Note: All data reported as *n* (%) unless otherwise specified. Percentages shown are valid percent and exclude missing data; there were 20 missing responses for pain with or after procedure, 5 missing responses for bleeding, and 34 missing responses for heavy bleeding, and all other questions had 0 missing responses.
[a] *t* Tests were used for comparisons of proportions, and χ^2 tests were used for comparisons of categorical variables.

common: diarrhea, headache, vomiting and abdominal cramps (data not shown).

3.3. Adverse events

Twenty-five (3%) women in the study, all of whom had a medication abortion, experienced one or more adverse events (Table 2). Most of these women experienced heavy bleeding [20 (80%)]; other adverse events included severe pain [6 (24%)], weakness [2 (8%)] and vomiting [1 (4%)] (data not shown).

Four women (0.4%), all in the medication abortion group, experienced a serious adverse event (Table 2) and were hospitalized overnight. The reasons for hospitalizations included clusters of symptoms: feeling weak, struggling to walk and severe abdominal pain; prolonged nausea, vomiting and fainting; severe bleeding and pain, dizziness, dry tongue and weakness; and an ongoing pregnancy that was not successfully terminated with manual vacuum aspiration and was resolved with a dilation and curettage procedure in the hospital.

3.4. Abortion experience and acceptability

In an open-ended question, women were asked where they got information about abortion services before going to the clinic. Women reported getting this information from friends [473 (51%)], facility referral from other clinics or health providers [210 (23%)], family referral/informal referrals [37 (4%)], and other sources, including school and the Internet [19 (2%)] (data not shown). Seven hundred sixty-one women (98%) who completed follow-up reported being satisfied with their chosen abortion method and 726 women (94%) reported that the procedure was not at all/slightly difficult; there was not a significant difference between medication and surgical abortion clients (Table 3). Medication abortion patients were significantly more likely to report that they would choose this method again [683 (94%) vs. 29 (78%), p<.001] and that they would recommend the method to a friend [748 (98%) vs. 31 (84%), p<.001].

3.5. Family planning

The majority of women reported that they wanted to have children in the future [515 (68%)], with no statistically significant difference between groups (p=.183) (Table 4). Six hundred twenty-three women (68%) enrolled in the study and eligible to choose between medication and surgical abortion had ever used a modern family planning method; the most common methods reported were injectables, pills and male condoms. No one reported ever using an intrauterine device (IUD), female condom or emergency contraception. There were no statistically significant differences across procedure types (Table 1).

Overall, 581 women (75%) who had a follow-up visit received a family planning method at the facility where they got their abortion (Table 4). No statistically significant differences were found between the procedure types (p=.974). However, women who chose medication abortion were significantly more

Table 3
Method acceptability outcomes, by procedure type (as reported at follow-up).

	Surgical abortion (*n*=37)	Medication abortion (*n*=743)	Total (*n*=780)	p Value[a]
Satisfied with abortion				.434
Not satisfied	0	12 (1.6)	12 (1.6)	
Satisfied	37 (100)	724 (98.4)	761 (98.4)	
How would you characterize abortion experience?				.234
Not at all/slightly difficult	33 (89.2)	693 (94.0)	726 (93.8)	
Moderately to very difficult	4 (10.8)	44 (6.0)	48 (6.2)	
Would you choose this method again?				.000
Yes	29 (78.4)	683 (93.7)	712 (93.0)	
Would you recommend this method to a friend?				.000
Yes	31 (83.8)	717 (98.0)	748 (97.3)	

Note: All data reported as *n* (%) unless otherwise specified. Percentages shown are valid percent and exclude missing data; there were 7 missing responses for satisfaction with procedure, 6 missing responses for characterization of abortion experience, 14 missing responses for choosing this method again, and 11 mission responses for recommending this method to a friend.

[a] *t* Tests were used for comparisons of proportions, and χ^2 tests were used for comparisons of categorical variables.

likely to report receiving a family planning method at their first visit as compared to women who chose surgical abortion [280 (51%) vs. 1 (4%) of those who received a method, p<.001] (Table 4). The study protocol instructed nurses to follow the standard procedure at their facility for family planning counseling; we did not provide specific instruction about whether to provide family planning to medication abortion clients on the day they received mifepristone. The vast majority of women in both groups who accepted a method received an injectable, most commonly Depo-provera [medication abortion 539 (99%), surgical abortion 27 (97%), p=.128].

4. Discussion

This study sought to examine the feasibility of introducing medication abortion into existing public sector surgical abortion services in RSA and to measure the uptake, safety, effectiveness and acceptability of medication abortion. Study findings indicate that method acceptability was high among women in both groups, although women choosing medication abortion were more enthusiastic about their method choice. Rates of complete abortion, adverse events and serious adverse events in both groups were similar to published international experience and information in the World Health Organization (WHO) guidelines [22]. While many women in both groups experienced side effects, participants overwhelmingly reported satisfaction with their chosen method.

Seventy-six percent of women in both groups received a family planning method at their initial or follow-up study visit. The limited range of methods women had ever used or that were chosen post-abortion indicates there is room to improve contraceptive access by offering a wider range of

Table 4
Family planning uptake by procedure type (as reported at follow-up).

	Surgical abortion (*n*=37)	Medication abortion (*n*=743)	Total (*n*=780)	p Value[a]
Accepted an FP[b] method at abortion facility				.974
Yes	28 (75.7)	553 (75.4)	581 (75.5)	
When FP method received				.000
First visit[c]	1 (3.6)	280 (50.6)	281 (48.4)	
Follow-up visit[c]	27 (96.4)	273 (49.4)	300 (51.6)	
Method received				.128
Injectable[c]	27 (96.4)	539 (97.5)	566 (97.4)	
Pills[c]	0	11 (2.0)	11 (1.9)	
Condoms[c]	0	0	0	
Method not specified[c]	1 (3.6)	3 (0.5)	4 (0.7)	
Would you like to have a child in the future?				.183
Yes	21 (58.3)	494 (68.9)	515 (68.4)	

Note: All data reported as *n* (%) unless otherwise specified. Percentages shown are valid percent and exclude missing data; there were 27 missing responses for wanting a child in the future, and all other questions had 0 missing responses.

[a] *t* tests were used for comparisons of proportions, and χ^2 tests were used for comparisons of categorical variables.

[b] FP, family planning.

[c] Percentages are calculated among the 581 participants who had accepted an FP method at abortion facility.

methods, including long-acting methods, such as IUDs and implants. Further research should address ways to improve access to the full range of methods post-abortion.

Across all intervention sites, an overwhelming majority of women who were eligible for medication abortion chose this abortion method. This may have been a result of several factors, including women's or providers' preferences, recruitment methods, and logistical issues. Importantly, if a woman selected medication abortion at an intervention site she could start her abortion on the same day, whereas women who opted for surgical abortion had to schedule another appointment and return to the clinic approximately 1.5 days later, or sometimes longer depending on the day of the week or caseload in the facility. Providing same-day surgical abortion services would be more convenient and potentially less burdensome for women; streamlined surgical abortion provision in line with recent WHO guidance (which indicates neither ultrasound nor cervical priming nor follow-up is required) [22] could potentially improve access to earlier services and reduce costs to the health service and to women and should be tested and evaluated. Future research should also explore whether high uptake of medication abortion documented in this study is sustained over time as medication abortion services become more common and well known. Anecdotal information from Ipas South Africa, which has been working since 2012 to support the introduction of medication alongside surgical abortion, indicates that medication abortion uptake and interest is consistently high despite there being no dedicated promotion of the service or targeted communications campaign. Ipas's experience and findings from this and previous studies show that women in RSA are interested in medication abortion services, and where the service is made available, a significant proportion of eligible women are likely to opt for medication abortion [18,19].

This study has several limitations. First, 16% of women were lost to follow-up, and loss to follow-up was higher among surgical abortion clients. Although every effort was made to follow-up medication and surgical abortion clients either in person or by telephone, it is impossible to know that women who were not followed up did not experience a complication and seek care elsewhere. However, our adverse event results are similar to those published in the international literature [3,22,23]. Women who chose surgical abortion may have felt less compelled to come for follow-up because South African standard practice does not include a follow-up visit, or they felt confident that their abortion was complete. Second, there may be unmeasured differences between women choosing medication vs. surgical abortion that account for differences in procedure outcomes and experiences. Finally, although KZN is different in some respects from other provinces in RSA, which may limit generalizability of the data outside of that province, abortion service provision is similar across the country, and our approach was based on models for and experience with introducing other services in the public sector. The analysis used data from a random sample of service types in KZN, including peri-urban and urban hospital-based services.

Future analyses of data from the larger study will explore facilities' and providers' experiences offering medication alongside surgical abortion services, facilities' and women's cost of offering or undergoing surgical and medication services, and the impact of offering medication abortion on gestational age at presentation for abortion and on facility operations, comparing intervention and control sites. Medication abortion has the potential to expand access to early abortion and provides women with another choice for safe and effective early abortion. Introduction of medication abortion is underway in a number of South African provinces, and South Africa's experience will provide lessons for other countries working to expand access to medication abortion to improve access to safe abortion services around the world.

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