

Second-Trimester Abortion: Current practices and barriers to service in Ethiopia

Research report submitted to Ipas Ethiopia

December 2010

Addis Ababa, Ethiopia

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Co- investigators: Tibebe Alemayehu, MD, MPH

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Abbreviations

D&C:	dilatation and curettage
D&E:	dilation and evacuation
E&C:	evacuation and curettage
EC	emergency contraception
FDRE:	Federal Democratic Republic of Ethiopia
FTM:	first trimester
FTMA:	first-trimester abortion
FTMP:	first-trimester pregnancy
GA:	gestational age
GP:	general practitioners
HO:	health officers
MVA:	manual vacuum aspiration
NR	nurse
NG	non-governmental
OBGYN:	obstetrician and gynecologist
OPD:	outpatient department
OR:	operation room
PAC:	postabortion care
SA:	safe abortion
STM:	second trimester
STMA:	second-trimester abortion
STMP:	second-trimester pregnancy
TOP:	termination of pregnancy
VA:	vacuum aspiration

Summary

In Ethiopia, the maternal mortality ratio is one of the highest in the world—673 maternal deaths per 100,000 live deliveries—and unsafe abortion is one of the five major causes of maternal deaths (2). In addition to the harm and suffering caused by maternal mortality and morbidity, the socioeconomic burden of unsafe abortion on the individual, family and society is enormous (1;17;23). The reported proportion of STMA in the United States, Nigeria, Canada, Singapore, India and South Africa (10-25%) is lower than in Ethiopia, where about 20-40% of all women seeking abortion services had STMA, and most of them are admitted after unsafe-abortion complications (8;11;24;32).

In June 2006, the Federal Ministry of Health of Ethiopia (FMoH) issued the “Technical and Procedural Guidelines for Safe Abortion Services in Ethiopia” (3). Abortion is defined by the guidelines as termination of pregnancy (TOP) at a gestational age of less than 28 weeks; provision of STMA is permitted in district level hospitals by obstetricians, general practitioners and health officers. While obstetricians can provide TOP in the second trimester based on their pre-service training, general practitioners and health officers are allowed to do so only after additional training.

Delay in abortion care greatly increases the health risks and economic burden experienced by women. Abortions performed after 12 weeks of gestation pose greater risks of medical complications than abortions performed during the first trimester. Abortions performed at 10 weeks or earlier carry a mortality risk of 0.3 per 100,000 abortions. This risk rises with each subsequent week of pregnancy, reaching 12.7 for week 21 and beyond (12).

There are different factors associated with second-trimester abortion that vary in their mix, depending on the society under study. These factors include age, residence, distance, education, ambivalence, late recognition of pregnancy, stigma, poor knowledge of abortion legislation, and availability of facilities, equipment, drugs and trained providers (7;9;10;15; 18;21). The factors for postponing the decision about abortion into the second trimester are influenced by the sociocultural upbringing of the individual.

A richer understanding of the factors that prevent women from obtaining an abortion during the first and second trimesters is useful for determining policy and programmatic interventions that will support comprehensive first- and second-trimester abortion care. In spite of the relatively high proportion of women having STMA in Ethiopia, little is known about the delay factors in STMA on which evidence-based guidelines and programs should be based.

This study had three interrelated parts:

1. In the client/ patient interviews, 27 women at four urban centers were interviewed regarding their abortion experience.
2. The provider interview consisted of a self-administered questionnaire given to 512 providers working in 29 randomly selected hospitals and two health centers or private clinics located within 50 km of the hospitals. At the end of the self-administered questionnaire, the provider was also requested to describe a case history of a woman faced with STMA or unwanted pregnancy s/he encountered. Twenty-five case histories were reported.
3. The facility assessment was focused mainly on the assessment of available facilities, equipment, drugs and guidelines that are needed in the provision of STM abortion care in the randomly sampled 29 hospitals.

After analyzing qualitative and quantitative data from the three sources separately, findings on similar issues were organized together to provide insight from different perspectives. A pre-prepared conceptual frame depicting the evolution of STMA from the time of conception to recognition of pregnancy through first trimester to second trimester was used to guide analysis and reporting. Emerging new issues from the data were also considered and incorporated.

The research proposal was reviewed and approved by the National Ethical Review Committee of Ethiopia. Written consents were obtained from all participating health care providers. Women participating in the client/ patient interviews were interviewed after verbal consent. Consent was also taken from informants for the facility assessments. No individual identifiers were collected.

Most of the delay factors identified from the time of conception through the first- and second-trimester abortions merge into five interrelated major categories:

1. Failure to prevent unwanted pregnancy due to uncertain intention to pregnancy (and contraception use); partner or family pressure; stigma, lack of knowledge and access to contraception; contraceptive method failure, and unexpected sexual exposure following rape or incest.
2. Failure to recognize the pregnancy earlier due to lack of reproductive knowledge (e.g., early symptoms of pregnancy including amenorrhea); irregular menses (due to innate irregularity, lactation, contraception—especially hormonal methods leading to amenorrhea), or inaccessible diagnostic services.
3. Failure to seek FTM-TOP due to ambivalence (hesitation in intention to pregnancy); need for confidentiality (as in rape, incest, extramarital pregnancies); marital disharmony (and partner pressure); unanticipated change in personal circumstances (marital/ partner), or competing personal aspiration (education, profession, economic).
4. Difficulties in accessing abortion care for FTM- and STM-TOP due to distance (from a functional health facility); cost (of abortion care, transportation and other opportunity cost); health system barriers (referrals, guidelines), and socio-cultural issues (e.g., stigma surrounding extramarital sexual relation and pregnancy, abortion, religion).
5. Difficulties in obtaining “woman-centered abortion care (WCAC)” for STM-TOP and PAC services at hospitals due to shortages of trained providers, equipment, drugs, guidelines, etc.

Access and availability barriers were more prominent in STM than FTM abortion care. Even though delays and their underlying factors were coded and analyzed separately, in almost all cases, multiple and overlapping factors influenced the timing of seeking, obtaining and providing services. Addressing the myriad of factors hindering access and availability to safe abortion care requires a multi-pronged strategy (45). In summary, the prevention of unwanted pregnancy through reproductive health education, family planning, early identification of an unwanted pregnancy and accessing early termination of pregnancy could decrease the need for STM abortion care. Additionally, provision of woman-centered and effective/ safe methods of abortion for STM for both TOP and PAC could prevent most of the unnecessary maternal deaths and morbidities and injustice associated with unsafe STM abortion. Based on these findings, the following specific recommendations are proposed:

1. Enhance access to and availability of woman-centered abortion care (WCAC), including diagnostic services, options of recommended FTM- and STM-TOP methods, diversifying service outlets and making services available to vulnerable, poor, rural, and young women for all legal indications such as rape and incest.
2. Provide youth-friendly abortion care (static or outreach programs) that could enable young women to access services early and prevent their need of STM-TOP. Strengthen family life and sexuality education in schools and provide adequate information about reproduction, contraceptive methods, and abortion services to adolescents.
3. Improve access and availability of emergency abortion care (PAC) following spontaneous and unsafe abortions. This is essential at *all levels*. In addition to educating women and the community about symptoms of abortion complications and strengthening early health-care-seeking behavior, enabling community health workers and health centers to provide emergency abortion care and early referral of patients requiring hospital care is essential.
4. Enable all hospitals—especially public hospitals—to provide WCAC, including STM-TOP. Capacity-building initiatives need to prioritize hospitals used for training of obstetricians, general practitioners and health officers in their initiation and scaling-up activities. Capacity-building interventions also should include trainings and provision of equipment, drugs and guidelines.
5. Enable health centers to provide high-quality WCAC (both medical and VA), especially for poor, rural women and those with limited access (e.g., students). At the same time, exploiting the relative accessibility of health centers to the rural and underprivileged women could be extended to STM abortion care through innovative approaches. Ways to bring diagnostic, counseling and abortion care closer to the community include:
 - a. Provision of early STM-TOP at carefully selected health centers staffed with HO.

- b. Provision of evacuation of the uterus as part of STM-PAC.
 - c. Provision of medication abortion by HEW and ability to diagnose pregnancy early (urine pregnancy testing ability), with a backup by a functional health center.
6. Incorporate values clarification in all abortion-care trainings and programs in order to address barriers to access stemming from misinformation, stigmatization of women and providers, and negative attitudes and obstructionist behaviors. Values clarification training engages health-care providers and administrators, policymakers, community members and others in a process of self-examination with the goal of transforming abortion-related attitudes and behaviors in a direction supportive of women seeking abortion, especially women seeking STMA.
 7. Strengthen the theoretical (including the abortion guidelines) and practical training of pre-service training based on professional ethics/conduct and work closely with medical and nursing schools. Enhancing the pre-service training at medical and nursing schools could require various capacity-building initiatives, such as model abortion clinics, updating academic staffs, curricula revision, training materials and skill labs.
 8. Upgrade training and teaching health facilities' clinics to model safe abortion clinics as part of the capacity-building endeavors. At the same time, these facilities could be used for in-service trainings.
 9. Recruit trainees who have positive attitudes about abortion in all in-service abortion-care trainings. The recruitment of providers (obstetricians, GP, and HO) for STM-TOP and identification of hospitals for training should also be well-considered, including how accessible they are to women, especially underprivileged women.
 10. Support the care of women with congenital abnormalities with training in fetal medicine, and with facilities able to provide early diagnosis and screening guidelines.
 11. Establish clear guidelines and referral mechanisms for women requiring TOP, especially STM terminations. This could improve access to and lead to more effective use of limited resources.
 12. Enhance and maintain general awareness and educational activities about the Ethiopian Safe Abortion Guidelines and safe abortion care among all *providers* throughout the health-care system, including those in private facilities (from community level, HEW, to hospitals), program managers and administrators to alleviate misinformation and facilitate program implementation.
 13. Enhance *women's* awareness and understanding of the Ethiopian Safe Abortion Guidelines and safe abortion care, including early recognition and confirmation of pregnancy and the effect of irregular menstruation.
 14. Educate *educators*—as well as media professionals, teachers, health-care providers, HEW and young people—about safe abortion options.
 15. Undertake research projects in collaboration with stakeholders on training approaches and service provision and use of evidence-based findings to update the abortion guidelines and policies.
 16. Advocate for affordable and accessible abortion-care services, especially safe STM abortion care for rural and poor women and students. The advocacy should include working to ensure that the cost of FTM and STM abortion care is similar to the cost of other maternal health services.
 17. Make emergency contraception available over the counter and educate women, especially young women, on the need to use it immediately after unprotected sexual exposure. Primary prevention of unwanted pregnancies through effective FP programs is of paramount importance in decreasing the need for abortion care, even though it won't eliminate all unwanted pregnancies and the need for abortion care.
 18. Address cross-cutting issues in gender such as decision-making, the right to determine when to become pregnant; prevention of sexual violence, and education for girls.

Introduction

The maternal mortality ratio in Ethiopia is one of the highest in the world—673 maternal deaths per 100,000 live deliveries. Unsafe abortion is one of the five major causes of maternal deaths (CSA 2006). Women who survive unsafe abortions suffer various diseases such as chronic pelvic pain, infertility and ectopic pregnancy. In addition to the harm and suffering caused by maternal mortalities and morbidities, the socioeconomic burden of unsafe abortion on the individual, family and society is enormous (Abdella 1996, Salter et al. 1997, Berhan and Abdella 2004). An estimated 382,500 *induced* abortions were performed in Ethiopia, and 53,000 women were treated for complications (Gebreselassle et al. 2010). Almost 58,000 women sought care for complications of *induced or spontaneous* abortion. Forty-one percent had moderate or severe morbidity, such as signs of infection that were likely related to an unsafe abortion (Thaddeus and Maine 1994).

In June 2006, the Federal Ministry of Health of Ethiopia (FMOH) issued “Technical and Procedural Guidelines for Safe Abortion Services in Ethiopia” (FMOH 2006) following the revision of the Penal Code on Abortion in May 2005. Abortion is defined by the guidelines as termination of pregnancy (TOP) at a gestational age of less than 28 weeks, and termination of pregnancy (TOP) is permitted for both first- and second-trimester pregnancies. Provision of second-trimester abortion (STMA) is allowed in hospitals (both private and public) by obstetricians, general practitioners and health officers only. While obstetricians can provide TOP in the second trimester based on their pre-service training, general practitioners and health officers are allowed to do so only after additional training. First-trimester abortion can be undertaken at hospitals and health centers by physicians, health officers, nurses and midwives.

Delay in abortion care greatly increases the health risks and mental stress experienced by women. Abortions performed after 12 weeks of gestation pose greater risks of medical complications than abortions performed during the first trimester (Henshaw 1995). The later in gestation an abortion is performed, the more cervical dilation is needed, the more complex the procedure and the greater the risk of complications. Abortions performed at 10 weeks or earlier carry a mortality risk of 0.3 per 100,000 abortions. This risk rises with each subsequent week of pregnancy, reaching 12.7 for week 21 and beyond (Lawson et al. 1994).

Second-trimester abortions account for over 20% of abortions performed in South Africa, which is greater than other countries with legalized abortion such as the United States and Vietnam, where 12% or less of abortions occur in the second trimester (Harries et al. 2007). The reported proportion of STMA in the United States, Nigeria, Canada, Singapore, India and South Africa (10-25%) was relatively lower (Boland 2010) than in Ethiopia, where about 20-40% of all women seeking abortion services had STMA and most of them are admitted after unsafe-abortion complications (Ipas Ethiopia 2008, Yusuf and Zein 2001, Gebreselassle et al. 2010, Boland 2010).

Currently, the approaches to second-trimester abortion recommended by WHO are dilatation and evacuation and use of repeated doses of prostaglandins with or without mifepristone (WHO 1995). Each of these approaches has advantages and disadvantages. Although, with proper training, the complication rate is low, there is a low but definite risk of serious morbidity and mortality (Rosenfield 1994). Even though published studies on STMA in Ethiopia are unavailable, informal observations indicate that terminations of second-trimester pregnancies are rarely performed in hospitals using dilation and evacuation, hysterotomy or other non-recommended approaches. Recently, medication abortion is available in very few facilities. In countries where STMA services are extremely limited, as in Ethiopia, the complications of second-trimester unsafe abortions are expected to be very high.

Abortion is a semi-urgent care for several reasons: The risk of complications increases with gestation, abortion becomes impossible if it is delayed too long, and most women who have chosen to terminate their pregnancies want to do so as early as possible. Yet, women seeking abortions must cope with a number of barriers that do not obstruct other kinds of semi-urgent medical and surgical care (Henshaw 1995).

Most women who seek second-trimester abortion are illiterate, young, poor and may have changes in their relations with partners. Women who delay induced abortion until the second trimester differ from their counterparts who abort in the first trimester on a number of socioeconomic and psychological factors (Guilbert et al. 1994). There are different factors associated with second trimester abortion that vary in

their mix, depending on the society and research question under study. These factors include young age; residence (distance from facility); fewer years of schooling; ambivalence about the decision to undergo abortion; late recognition of pregnancy; stigma associated with abortion; poor knowledge of abortion legislation; and lack of information on abortion rights (Harrison et al. 2000, Harries et al. 2007, Jewkes et al. 2005, FMOH 2006, Rosenfield 1994, Varkey 2000).

The reasons for postponing a decision on abortion into the second trimester are influenced by the sociocultural upbringing of the individual. In some cases, attitudes toward legal abortion, religiosity, household income, residence patterns and social support for their decision are the more likely reasons for the delay, while for others fear or ignorance of their pregnancy becomes the dominant reason (Lynxwiler and Wilson 1994). In Vietnam, three broad categories of factors influencing delays in obtaining abortions were identified: failure to recognize pregnancy during the first trimester; structural barriers to accessing services earlier; and needing time to make a decision or only deciding to abort after other events had transpired (Gallo and Nghia 2007).

The barriers to women accessing abortion services include lack of *facilities* designated to provide abortion services, particularly in rural areas (Harrison et al. 2000, Harries et al. 2007, Jewkes et al. 2005, FMOH 2006, Varkey 2000). A survey of women with second-trimester abortion in the United States revealed that almost 50% were delayed by the difficulty in making arrangements for the procedure (transportation, finding a provider, funding). Distance from a provider was often a problem, especially for women who need a second-trimester procedure (Henshaw 1995).

A major problem in STMA service is availability of *providers*. Due to limitation of training for second-trimester abortion; emotional issues; the negative connotation of abortion; harassment by opponents of abortion; and even violence, providers do not elect to perform the procedure (Rosenfield 1994). Provider opposition to STMA; high cost of STMA services; and legislation and government regulation are also additional barriers (Harrison et al. 2000, Harris et al. 2007, Jewkes 2005, FMOH 2006, Henshaw 1995, Varkey 2000). Financial limitations make it more difficult for some women to obtain early abortion (Finner et al. 2006, Henshaw 1995).

A richer understanding of the factors that prevent women from obtaining an abortion during the first trimester could be useful for informing interventions that support women in receiving care earlier during their pregnancies. Whereas efforts have to continue to inform and encourage women to seek early abortions, health providers have to be prepared to manage STMA to reduce the health, economic and social consequence that would otherwise result. Understanding reasons for abortion delay may facilitate the improvement of referral networks and promote the development of health education programs that reduce the need for second-trimester abortions.

In Ethiopia, a high proportion of women undertake STMA, which is associated with increased complications and other consequences. But, little is known about why there are such delays. This study was undertaken to identify locally relevant delay factors (at community, client, provider and facility levels) and recommend evidence-based program and policy interventions so as the need for STMA is decreased and safe abortion services are made accessible and available to women per the Ethiopian Safe Abortion Guidelines.

Objectives

The main objective of the study was to assess delay factors in second-trimester abortion care in Ethiopia and recommend evidence-based intervention. The specific objectives were to assess:

1. Delay factors leading to second-trimester abortion (STMA) in Ethiopia;
2. Health-care providers' knowledge, attitudes, and practice regarding STMA in Ethiopia;
3. Preparedness of health facilities in Ethiopia in provision of STMA.

The conceptual frame involves the path a woman undertakes from the time of conception, through pregnancy and to termination, either by abortion or delivery. The main processes and factors that could influence a woman's path are depicted in Figure 1. Due to the interrelated nature of the process and setting, a woman's decision-making and actions are influenced by many factors. Similarly, a number of interrelated delay factors modulate the abortion care provided by a health-care provider at a facility.

Study methods and data collections

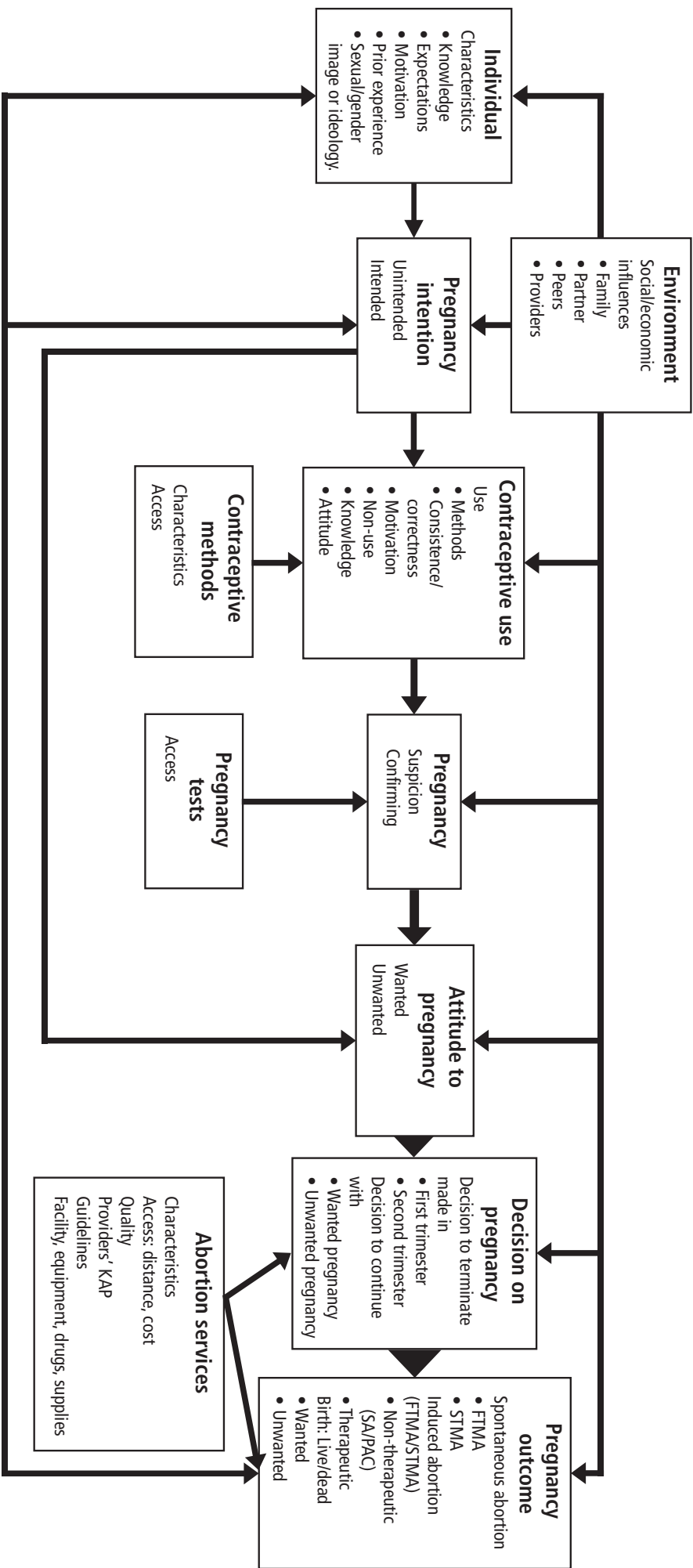
To address the interrelated objectives, both qualitative and quantitative methods were used to collect data from women and health-care providers about their STMA experiences. The health care facility assessment was quantitative data enriched by the observation notes made by the data collector. Depending on the information required, the three data collection methods used were:

1. Client/ patient in-depth interview
2. Provider interview
3. Facility assessment

Client/patient interview

The main purpose of the interview was to describe the experience of women with STMA. Twenty-seven women were interviewed at four sites, using an interview guide. The interview probes into the various delay factors in accessing second-trimester abortion services, be it postabortion care or safe termination, and factors leading to postponement of termination to the second trimester.

Figure 1: Conceptual framework



A *site* included all the health facilities in a city or town. One site in each of the four regional states ¹ was identified based on second-trimester abortion case load: Addis Ababa, Adama (Oromia), Gondar (Amhara), (Axum) Tigray. The number of facilities varied from site to site. In Addis Ababa, participants were recruited from two public and one private hospitals. In the other sites, recruitment was undertaken in the available public hospital (one at each site) except in one instance.

Participants: Women visiting health facilities in one of the four selected *sites* from November to December, 2010, seeking *second-trimester abortion care* were the potential participants. The *second-trimester abortion care* sought could be safe termination of intact pregnancy, or treatment of complications following either an induced or spontaneous abortion. There were 27 participants interviewed at four sites in seven facilities: Addis Ababa (from 4 facilities, n=7), Adama (n=10), Gondar (n=6), and Axum (n=4).

Data collection guide: To conduct the in-depth interviews, a semi-structured guide was developed. The guide was translated to the local language by the interviewers. Each woman's experience was constructed from the time of conception to the time of the interview, including the background characteristics of the woman; her reproductive history; current pregnancy details; when and how pregnancy was suspected and confirmed; why the pregnancy was unwanted; reasons for postponing pregnancy termination to the STM; and delay in accessing abortion services.

Data collection: A potential participant was identified by a recruiter working at a selected health facility and interviewed by the data collector if she was willing to participate in the study. One data collector for each site with previous experience in in-depth interviews was identified. The criteria for selection were based on understanding of the local language and abortion-related issues. The interviewers were two nurses with public health training and two health officers. They were trained in the research protocol including the Ethiopian Abortion Guidelines, abortion in Ethiopia, abortion values-clarification, transcription, interview methodology, translation and data transfer. The training was conducted in Addis Ababa for two days, November 5 and 6, 2010. Once they were at their respective sites after the training, each data collector identified a recruiter from each facility in his/ her site. A recruiter was a health-care worker who was considered to be able to identify women seeking STMA care at his/ her facility as part of his/ her routine work. All recruiters were oriented regarding the research, recruitment criteria, consent and data collection by the data collectors. Consent was obtained by the data collector after the woman expressed her willingness to the recruiter.

Participants were asked to participate and were interviewed at discharge from the facilities or at a post-recovery time when they were comfortable and without distress or pain. Women who declined to participate were not approached by the data collector and their routine treatment care was not influenced by their decision. Willing women were approached by the data collectors who explained the research and consent process. After obtaining consent, the interview was conducted in a comfortable place with visual and auditory privacy.

The interview was recorded and field notes were taken. In the case of clients who did not want to be tape-recorded but were willing to be interviewed, notes only were taken and tape-recording avoided. All recorded tapes and field notes were transcribed and translated at the sites within the first three days of interview. Within 10 days of the interview, a copy of the tapes and transcription were made available to the principal researcher for review and analysis. The researchers supervised the data collection process through close phone communication before and after interviews.

Provider interview

The main purpose of the provider interview was to assess the knowledge, attitude and practice of health care providers regarding second-trimester abortion. In addition, providers were asked to describe case histories they have encountered to capture the experience of women with abortion as depicted by providers. A self-administered questionnaire was used to collect data.

Participant providers: Data for providers' assessment of knowledge, attitude and practice regarding STMA was collected from health care providers in 29 hospitals and 58 health centers or private/ NGO clinics. The hospitals were identified randomly by lottery method out of the all the hospitals in the four regions of

¹ Initially, it was planned to have one site in SNNPR. But due to difficulties the trained data collector faced at the site (Awassa), no interview was conducted.

the study as described in the facility assessment. For each hospital, two satellite health centers or private/NGO clinics were selected with a total of 58 such facilities. The purpose of including such facilities was to explore how STMA clients were handled and referred at primary-health-care outlets. The primary-care facilities were selected based on their location being within 50 km of the hospitals and their involvement in first-trimester abortion care.

In hospitals, the study participants were selected based on their involvement in abortion management (providers working in gynecology departments). All potential participants available and willing during the two-day data collection period were included in the study.

Questionnaire: A semi-structured questionnaire was used for the self-administered anonymous interview. It was pre-tested using providers in a non-participating facility. The questionnaire contained information on socio-demographic characteristics and the provider's experience, attitude, and knowledge regarding abortion in general and specifically second-trimester abortion. Each of the attitude items was scored from 1 (least agreement) to 5 (highest agreement). The total attitude score on 10 items could range from 10 to 50. The items deal mainly on conditions or indications for termination of pregnancy. Separate attitude items that deal with gestational age, termination on "request" or "never at all," payment and referral were also included. Knowledge items deal with understanding of the Ethiopian Safe Abortion Guidelines and recommended methods for STM-TOP.

At the end of the interview, providers were also requested to write a true case history about a woman with STMA they had encountered. These case histories were analyzed with the client interview to enrich the client perspective of delay factors.

Data collection: The data collection was conducted with the facility assessment. Data collection at each hospital was undertaken by one data collector. Eight data collectors were involved in the collection. Two data collectors were assigned for each region except Addis Ababa and Tigray, where data collection was undertaken by one collector each.

All the data collectors were regional coordinators of Ipas Ethiopia. They were oriented on the overall purpose and method of the study and trained on the details of the instrument and data collection processes (including consent for facility assessment) for one day, on February 20, 2010. The data collection was conducted from March to April, 2010. At each region and facility, managers were informed and participants were identified with their collaboration. The potential participants were briefed about the research, and after obtaining consent, the participants were told how to fill in the self-administered anonymous questionnaire. The complete questionnaires were collected within two days of initial contact. The data collection was conducted from April to June 2010.

Facility assessment

Data for facility preparedness was collected using a pre-prepared instrument to assess the human and facility capacities required for STMA.

Facilities: Due to cost and access considerations, data collection for facility assessment (as well as for the provider interviews) was limited to 29 hospitals, which accounted for 21% of all the 138 hospitals in Ethiopia (FMoH 2006). Initially it was proposed to involve 30 hospitals, but one private hospital declined to participate. The hospitals were selected from the 5 regional states of Addis Ababa,

Regions	Hospitals		Total	
	Public	Private*	Hospitals with obstetrics services	Sample
Addis Ababa	2	3	26	5
Amhara	3	2	20	5
Oromia	7	1	31	8
SNNP	5	0	20	5
Tigray	4	0	15	4
Dre-dawa	1	0	3	1
Harar	0	1	4	1
Total	22	7	119	29
*including non-governmental hospitals				

Oromia, Amhara, SNNPR, and Tigray, where more than 80% of the population lives (CSA 2006). The selection of hospitals from each region was made randomly by lottery method and it was proportionate to the total number of hospitals in the region. The sampling frame of the hospitals included all teaching, referral, district/ zonal, public, private/ NGO, and MCH centers. Specialized hospitals that were not providing abortion care (e.g. Amanuel hospital) were excluded. Most of them (n=23) were governmental while the remaining 7 were owned by NGO.

Data collection: The focus of the hospital assessment was on the preparedness of the facility in managing STMA, including complications of abortion (e.g. incomplete, inevitable abortion and uterine perforation) and safe abortion. Hence, the instrument for assessing facility preparedness incorporated availability of protocols, facilities, equipment, drugs and skilled providers required in the provision of STMA services. The listed items were based on the recommendation made by WHO (WHO 1995), and Ipas (Baird et al. 2007).

After officials of the selected hospitals and regional health bureau were informed about the study, one or two knowledgeable staff at each facility was identified as informants. The informants were instructed about the research and asked to assist in the data collection. After obtaining the consent and assistance of the informants, the data collector compiled the 'Facility Assessment Format'. Besides itemizing availability of items in the instrument, the data collectors noted issues that were not captured by the instrument.

Operational definitions

Abortion is defined in line with the Ethiopian Safe Abortion Guidelines (FMoH 2006); it is termination of pregnancy at less than 28 weeks of gestation. In this report, "to 27 weeks" implies gestation of 27 weeks and 6 days.

Postabortion care (PAC) is care provided at a health facility after the abortion process was initiated elsewhere, be it spontaneously or induced. The clinical stage could be incomplete, inevitable, threatened or missed.

Abortion-care experience (experience) is measured by whether a provider had previously performed uterine evacuation for abortion care.

First-trimester pregnancy (FTM) was defined as a pregnancy of fewer than 13 weeks of gestation as determined by the attending health-care providers.

Second-trimester pregnancy (STM) was defined as a pregnancy of 13 to 27 weeks of gestation as determined by the attending health-care providers.

Early second-trimester (Early-STM) is a pregnancy of 13 to 20 weeks gestation

Late second-trimester (Late-STM) is a pregnancy of 21 to 27 weeks gestation

Data entry and analysis

Quantitative data collected from the provider interviews and facility assessments were entered and analyzed using EPI INFO statistical software. Simple descriptive statistics, tables and association were calculated as appropriate.

Qualitative data were mainly collected from the in-depth client/ patient interviews and case histories from provider interviews. Transcription and translation into English of tape-recorded interviews with clients/ patients was conducted within three days of data collection by data collectors and reviewed and analyzed by the researchers within the following 10 days.

The qualitative data analysis was undertaken within the hypothetical conceptual framework discussed previously. Based on the key concepts of the hypothetical conceptual framework, thematic areas and codes were developed. Content and exploratory analysis were undertaken to see emerging patterns. Some of quoted statements were reorganized in order to capture data from different portions of the interview in a concise data display.

Ethical issues

The research proposal was reviewed and approved by the National Ethical Review Committee (NERC), Ministry of Science and Technology, Federal Democratic Republic of Ethiopia. The research was also explained to all concerned regional health bureaus, medical directors and department/ unit heads to secure their approval, permission and collaboration. All consents had English and Amharic versions. Written and verbal consents were obtained from all participating health-care providers. Verbal consent was obtained from women participating in the client/ patient interviews. Other than general background of the participants, no specific identifiers (such as names, house or phone numbers) were documented. Women participants in the client interview were reimbursed for their travel and time spent for the interview. All women who consented for the interview but did not want to be tape-recorded were interviewed without tape recording.

Results

The qualitative data were generated from the interviews conducted with abortion client/ patients and health-care providers. The qualitative data will be presented following the quantitative data from the provider interviews and facility assessments. The result is presented in chronological order to display delays, from decision-making to accessing services.

Client interviews and case histories

Background of participating clients

Twenty-seven participants were interviewed at four sites in seven facilities: Addis Ababa (from 4 facilities, n=7), Adama (n=10), Gondar (n=6), and Axum (n=4).

Most of the participants (n=22) were seen for safe termination, 19 of which were for “non-therapeutic” indications such as rape and incest, while the remaining three were for “therapeutic” indications such as anencephaly and intrauterine fetal death. Eighteen of the participants had pregnancies of 18 weeks or less while the remaining nine were more than 18 weeks of gestation.

Table I summarizes their socio-demographic and reproductive characteristics. Most of the interviewees were in the age group of 19-35 years (n=24), urban resident (n=20), Christians (n=21), housewives (n=10), students (n=7), and of secondary and above education (n=17).

Table I: Socio-demographic and reproductive characteristics of client interview participants			
Characteristics	Number	Characteristics	Number
Age		Religion	
<18	3	Islam	6
19 -35	24	Christianity	21
Residence		Occupation	
Urban	20	Housewife	10
Rural	7	Student	7
		Others*	10
Marital status		Education	
Married	10	Illiterate	6
Unmarried	14	Primary	4
Divorced	3	Secondary	11
		Higher	6
* Others include daily laborer (n=1), maid (n=2), merchant (n=3), sex vender (n=2), and no work (n=2)			

The current pregnancy was the first one for 16 of them, while seven had their second pregnancy. The remaining had three or more pregnancies including the current pregnancy. Six had previous abortions, five of which were spontaneous and one which was induced.

The results of the qualitative data generated from the client/ patients interviews seeking abortion care and the case histories reported by providers described multiple and overlapping factors that influenced the

timing of receiving and providing services. Overall, the factors were presented with a focus on three major thematic areas:

Delay in preventing unwanted pregnancy

Delay in confirming pregnancy and seeking FTM abortion

Delay in accessing STM-TOP and STM-PAC

Delay in preventing unwanted pregnancy

The client's intention about pregnancy is one of the determinants for contraceptive use. Abortion clients fall into three main groups based on their intention of pregnancy: women with or without intention, and a third group incorporating women with uncertain intention.

Women with no intention of pregnancy: Married and unmarried women had unwanted pregnancies after forced sexual encounters and incest. A rural married woman, who was raped while her husband was elsewhere and got pregnant, delayed termination because she had to keep the assault and pregnancy secret from her "neighbors." Providers also described women with no intention of having sexual relations and pregnancy who got pregnant following rape or incest. Two of the women who had pregnancies following incest were nineteen years old, unmarried and in the ninth grade.

"She was living in a rural area. Her family rented a house for her and her cousin in the town because it was difficult to travel daily to her school. The school was far from her family residence. Unfortunately, once she had sex with her cousin and she became pregnant. To terminate the pregnancy, she tried different traditional medicines but none worked. With each attempt, the pregnancy increased in size [to the second trimester] at which time she decided and visited the health center."

(Reported by a nurse working in a health center)

"She was living with her brother in a rented house outside their hometown. Both were high school students. Their parents supported them with money and food. Both had no any other source of money. One day, while they were studying, they had (sexual) contact and she got pregnant. The pregnancy advanced to seven months because she was not aware of it. Because she did not want to tell that the pregnancy was from her brother, it took her longer time Late in her pregnancy, she came to the clinic with her friend. Because I was not able to undertake [the termination], I sent them to hospital [which was more than 100 km from the town]. The termination was not possible [not provided] at the hospital. Later, I heard that she took poison and died... I felt bad"

(Reported by a health officer working at a private clinic)

Some women with no intention of pregnancy were not using contraception at the time of conception due to lack of knowledge or the belief it would not happen to them.

"I was not using contraception. I did not think I would be pregnant, I have never used contraception and I didn't know about contraceptive. I did not want the pregnancy from the beginning. I was living outside [my hometown] and the pregnancy was outside marriage ... just from a friend ... a new friend who won't support me at all."

(Unmarried woman, 32 years old, private occupation)

"I was living alone [with no boyfriend]. My girlfriends asked me to be a friend of one of their boyfriend. I said, 'No, I don't want this type of relationship'. I am seventh-grade student and I want to continue with learning... They pressured me to join them. They said. 'We are missing good recreation time because of you.' At last, I joined them. We used to entertain ourselves until midnight as a group and later I continue with him [boyfriend] alone. One day, we stayed up to 3:00 am and, then after, we passed the night in a hotel but we had no [sexual] contact. The next day, he invited me. I accepted his invitation because I was embarrassed to say no. We spent the night together and also had sexual contact using condom through night. Early in the morning, he forced me to do sex without condom. I said, 'No!' I told him, 'I haven't taken injection or pill [contraceptives]'. He held my hands and legs forcefully and he did it. I didn't expect pregnancy just after one contact."

(Divorced woman, 25 years old, housemaid, urban)

Women with no intention of pregnancy who were using contraceptives could also have unwanted pregnancies due to various reasons including method or use failure. A 20-year-old university student got pregnant because she missed taking her contraceptive pill while on travel. Another woman thought that the protective effect of injectables would remain for some time beyond the scheduled time for the next injection. A third woman got pregnant due to breakage of the condom.

Women with intention of pregnancy: Some women who had the intention of pregnancy and got pregnant sought STM-TOP because of changing life events such as divorce. The cases are discussed under '*Delay in confirming and seeking abortion early*'.

Women with uncertain intention of pregnancy: The third group of women included women who expressed uncertain intention regarding pregnancy. Three women became pregnant due to partner pressure or marital disharmony. The protracted uncertainty and delayed decision of abortion necessitated second-trimester termination.

"He didn't believe me. Now again he said 'You should be pregnant'. My idea was to consider having children if he was in peace with me.... [I have no intention to be pregnant again because] I did not yet have any career. I am not yet able to support myself. I was using [contraceptive] injections every three months for the last two years. But now I have stopped using contraceptive because he nagged me. I stopped using contraception for his interest.... But he forced me to have a child."

(Rural married woman, 25 years old)

"He [her partner] wanted to have children from me, but I have a different problem.... I wanted to go back out of town [for work]..."

(Urban married woman, 20 years old)

Delay in confirming pregnancy and seeking FTM abortion

Delay in suspecting and recognizing pregnancy early: Some women failed to identify pregnancy before 12 weeks of gestation for various reasons and by the time they suspected and confirmed pregnancy, the pregnancy had progressed into the second trimester. One of the common reasons was failure to suspect pregnancy due to irregular menstrual cycle. Besides the innate menstrual irregularities, some women had irregularities associated with hormonal contraception that could lull them to late suspicion.

"My breasts got larger and I asked my girlfriends. She advised me to be tested. My menstruation used to come every four months. I had sexual contact only once... and I didn't suspect pregnancy!"

(Divorced urban woman, 25 years old, housemaid)

"When I became pregnant, I dislike food and what I see. After two months of cessation of my menses, I went to the [nearest] hospital ... and I was said to be pregnant I doubted pregnancy... because I was using contraceptive injection.... I thought it [the injectable] might work for some time even after stopping it...."

(Rural housewife, 25 years old)

"I suspected pregnancy later after two months of missing periods.... I used to miss my periods before, without pregnancy. At the nearby private clinic, they took blood and urine and they said, 'Pregnancy is present'. This was at end of fourth and beginning of fifth month."

(Urban housewife, 25 years old)

Lack of knowledge regarding pregnancy symptoms and lactation were mentioned by some women as the reasons for late suspicion and confirmation of pregnancy. One woman had pregnancy symptoms but mistakenly attributed them to other health conditions. Denial of pregnancy based on non-reliable facts or late symptoms of pregnancy (fetal movement) while symptoms indicating pregnancy was also given by one woman.

"I didn't have the intention to be pregnant.... I was not using contraception because I was breastfeeding my baby. I heard if you are breast feeding no pregnancy will be created and there will be no menstruation. I don't know about contraceptive methods I have not used [them] before."

(Urban housewife, 20 years old)

"After treatment for gastritis and kidney disease [which were early symptoms of pregnancy], I wanted to go back out of town (for work). I went to a clinic.... I used to miss my periods before, without pregnancy. "

(25 years old, housewife, urban)

Delay in confirming and seeking abortion early: Some women recognized pregnancy early but their decision to terminate was protracted. Women hesitated to make a decision because of difficulties in reconciling conflicting social norms or socioeconomic conditions with their desires regarding the pregnancy and their aspirations. Some of the reasons for hesitation were similar to the uncertainty of intention of getting pregnant that were described above under "*delays in prevention of unwanted pregnancy*". The uncertainty of intention towards the pregnancy could delay confirmation of pregnancy and delay seeking TOP early in the FTM.

Women might have been initially ambivalent about the pregnancy as a result of discordant demands from cultural mores, economic realities or educational aspirations, and this ambivalence could have delayed their decision to confirm pregnancy and seek an abortion. An unmarried woman recognized pregnancy early but feared the family and social consequences of pregnancy outside marriage. These conflicting forces—cultural norms against premarital intercourse or having a child out of wedlock, combined with "moral skepticism" regarding the practice of abortion or a desire to continue the pregnancy—could have caused women to hesitate in getting support and reaching a decision to abort.

Two women delayed confirming pregnancy due to financial shortages, work or education opportunities.

"I didn't want the pregnancy to be known by anyone. Hence, I didn't get any advice from my relatives and friends. I didn't get any support from my family. I didn't ask for help. I didn't know where to go. All of my family members and friends respect me. They think I am innocent. Hence, I was afraid to tell them; I don't want my brother know about my condition."

(Unmarried urban woman, 32 years old, unemployed)

"I had nausea, vomiting, loss of appetite, abdominal pain and my abdomen was tense, so I suspected pregnancy. I knew it was pregnancy at two months because these signs were similar to my first pregnancy. [But] I did not confirm pregnancy.... due to lack of money."

(Rural housewife, 25 years old)

"At the first month of the gestation, I decided to terminate. I delayed the termination because of lack of money.... Besides, we [just had] started class [education]; and I was afraid of my friends .."

(Urban housewife, 25 years old)

While some women required a lengthy process for deciding on a course of action because of the complexity of the abortion decision, in other cases the late timing of abortion was due to a change in their decision about the pregnancy after other events had transpired.

"I was not using contraception before this pregnancy, because I had the intention to be pregnant... We [she and her partner] agreed on the pregnancy.... Then he changed his behavior; he became distant [secluded himself] from me; he stopped responding to my telephone calls. My phone calls were answered [picked up] by some other persons. This...made me change my mind [about the pregnancy]. By the end of the third month, I did not want to continue with the pregnancy.... He [her partner] is useless and of no use for me "

(Unmarried woman, 32 years old)

"At first, a 25-year-old married woman who was not using any contraception presented at our hospital requesting termination of her fifth pregnancy. At the sixth month of pregnancy, she learnt that her husband had married another woman and, hence, she did not want the pregnancy to continue. Initially, she was advised to continue with pregnancy. [Because she insisted]...I referred her for termination. But later, she presented after she had an unsafe abortion ... and developed complications, hemorrhage and sepsis with perforation ... She had a hysterectomy. ... She divorced her husband."

(Reported by a health officer working in a public hospital)

Other causes for ambivalence include education and employment opportunities. In addition to such personal reasons, structural barriers like distance and service availability affect confirmation and

termination of pregnancy early in the FTM. It should be noted that, relatively, confirmation of pregnancy in the STM is easier than in FTM. On the other hand, accessing TOP in the STM is much more difficult than in the FTM. Based on the Ethiopian Safe Abortion Guidelines, FTM-TOP can be provided by mid-level providers and at health centers and hospitals, while STM-TOP is limited to hospitals and has to be provided by obstetricians or trained general practitioners and health officers.

Delay in accessing second-trimester abortion care

Lack of knowledge, especially where to get STM-TOP, and the need for confidentiality—which is intimately associated with unwanted pregnancy and abortion—compels women to seek unsafe abortion or delay the treatment of life-endangering complications. The findings revealed by women living in Addis Ababa, where public and private hospitals are the most available, vividly illustrate the dangerous path women were forced to undertake due to the lack of information and need for confidentiality.

“At the fourth month [of pregnancy], I decided to abort and it took me two weeks. I didn’t want the pregnancy to be known by anyone..... I had no money and nowhere to go. If it was three months, I could go to a health center. I know the health center performs TOP up to three months When it is more than that, I didn’t know where to go I was anxious and stressed I did not know where to go Moreover, I didn’t want to ask any one [so that no one would know about the extramarital pregnancy].... First I went to the house of one female provider. She was not a health worker. She inserted a stick into my uterus. With the stick, I went home. After two days, it started bleeding. Initially, I tolerated the bleeding... then clotted blood started to come out in slices/ big pieces.... When bleeding became heavy, I came to this hospital.”

(Unmarried woman, 32 years old)

“The day before yesterday, I had blood on my underwear, followed by slices of blood clots.... I was told that this hospital is ‘closed’ during weekend days [which was misinformation] ... so I went to a clinic [non-governmental]. At the clinic, they told me that the pregnancy was four months and they could not treat me..... They referred me to this hospital.”

(Married woman with STM spontaneous abortion)

A number of case histories were reported by providers working at remote health centers and hospitals where second-trimester (and in some of them first-trimester) abortion care was not provided. In some of these facilities, FTM-TOP was not also provided. Two of the stories reported by providers at health centers reflect the desperate situations women requiring STM abortion care are left with—especially those living in rural areas.

“... She was 18 years old, ninth grade, presented at the health center with a 16-week unwanted pregnancy requesting termination. She was referred to the nearby hospital but she could not go to the hospital because she was a student from a poor family and ashamed [of her extramarital pregnancy]. She went to a nearby traditional abortion provider, who inserted a sharp stick into her uterus. Her uterus was perforated and she came back to the health center with fever, chills, peritonitis, shock, vaginal bleeding and sepsis. She was again referred to the nearby hospital, but she passed away. This shows the consequence of lack of trained persons at the health center to manage and terminate early pregnancy as needed based on the Guidelines of the Ministry of Health”

(Reported by a health officer at a health center)

“A 27-year-old...divorced lady came from a rural area 12 km from the health center. She was seventh grade. The pregnancy was unwanted, unplanned and unsupported. She was not using contraception. She was unable to come to our health center earlier (in the FTM to have SA) due to economic problems. She was referred to the nearby hospital because the pregnancy was advanced (STMP) but she could not go to the hospital [due to financial constraints].”

(Reported by a health officer at a health center)

Generally the cost of STM abortion care was found to be high by women seeking the care. Service fees could contribute to an increase in gestational age at the time of abortion. The gestational age of one woman’s pregnancy was pushed to STM while she was trying to save some money for abortion care. She lost a substantial portion of her savings at a facility providing FTM but not STM abortion care. Since she did not know where to go next for STM-TOP and could not manage its cost, she decided to continue with

the unwanted pregnancy. Some women were lucky to have relatives to assist them in the payment.

"They said that the pregnancy is above three months and that I have to go to another place. They said it cannot be done here and I have to go to another place. I don't know where to go now [for a STMP]. In this clinic, they said 'We give service only up to three months. They referred me ... After they examined me, they said 'This is big ... more than three monthswe can't manage it' and then they referred me. I spent so far 20 Birr [and I cannot afford the hospital cost with the remaining money]."
(Married urban woman, 20 years old)

"(I paid so far) 950 Birr [My relatives also paid at the hospital but]... I didn't ask them how much they paid in this hospital"
(Married rural woman, 20 years old)

"First when I took the drug and the pregnancy was not aborted, I felt heartbroken and cried. When they asked me to pay so much of money for the procedure, I wept The students who had practical training at the hospital were also sad. At the end, the physician reassured me. He said, 'No problem, I will give you the drugs.' He asked me to be patient and return on Thursday.... So far, I paid 120 Birr..."
(Unmarried urban student, 20 years old)

Delays in abortion care were not limited to delays in decision-making to seek medical care and delays due to access (distance, cost, etc). Various issues within the health system and quality of care were also noted by some of the participants. At a district hospital which was not prepared to provide PAC for STMA, the referral of a woman with spontaneous abortion in the STM was delayed for two weeks. The referral was made to another hospital that was more than 100 km from the referring hospital. A woman who needed an emergency laparotomy for uterine perforation and intestine injury following evacuation had to suffer for more than a day by referrals from one facility to another in the same city. A third case also depicts the fact that even after reaching at the referred hospital, the referral won't guarantee provision of STM-TOP. Further, a client requesting STM-TOP at a hospital had to wait for a month to get the service. Another woman who presented to a hospital with bleeding following unsafe abortion was sent for laboratory investigation rather than immediate emergency care.

"... Then I started to bleed... for two weeks..... At about four months and two weeks.... I went to the [district] hospital where I had follow up. I told them, 'I didn't get better'. Doctors saw me and told me that the fetus will not survive. Then they referred me to this hospital. Then we arranged a car...."
(Rural married woman, 20 years old, STM spontaneous abortion following quinine treatment for malaria)

"I had the pregnancy removed by metallic instruments. Later [that day], at my home, I felt severe abdominal pain. Hence, I went to a private clinic [not a hospital], where I was admitted for one day and given 'glucose'. Later [a day after admission], they referred me to a hospital where I was given 'glucose'. I was vomiting and they ignored me. At last, they told me that there was no bed and referred me to this hospital. I was admitted and had an operation. I was told that my uterus and intestine were repaired."
(Unmarried urban woman, 32 years old)

"An 18-year-old unmarried woman living 10 km from [this] town got pregnant after being raped by the husband of the woman she was working for as a housemaid. She was not using contraception. At presentation, she had a 24-week pregnancy. She didn't recognized pregnancy until recently. The wife of the man advised her to go to the health center where the pregnancy was confirmed.... The pregnancy was [after rape and] unwanted. Besides, she didn't have a 'permanent' residence because she was a housemaid. The gynecologist of the hospital did not agree to perform the TOP at this [late] gestation... The woman was left with the pregnancy."
(Reported by a health officer at a health center)

"I came to the hospital, and had 'OPD patient card' but the transfer to the OPD was delayed. At the OPD, the diagnosis was made and then I was transferred to the ward. It took about one month and two days."
(20 years old student, unmarried, urban)

"Firstly, even they didn't know. They sent me for some laboratory investigations. Then, I told them about my condition. I told them about my pregnancy. Then they wrote something to this place (gynecology ward)."

(25 years old, divorced, urban woman who had unsafe abortion)

The diagnosis of congenital abnormalities was made late due to limitation of diagnostic means. A woman in Addis Ababa who had ANC and earlier US examination was told to have a fetus with congenital abnormality late in the STM. Another similar case was also reported from another hospital in Addis Ababa:

"She was 28 years old...with one spontaneous abortion. She was attending ANC when anencephaly was diagnosed at 26 weeks of gestation. The pregnancy was wanted but terminated using misoprostol repeated dose."

(Reported by HO from a public hospital)

Provider interviews

Background characteristics of participating providers

Five hundred and twelve health care providers completed the self-administered questionnaires. Most of the providers (75.4%) were nurses. General practitioners and obstetricians accounted for 7% and 3.7% of the participants, respectively. Eighty-five percent were working in public health facilities (54.3% in health centers and 30.7% in hospitals). Providers from public and private hospitals accounted for 40.5% of all the participants. Most of the nurses (59.3%) and health officers (64.8%) were working in health centers. On the other hand, most of the general practitioners (83.3%) and obstetricians (84.2%) were from public hospitals (Table II).

Table II: Distribution of participants by work place and professional category					
Professional category	Public facilities		Private/NG facilities		Total (%)
	Health centers	Hospitals	Clinics	Hospitals	
Nurse	229 (59.3)	94 (24.4)	20 (05.2)	43 (11.1)	386 (75.99)
Health officer	46 (64.8%)	17 (23.9)	6 (08.5)	2 (02.8)	71 (13.9)
General practitioner	3 (08.3%)	30 (83.3%)	3 (05.6%)	1 (2.8%)	36 (07.0)
Obstetricians	0	16 (84.2)	0	3 (15.8)	19 (03.7)
Total (%)	278 (54.3)	157 (30.7)	28 (0.5)	49 (09.6)	512 (100)

Most of them were younger than 30 years of age (63.1%) with a mean ($\pm 1SD$) of 29.6 ± 8.1 years and were Orthodox Christians (63.1%). Almost half of them were also married and females. Most were from Oromia (32.5%) and Amara (24.3%) while the proportions of participants from the remaining three regions were from 12% to 16% (Table III).

Table III: Socio-demographic characteristics of health-care providers who participated in the provider interviews							
Characteristics		Number** (%)		Characteristics		Number** (%)	
Age				Religion			
19 – 24		142 (28.6)		Islam		56 (11.0)	
25 – 29		171 (34.5)		Orthodox		322 (63.1)	
30 – 39		116 (23.4)		Protestant		120 (23.5)	
40 – 61		67 (13.5)		Others		12 (02.4)	
Sex				Region			
Female		272 (54.1)		City admin*		75 (14.7)	
Male		231 (45.9)		Amara		124 (24.3)	
Marital status				Oromia		166 (32.5)	
Married		250 (49.1)		SNNP		83 (16.2)	
Unmarried		248 (48.7)		Tigray		63 (12.3)	
Separated		11 (02.2)					
* City administrative which includes Addis Ababa, Harar and Dre-Dawa							
** Due to missing values total varies between 496 to 511							

Experience in uterine evacuation

Table IV depicts providers' experience in providing uterine evacuation as part of abortion care. Over all, most of the providers (60.1%) had never provided evacuation, while 39.9% of them had ever performed uterine evacuation for abortion care. As expected, all obstetricians had provided the procedure. Most general practitioners (86.1%) and health officers (60.9%) also had performed the procedures. The least experience (28.8%) was found among nurses (Tables IV).

Table IV: Experience of health care workers who had ever evacuated the uterus for abortion care and performed recent TOP in the FTM and STM					
Evacuation performed by type of abortion	Categories of health care providers				
	OBGYN No. (%)	GP No. (%)	HO No. (%)	Nurse No. (%)	Total No. (%)
Post abortion care – PAC (inevitable/ incomplete abortion)					
FTM PAC					
Ever evacuated	19 (100)	31 (86.1)	38 (55.1)	92 (24.1)	180 (35.6)
STM PAC					
Ever evacuated	19 (100)	28 (77.8)	22 (32.4)	23 (06.0)	92 (18.2)
Termination of pregnancy (TOP)					
FTM TOP					
Ever performed TOP	18 (94.7)	21 (58.3)	27 (39.7)	85 (22.3)	151 (29.9)
Recent performed TOP	13 (07.7)	9 (25.0)	20 (28.2)	56 (14.5)	98 (19.1)
STM TOP					
Ever performed TOP	18 (94.7)	13 (36.1)	6 (08.8)	21 (05.5)	58 (11.5)
Recent performed TOP	11 (58.9)	5 (13.9)	2 (02.8)	13 (03.4)	31 (06.1)
Ever evacuation for TOP or PAC IN FTMP or STMP					
Ever evacuated	19/19	31 (86.1)	42 (60.9)	110 (28.8)	202 (39.9)

The proportion of providers who had 'ever performed' uterine evacuation was higher among providers working in hospitals (52%) than health centers and clinics (31.7%). While the proportion among providers in public hospitals (56.4%) was higher than private hospitals (36.7%), it was lesser among providers in public health centers (29.1%) than private clinics (59.3%).

The proportion of providers with TOP experience was lesser than those with PAC: Among all the providers, the proportion decreased from 35.6% in FTM-PAC to 29.9% for FTM-TOP, while it decreased from 18.2% in STM-PAC to 11.5% in STM-TOP. This overall decreasing pattern was also seen at each professional category.

While about 40% of the providers had experience in providing uterine evacuation, the proportion of providers involved in the provision of TOP was very low (19.1 %). The proportion of providers with recent experience in FTM-TOP was highest among the health officers (28.2%) and general practitioners (25.0%); the least being among nurse (14.5%) and obstetricians (07.7%). On the other hand, recent experience in STM-TOP was highest among obstetrician (58.9%) followed by GPs (13.9%).

TOP requests and provision

Table V summarizes requests made by women faced with unwanted pregnancies for TOP to providers in the last three months before the interview. Most of the FTM-TOP requests (81.1%) were made to providers working in public facilities (health centers: 43.1% and hospitals: 37.0%) and the remaining (19.9%) in private facilities (clinics: 11.5% and hospitals: 8.4%). Similar proportion of STM-TOP requests (78.7%) were forwarded to public facilities (health centers: 37.6% and hospitals: 41.1%) while the remaining (21.4 %) of them were made to private facilities (clinics: 14.6% and hospitals: 6.8%).

Table V: Requested for TOP made to providers in last 3 months before the interview				
TOP requests made to providers				
FTM TOP by facility types	HO/GP	Nurse	OBGYN	Total
Health center	328 (33.7)	1135 (50.8)		1463 (43.1)
Private clinic	157 (16.1)	235 (10.5)		392 (11.5)
Public hospital	470 (48.3)	660 (29.5)	128 (67.4)	1258 (37.0)
Private hospital	18 (01.8)	205 (09.2)	62 (32.6)	285 (08.4)
Total FTM-TOP	973 (28.7)	2235 (65.8)	190 (05.6)	3398
STM TOP by facility types	HO/GP	Nurse	OBGYN	Total
Health center	73 (24.2)	359 (47.4)		432 (37.6)
Private clinic	47 (15.6)	120 (15.9)		167 (14.6)
Public hospital	179 (59.3)	225 (29.7)	69 (75.8)	473 (41.1)
Private hospital	3 (01.0)	53 (07.0)	22 (24.2)	78 (06.8)
Total STM-TOP	302 (37.8)	757 (65.8)	91 (07.9)	1150
All FTM and STM requests	1275 (28.0)	2992 (65.8)	281 (06.2)	4548 (100.)

It should be noted that 52.2% of the requests for STM-TOP were made to facilities not permitted to undertake STM-TOP: health centers (37.6%) and private clinics (14.6%). Even though the fate of these pregnancies could not be stated with absolute certainty, the possible fates could be deduced based on what the providers had advised women after declining to provide the requested TOP and the true case histories provided by providers. The advice and counseling provided are summarized under the section on “*Actions and counseling*” while the case histories are described under “*Client interviews and case histories*”.

Table VI: Requested TOP made to providers in the last 3 months before the interview that were NOT provided				
TOP requested but NOT provided				
FTM TOP by facility types	HO/GP	Nurse	OBGYN	Total
Health center	246 (75.5)	746 (65.7)		992 (67.8)
Private clinic	47 (29.9)	108 (46.0)		155 (39.5)
Public hospital	256 (54.5)	254 (38.5)	50 (39.1)	560 (44.5)
Private hospital	18 (100.)	76 (37.1)	0 (00.0)	94 (33.0)
Total FTM-TOP	567 (58.3)	1184 (53.0)	50 (26.3)	1801 (53.0)
STM TOP by facility types	HO/GP	Nurse	OBGYN	Total
Health center	73 (100.)	354 (98.6)		427 (98.8)
Private clinic	47 (100.)	120 (100.)		167 (100)
Public hospital	133 (74.3)	191 (84.9)	36 (52.2)	360 (76.1)
Private hospital	3 (100.)	41 (77.4)	8 (36.4)	52 (66.7)
Total STM-TOP	256 (84.8)	706 (93.3)	44 (48.4)	1006 (87.5)
All FTM and STM requests	823 (64.5)	1890 (63.2)	94 (33.5)	2807 (61.7)

Table VI shows the number of abortion requests made to providers three months before the interview that were not provided for various reasons. A total of 4,548 requests were made to 296 (57.8%) providers. On the average, about 15 requests were made to each of the 296 providers but 9.5% of them were rejected (not provided)². Most of the 4,548 requests (n=2807, 61.7%) were not provided. While half (53%) of the FTM-TOP requests were not provided, a significantly higher proportion (87.5%) of the STM-TOP requests was not provided (OR: 1.65; 95% CI: 1.49-1.83). The rejection of FTM-TOP requests was highest at health centers (67.8%) followed by public hospitals (44.5%) and private clinics (39.5%). The rejection was least at private hospitals (33%). The rejection of STMA requests was higher in public (76.1%) than private (66.7%) hospitals.

Among the 296 providers who were recently requested TOP, 98 (33.1%) had provided some or all of the requests. Overall, the rejection of requests for FTM-TOP was least among obstetricians (26.3%). The rejection ranged from 53% to 58% among the other three professional categories. The rejection was highest among HO and GP working at private clinics (100%) and health centers (75.5%) and nurses working at health centers (65.7%). As expected, rejection of STM-TOP was lower among obstetricians (33.5%) than the other providers (63.2% -64.5%).

Uterine evacuation methods

In both PAC and TOP in the FTM, vacuum aspiration (VA) was the most commonly used method of evacuation (> 62%) by all providers except nurses). For FTM-TOP, nurses used MA (48.1%) and VA (40.7%) commonly. For STM-PAC, VA (5 %) and medical methods (5 %) were used very rarely, while surgical methods were the most commonly (76.7%) used ones.

² Among all providers, i.e. including those who reported not to be requested (n=512), the average requests were 8.9 per provider and 5.9 were not provided.

Table VII: Uterine evacuation methods commonly used in abortion care by professional category and type of abortions					
Abortion types by evacuation method	Professional categories				
	OBGYN	GP	HO	Nurse	Total (%)
Postabortion care in first trimester (FTM-PAC)					
Vacuum	17 (100)	17 (70.8)	18 (72.0)	40 (76.9)	92 (78.0)
Medical	0 (00.0)	0 (00.0)	0 (00.0)	4 (7.7%)	4 (03.4)
Sharp metallic	0 (00.0)	7 (29.2)	7 (28.0)	8 (15.4)	22 (18.6)
Postabortion care in second trimester (STM-PAC)					
Vacuum	0 (00.0)	0 (00.0)	0 (00.0)	3 (23.1)	3 (05.0)
Medical	1 (06.7)	1 (04.8)	0 (00.0)	1 (07.7)	3 (05.0)
Surgical (E&C)	13 (86.7)	16 (76.2)	9 (81.8)	8 (61.5)	46 (76.7)
Others	1 (06.7)	4 (19.0)	2 (18.2)	1 (07.7)	8 (13.3)
Termination in first trimester of pregnancy (FTM-TOP)					
Vacuum	13 (81.3)	8 (61.5)	13 (72.2)	22 (40.7)	56 (55.4)
Medical	2 (12.5)	2 (15.4)	4 (22.2)	26 (48.1)	34 (33.7)
Sharp metallic & others	1 (06.2)	3 (23.1)	1 (05.6)	6 (11.2)	11 (10.9)
Termination in second trimester of pregnancy (STM-TOP)					
Medical	12 (75.0)	4 (57.1)	0 (0.00)	7 (77.8)	23 (65.7)
Surgical (D&E)	0 (00.0)	3 (42.9)	0 (00.0)	1 (11.1)	4 (11.4)
Catheter, hysterotomy etc)	4 (25.0)	0 (00.0)	3 (100)	1 (11.1)	8 (22.9)

The non-recommended method use in the FTM (i.e., sharp metallic curettage) was more common in PAC (18.6%) than in TOP (10.9%). On the other hand, use of non-recommended methods in the STM was higher in TOP (22.9%) than PAC (13.3%). Use of non-recommended methods was higher in the STM abortion care for in both PAC and TOP than in FTM abortion care (Tables VII).

Barriers in providing abortion care

Among the 304 (60.1%) providers who had never provided uterine evacuation, 272 (89.5%) gave 330³ reasons for never providing uterine evacuation. Most of the providers (n=243) were nurses and the remaining 29 were general practitioners (n=4) and health officers (Singh et al. 2010). The 330 reasons were categorized into four main thematic areas (Tables VIII):

1. Lack of knowledge & skills (n=250; 91.9%)
2. Negative attitude toward abortion (n=31; 11.4%)
3. Lack of facilities, equipment, drugs (n=19; 7.0%)
4. Sociocultural and legal concerns (n=30; 11.0%)

³ The total reasons (330) were more than the number of providers (272) due to multiple responses.

Table VIII: Categories of reasons reported for never performing uterine evacuation by professional category and place of work						
Categories of reasons	Hospital					
	Public No (%)			Private No (%)		
	HO/GP	Nurses	Total	GH	Nurses	Total
Lack of knowledge & skills	6	42 (85.7)	48 (87.3)	1	25 (92.6)	26 (92.9)
Negative attitude	1	11 (22.4)	12 (21.8)	0	2 (07.4)	2 (07.1)
Lack of facilities, equipment, etc.	2	0 (0.0)	2 (03.6)	0	0	0 (00.0)
Sociocultural & legal concerns	0	5 (100)	5 (09.1)	0	6 (22.2)	6 (19.4)
Total	9	58	67	1	33	34
Categories of reasons	Health center/ private clinic					
	Health centers No (%)			Private clinics No (%)		
	HO/GP	Nurses	Total	HO/GP	Nurses	Total
Lack of knowledge & skills	19 (95.0)	147 (92.5)	166 (92.7)	2	8	10 (100)
Negative attitude	2 (10.0)	14 (08.8)	16 (08.9)	0	1	1 (10.0)
Lack of facilities, equipment, etc.	5 (25.0)	11 (06.9)	16 (08.9)	0	1	1 (9.1)
Sociocultural & legal concerns	2 (10.0)	16 (10.1)	18 (10.1)	0	1	1 (10.0)
Total	28	188	216	2	11	13

The most common reason was 'lack of knowledge and skills' (92%) followed by negative attitude (11%) and sociocultural and legal concerns (11%). The least-reported barriers were related to lack of facilities, equipment and drugs (7%). Even though the proportion of providers stating lack of knowledge and skills was lower in public hospitals (87.3%) than in other facilities ($\geq 92.5\%$), the proportion of providers with negative attitudes in public hospitals (21.8%) was higher than in other facilities (ranging from 7.1% to 10%). Sociocultural concerns were reported by a higher proportion of providers working in private hospitals (19.4%) than in other types of facilities (ranging from 9.1% to 10%) (Table VII).

Providers working in hospitals and who were authorized to perform STM-TOP gave 44 reasons for not providing recent STM-TOP after it was requested by women. Unlike the overall reasons for never providing uterine evacuation in which “lack of knowledge and skills” was the most dominant barrier (92%), three of the barriers—“lack of knowledge & skills” (27.3%), “negative attitude” (25.0%) and “sociocultural & legal concerns” (31.8%)—were almost equally common reasons for avoiding requested STM-TOP. The least common barrier was “lack of facilities, equipment, and drugs (18.2%)” (Table IX).

Table IX: Reasons for not providing requested STM-TOP given by general practitioners, health officers and obstetricians working in hospitals				
Categories of reasons	GP	HO	OBGYN	Total (%)
Lack of knowledge & skill	3	8	1	12 (27.3%)
Negative attitude	7	3	1	11 (25.0%)
Lack of facilities, equipment, drugs	1	7	0	8 (18.2%)
Sociocultural & legal concerns	5	7	2	14 (31.8%)
Total (%)	16 (36.4)	25 (56.8)	4 (09.1)	44 (100%)

Lack of knowledge and skills: Generally, lack of training was given as the reason for never providing evacuation. Most providers did not include any additional details, but some substantiated the need for training based on the increased risk of complications when evacuation was performed without adequate training.

“Lack of training on these procedures leads to increased risk of conceptus materials retention....”
(HO in public hospital)

“... It needs a special training. If any nurse does [evacuation], the uterus may be perforated [which] causes serious problem”
(Nurse in a private hospital)

Some GP and HO also underlined the need for training, especially in STM-TOP, because such procedures lead to increased complications without training.

“I am not comfortable to terminate pregnancy above 12 weeks of gestation and in the use of technique other than MVA because of the increased risk of complication”
(GP in a public hospital)

“Because it is large; fear of complication; no training taken before on STM pregnancy”
(HO in a public hospital)

The underlying causes for “lack of knowledge and skills” were related to pre-service and /or in-service trainings. Generally, shortcomings in both theoretical and practical aspects of pre-service training were reported. Most of the responses on pre-service training underlined the deficiency in practical aspects of the trainings. Some providers suggested updates on recently introduced methods and procedures:

“..... I am not trained in the service at pre- or in-service”
(Nurse in a HC)

“Because I did not have any training in evacuation...”
(Nurse in a private clinic)

“During my university study, I was taught theoretically about safe abortion and clinical categories of abortion. But I had no practical training (in my pre-service training).... I also had no chance to practice thereafter. On the job, I have seen many hCG-positive [pregnant] women who want to have abortion. Since I have no experience and training on abortion I didn't provide any of them. .”
(HO in a health center)

"I took pre-service training...and after the training I was not providing the service for eight months. I am not sure whether I can perform the service because I did not perform the procedure after the training"

(Midwife in a public hospital)

"I am not trained in abortion and I don't have enough knowledge & practical experience about the current method of abortion"

(HO in a public hospital)

"I know the theory but had no practical [training]; I had no on-the-job training to take the risk"

(HO in a health center)

Negative attitude toward abortion was the second-most common reason for never providing evacuation. Due to personal beliefs, some providers avoided abortion-related care. Religion, complications related to abortion and life concerns were cited for their attitudes about abortion.

"... It is killing of human being. I am afraid of complications of abortion"

(Nurse in a health center)

"First, it is forbidden according to my religion. Second, I do not support it because it has complication and risk for the women...."

(Nurse, health center)

Some providers also put forward lack of training as their reason for never providing, while others consider termination if the condition for abortion is in line with their opinions:

"I am not interested....to do this procedure and also I have no special training for abortion"

(HO in a health center)

"I am not trained to perform uterine evacuation, medication abortion and I have no interest to do it but to save life; it must be done after careful decision"

(Nurse in a health center)

"Against any religion and I am not trained"

(Midwife in a health center)

"In my opinion it is wrong to kill an innocent child...[I]t would have been so much better if they had prevented it from happening at the first place. On the other hand, exceptional cases or situations like rape, psychosis... that I can agree to perform abortion"

(Nurse in a private hospital)

Sociocultural and legal concerns were as common as negative attitudes for never providing evacuation. Some of the reasons include issues related to the Ethiopian Safe Abortion Guidelines, health facility policies or SOP, in-service or pre-service training programs. Some of the reasons were wrong understandings of the providers and they were not based on the reality in the country:

"The Ethiopian health policy restricts us (nurses) to do any abortion and curettage"

(Midwife in a public hospital)

"In the hospital I am working, I am not expected to treat such case ..."

(Nurse in a public hospital)

"In fact, it is thought to be performed only by the physician ..."

(Midwife in a public hospital)

"Because I did not have any training before Even if I had the skill to do it, gynecologists don't let us do so" *(Nurse in a private clinic)*

".... first I don't have any training; secondly, practical training in this type of courses is given only for health officers at college level but not for nurses, i.e., abortion is legalized only for health officers."

(Nurse in a health center)

"....[I]n-service-trained health care workers do it. So I am not supposed to do this, and lack of confidence due to lack of in-service training"
(Nurse in a health center)

"I have never taken any training regarding abortion. Most of the training is not given to private hospitals" (Nurse in a private hospital)

The sociocultural effect on a nurse was expressed vividly as:

"I am working at the village where I grew up and my religion does not permit abortion. I am not interested to do abortion. I refer them to other facilities."
(Nurse in health center)

Some of the reasons for denial of STM-TOP were reported in general terms and it was not possible to assess whether the responses were based on facts or misunderstandings. Such responses include: "... her request was not allowed by the law...." or ".... It was unwanted pregnancy...." Over all, in most the responses, one can observe that the reasons for not providing requested TOP (especially STM-TOP) were based on misunderstandings of the Ethiopian Safe Abortion Guidelines:

"..... [It was] unwanted [second-trimester] pregnancy but legal system of the country does not support safe abortion."
(OBGYN in a private hospital)

"It is not recommended...to terminate second-trimester pregnancy by FMOH. However, the FMOH recommended or allowed safe abortion care for gestational age less than 12 weeks or 3 months."
(Nurse in a private hospital)

"She was married. She had to consult her husband and he had to agree on that [termination]."
(GP in a private hospital)

"... Because of the risk of bleeding and uterine perforation and lack of legal support for termination"
(GP in a public hospital)

"[I have] no clear understanding of the current abortion law of Ethiopia. The Guidelines are not available and I have no special training on abortion."
(GP in a public hospital)

Some providers from both private and public hospitals also indicated that women requiring STM-TOP face financial constraints in accessing the service. Cost of termination was not reported by any of the providers who declined in the provision of FTM-TOP.

"Because of the increased complication when the gestation age is more than 12 weeks and sometimes the client is not able to pay for the procedure and medication"
(HO in a public hospital)

"Lack of appropriate means of termination.... Financial constraint on the patient side"
(OBGYN in a private hospital)

"For gestation age greater than 12 weeks [woman could not] pay for the hospital procedure"
(HO in a public hospital)

Counseling and referrals for TOP not provided

There were 233 providers (among 289) who had FTM-TOP requests and 182 providers (among 166) who had STM-TOP requests who did not provide some (or provided none) of the requested TOP. These providers were asked in an open question to report the advice or counseling they provided or the action they took after declining provision of the requested terminations. The responses of 214 providers had content on the *counseling on abortion decision* and/ or *referral* provided to the women who requested TOP.

Counseling on abortion decision: There were 104 responses with content on the “counseling provided” addressing a woman’s abortion decision. Most of the counseling was biased, urging women to continue with the unwanted pregnancies (FTM: 51, 86.4% and STM: 23, 86.0%). Most of the biased counseling was based on misinformation and/ or focusing on complications only. A common reason given for avoiding termination was the complications associated with abortion in general and rarely specified with unsafe abortion.

“.... Abortion in second trimester is not possible to expel the fetus, so ..I advised her to return home and have antenatal care follow up ...”

(Nurse, health center)

“I convinced her that greater than 12 weeks pregnancy termination [is] associated with risk and complications.” *(Nurse, health center)*

“I advised them that termination of pregnancy has many complications and also [is] disadvantageous ... I advised them to keep the pregnancy and give birth.”

(Nurse, public hospital)

Some of the biased advice provided for women requesting FTM (n=21, 41.2%) and STM (n=21, 91.3%) incorporated information on where to access the requested services only if the women insisted on termination.

“.... I advised her to continue with [the] unwanted pregnancy... [But] she did not accept [my advice]. I gave her referral to [other] hospitals where complications could be managed ...”

(HO, public hospital)

“First I tried to teach her how bad termination of pregnancy is As much as possible I persuaded her to give birth unless it was a risk for her life ... [If she had] blood pressure [hypertension], diabetes, cardiac disease and [if] that was approved by doctors”

(Nurse, health center)

Referral for TOP: After rejecting provision of requested TOP, some providers gave information about where women might get the TOP. The referrals were either “in-facility referral”, or “referral to other facilities.” In rare instances, they referred the women to both. Table X summarizes these referrals.

Table X: Referrals made for termination of pregnancy requested by trimester					
Referrals by trimester of pregnancy	Health centers No (%)	Private clinic No (%)s	Public hospitals No (%)	Private hospitals No (%)	Total (%) No (%)
First-trimester TOP requests					
In-facility referral	30 (31.3)	1 (25.0)	17 (58.6)	8 (72.7)	56 (40.0)
Referral to other facilities	60 (62.5)	3 (75.0)	11 (37.9)	3 (27.3)	77 (55.0)
Both	6 (06.3)	0 (00.0)	1 (03.4)	0 (00.0)	07 (05.0)
Total	96 (68.6)	4 (02.9)	29 (20.7)	11 (7.9)	140 (100)
Second-trimester TOP requests					
In-facility referral	18 (27.7)	1 (25.0)	12 (48.0)	5 (50.0)	36 (34.6)
Referral to other facilities	44 (67.7)	3 (75.0)	12 (48.0)	4 (40.0)	63 (60.6)
Both	3 (04.6)	0 (00.0)	1 (04.0)	1 (10.0)	5 (04.8)
Total	65 (62.5)	4 (03.8)	25 (24.0)	10 (09.6)	104 (100)

The 140 referrals made for FTM-TOP were made by providers working in all four types of facilities. A higher proportion of referrals was made from health centers (62.5%) and private clinics (75.5%). The referrals made from hospitals (public hospitals: 37.9% and private hospitals 27.3%) were also high, accounting for a quarter of the requests. Compared to the private facilities, more referrals were made from public facilities. A major concern is that all of these facilities were expected to provide FTM abortion care by the Ethiopian Safe Abortion Guidelines. The referrals could indicate the enormity of the barriers and delays women had to face after overcoming delays in decision-making and access by landing at facilities unable to provide FTM abortion care. Failure to avail FTM-TOP at these facilities could leave women to undertake unsafe abortion or postpone termination to the STM.

The referrals for STM-TOP were of even more concern because a high proportion of referrals were made by hospitals (public: 48% and private: 40%). According to the Ethiopian Safe Abortion Guidelines, STM-TOP is limited to hospitals only. The unavailability of STM-TOP at the sparsely distributed hospitals in the country implies that for most women, especially rural women, safe STM abortion care is unattainable.

Some of the referrals made for STMA were from district public hospitals to distant hospitals in Addis Ababa or certain major towns. In addition, some of these referrals were made to hospitals where TOP, especially STMA, was limited mainly to save maternal life and did not include other conditions stated in the Guidelines. A similar situation was also indicated among the 'in-facility referral' statements:

"I gave them the information where they can get such service, usually in Addis Ababa."
(OBGYN, district public hospital)

"I referred them to [a public hospital in Addis Ababa]."
(HO, district hospital outside of Addis Ababa)

"I referred them to the gynecologist, though I know he does not do such things."
(HO, district public hospital)

Pre-service and in-service training

Table XI summarizes providers' training, both in pre-service and in-service. Fewer than half of all the providers had either pre-service or in-service training in evacuation for PAC (40%) or TOP (34%). The proportion of providers who had any of these trainings was highest among the obstetricians (94.7% in both TOP & PAC) followed by general practitioners (69.3% in TOP & 80.6% in PAC). The least proportion was found among nurses (27.2% in TOP & 30.5% in PAC).

Overall, the proportions of the providers reporting to have pre-service or in-service trainings for either PAC or TOP were similar; ranging from 18.7% to 26.2%. This similarity was also seen among nurses and health officers, but at different levels. On the other hand, most obstetricians had pre-service trainings in both PAC (94.7%) and TOP (94.7%). The training of GP was also similar to that of obstetricians, being more dependent on pre-service than in-service training: in PAC, 72.2% pre-service vs. 30.6% in-service and in TOP, 38.3% pre-service vs. 25.0% in-service.

Table XI: Pre-service and in-service training of providers in uterine evacuation for abortion management					
Training type by gestation	OBGYN No (%)	GP No (%)	HO No (%)	Nurses No (%)	Total (%)
Evacuation for PAC (inevitable/ incomplete abortion)					
FTM (up to 12 weeks)					
Pre-service (total 500)	18 (94.7)	26 (72.2)	25 (37.3)	62 (16.4)	131 (26.2)
In-service (total 493)	6 (31.6)	11 (30.6)	23 (35.4)	67 (18.0)	107 (21.7)
Any of trainings (496)	18 (94.7)	29 (80.6)	39 (58.2)	114 (30.5)	200 (40.3)
STM (13-27 weeks)					
Pre-service (499)	18 (94.7)	20 (55.6)	16 (24.2)	22 (05.8)	76 (15.2)
In-service (492)	3 (15.8)	8 (22.2)	8 (12.3)	11 (03.0)	30 (06.1)
Any of trainings (492)	18 (94.7)	22 (61.1)	20 (30.8)	31 (08.3)	91 (18.5)
Evacuation for safe abortion (TOP)					
FTM (up to 12 weeks)					
Pre-service (408)	18 (94.7)	21 (38.3)	14 (21.5)	40 (10.6)	93 (18.7)
In-service (494)	6 (31.6)	9 (25.0)	20 (30.8)	71 (10.0)	106 (21.5)
Any of trainings (496)	18 (94.7)	23 (63.9)	26 (39.4)	102 (27.2)	169 (34.1)
Early STM (13- 20 weeks)					
Pre-service (499)	17 (89.5)	14 (38.9)	9 (13.8)	14 (03.7)	54 (10.8)
In-service (495)	2 (10.5)	3 (08.3)	2 (03.1)	10 (02.7)	17 (03.4)
Any of trainings (491)	17 (89.5)	15 (41.7)	10 (15.9)	26 (07.0)	68 (13.8)
Late STM (21 - 27 weeks)					
Pre-service (497)	17 (89.5)	10 (25.6)	5 (07.8)	7 (001.9)	39 (07.8)
In-service (494)	0 (00.0)	1 (02.8)	1 (01.5)	2 (00.5)	4 (00.8)
Any of trainings (489)	17 (89.5)	10 (27.8)	6 (09.5)	9 (02.4)	42 (08.6)

Training in second-trimester abortion care: Compared to first-trimester abortion (FTMA), the proportion of all the providers trained with either pre- or in-service training for STMA was very low: TOP for STMA was less than 14% while it was more than 34% for TOP in FTMA; and PAC for STMA was about 19% while it was more than 40% for TOP in FTMA. The decrement was less prominent among obstetricians (decreasing from 95% to 90% in TOP and no decrement in PAC). Among the other three professional categories, the proportion of the overall training in STMA was 20% to 30% less than training in FTMA.

While the proportions of providers who got pre-service and in-service trainings in FTM abortion care were similar, most of the providers had pre-service training rather than in-service training in STM abortion care: The proportions of providers with pre-service training in STM-PAC (15.2%) and early STM-TOP (10.8%) were three times higher than the proportion of providers with in-service training in STM-PAC (6.1%) and early STM-TOP (3.4%) for early-STMA, respectively. The difference was more marked in late STM-TOP, in which the pre-service training (7.8%) was ten times the in-service (0.8%) training. The relatively higher proportion of pre-service than in-service training for STMA was observed among all the four professional categories as being more prominent in TOP than PAC.

When the proportion of providers who were trained (Table XI) was compared with the proportion who provided uterine evacuation (Table IV), the general pattern was that a lower proportion of providers had ever provided evacuation than had trained. The proportion of providers who had ever provided uterine evacuation was lower than the proportion of those who had any of the trainings. For example, in FTM-PAC, 40.3% of providers were trained but only 35.6% had ever provided FTM-PAC. Similar patterns were seen among HO and nurses in all types of abortion care and trainings.

On the other hand, the proportion of obstetricians who had ever provided evacuation was higher than those who had trained for any of the abortion types. For example, in STM-TOP, while 89.5% of them were trained, 94.7% of them had reported they had performed evacuation for STM-TOP. Regarding the GP, their pattern for PAC was similar to obstetricians, but the pattern for TOP was similar to that of the nurses and HO.

Knowledge and Attitude assessment of providers

Knowledge assessment: Two sets of questions were used to assess the knowledge of providers: The Ethiopian Safe Abortion Guidelines and recommended methods of termination for STM-TOP. About 78% of the providers had correct knowledge on the provision of safe abortion provision in the FTM as measured by one item. On the other hand, only 11.4% of the providers were correct on the provision of STMA as measured by five items.

Regarding the correct methods for STM-TOP, fewer than 50% of the providers identified the recommended methods and more than 60% identified non-recommended methods. A knowledge score of $\geq 70\%$ on both the Ethiopian Safe Abortion Guidelines and recommended methods for STMA was attained by 2.0% of all the providers.

Attitude assessment: Based on a scale of 10 items measuring agreement level on the provision of TOP for ten conditions, obstetricians (39.3/50) and health officers (40.1/50) were found to have more favorable attitudes to TOP than nurses (37.1/50) and general practitioners (36.9/50) [Table XII]. Generally, specific item-scores for conditions not included in the provision of safe abortion in the Ethiopian Safe Abortion Guidelines were given lesser scores (3.0-3.9) than for conditions included (4.0-5.0)⁴.

Table XII: Providers' scores on attitude towards termination of pregnancy at different trimesters of pregnancy					
Attitude items	Professional categories				
	GP	HO	Nurses	OBGYN	Total
Ten-item attitude scores*	36.9	40.1	37.1	39.3	37.6
FTM-TOP*	4.5	4.7	4.3	4.8	4.4
STM-TOP*	2.8	2.9	2.4	3.2	2.5
Early STM-TOP*	3.1	3.4	2.8	3.9	3.0
Late STM-TOP *	2.4	2.3	2.0	2.5	2.1
* Minimum to maximum scores range from 10 to 50					
** Minimum to maximum scores range from 1 to 5					

The least scores ($<3.0/5$) were given for "provision of safe abortion on request" and for "no condition legitimizes provision of abortion at all," which were analyzed separately from the ten-item scores. Overall, the findings indicate that health-care providers support provision of safe abortion on certain indications. Compared to "no condition legitimizes provision of abortion at all" (Scored 1.5/5), they have favorable outlook to provision "on request" (scored 2.8/5) though both of them were in the 'disagreement' level.

The agreement score on provision of safe abortion for STM (2.5/5) was half of that for FTM (4.4/5). A similar decreasing score-pattern was also seen as the gestational age increased from FTM to early- and late-STM.

Regarding payment for STM abortion care, the overall score was less than three (disagree level). The overall score for the item on "referring women requesting STM abortion if the provider has conscious rejection" was in the "agree" though about 20% were in the "disagree" level.

Facility assessments

The purpose of the facility assessments was to assess preparedness in managing second-trimester abortion as permitted by the law in Ethiopia. The assessment was focused on availability of facilities, equipment, drugs, trained providers and guidelines as required in the provision of STMA care, including treatment of abortion complications and safe termination of second-trimester pregnancy.

There were no written clinical or procedural protocols addressing the management of STMA in any of the hospitals. The practices in STMA were mainly on the management of postabortion care (PAC). In at least

4 This discrepancy may reflect knowledge effect on attitude.

four hospitals, no second-trimester terminations of any pregnancy (TOP), including for medical reasons (eclampsia, molar pregnancy, etc.), were undertaken. Some hospitals had limited experience in termination of second-trimester pregnancies for medical indications, while a few reported having such terminations for non-therapeutic reasons (e.g., rape, incest, etc). In hospitals where safe TOP of STM pregnancy was not practiced, availability of facilities that could be utilized for STMA care (e.g. space, OR facilities) were reported as available.

Based on the overall practices observed in most of the hospitals, the main procedures undertaken in STMA include initial examination at the outpatient department (OPD) leading to admission to either gynecology or obstetric wards, and followed by undertaking the required operative procedures. Whenever operative procedures to evacuate the uterus were required, the procedures were provided in MVA/ E&C or minor OR, which were located in the obstetrics & gynecology department or OPD. Use of major OR was limited to laparotomies. Depending on the individual provider's inclination, evacuation of the uterus for either PAC or safe termination of pregnancy could be undertaken in the major OR.

Examination rooms: Most of the hospitals (n=20) had the clinical exam room at the OPD, while in the remaining third, the exam was done in either the gynecology or labor wards (n=9). Though most of these exam rooms (n=23) were private, six of them had compromised privacy. In almost all clinical examination rooms, there were examination tables with knee support crutch (n=24) and basic supplies and equipment such as clean examination gloves (n=all), speculum (n=28), blood pressure apparatus (n=29), and stereoscope (n=all). Similarly, most of the hospitals (n=22) had access to ultrasound (within the hospital).

Treatment and recovery areas: In all the hospitals, treatment and recovery areas were provided in the same place: gynecology or obstetrics (including labor) wards. Twelve hospitals had private rooms where women with second-trimester abortion could be accommodated for medication abortion (medication, expulsion and recovery) and for cervical preparation for D&C. On the other hand, 17 of the hospitals did not have private rooms because abortion patients were managed in either gynecology or obstetrics wards shared with other patients. In two hospitals, the labor ward was used for such purposes.

Drugs for medication abortion and cervical ripening: Fetocide medications such as digoxin and potassium chloride (n=2) were rarely available. Mifepristone (n=15) and PGE (n=3) as cervical ripening or medication abortion agents were available in almost half of the hospitals. Misoprostol was available in 20 hospitals. In some of the hospitals, mifepristone and misoprostol were available in pre-prepared combination packs (Medabon®). In three hospitals, Foley catheters were used for cervical ripening. Almost all except one hospital had oxytocin.

Drugs for pain management and contraceptives: For pain management, all the hospitals had two or more types of non-narcotic analgesics (NSAID, dipyron, paracetamol). The most common narcotic analgesics available was pethidine (n=20). Morphine (n=2) and diazepam (n=6) were rarely available.

Family planning methods were available in the treatment areas of 19 of the hospitals. Printed instructions on postabortion self care were said to be available in only four hospitals.

Procedure room for uterine evacuation and emergency operations: Evacuation of second-trimester abortions following either medication abortion initiated at the hospital or admitted for PAC were usually undertaken in the MVA/D&C room / minor OR (n=22). In two hospitals, the evacuations were done in the major OR, while the labor wards were used in two hospitals. In the procedures rooms, speculum, ring forceps and light source were available in 26, 22, and 27 of the hospitals, respectively.

None of the hospitals had a separate room for D&E. D&E procedures were performed in the same room where incomplete abortions were evacuated or in the major OR. Usually therapeutic TOPs were undertaken in the labor wards. In the few hospitals where non-therapeutic TOPs were performed, MVA/E&C room, minor or major ORs were used. In hospitals where D&E was not done, hysterotomy was undertaken in conditions requiring immediate termination (e.g. eclampsia).

Twenty-four hospitals had access to operative procedures for emergency conditions. Equipment and supplies such as oxygen tank (n=25), ambu bag (n=28), oropharyngeal airway tubes (n=22), and suture sets with long needle driver and sutures (n=23) for possible complications were also available in most of the hospitals.

Equipment and facilities for D&E: Lithotomy tables and light sources for procedures were available in 26 and 27 of the hospitals, respectively. Twenty-six hospitals had either spinal (n=10), general anesthesia (n=21) or both (n=9). Seven hospitals were reported to have neither types of the anesthesia at the time of the assessment. The various instruments required for D&E were available in 50% or fewer of the hospitals (Table XIII).

Table XIII: Available equipment required for D&E in 29 hospitals	
Equipment for second-trimester abortion	Hospitals No
Wide speculum (Klopper, Auvar weighted)	15
Tenaculum	29
Graduated metal dilator	15
Vacuum aspiration with 12, 14 or 16 mm cannulae and adaptors	10
Large Bierer uterine evacuation	09
Small Sopher, Bierer uterine evacuation	11
Long (Metzenbaum) scissors	13
Curettes: large, metal postpartum flexible (e.g. Banjo) curettes	12
Bowl or container for evacuated products	22

Facilities for disposing products of conceptions: All hospitals dispose products of conceptions (POC) following procedure for disposing the placenta (n=6), dead fetus (if delivered intact late in the second trimester), or operated body parts.

Health-care provider: Gynecologists were available in 22 of the hospitals only. All the hospitals had health officers and general practitioners (but none of them had additional training that would enable them provide termination of second-trimester pregnancy as depicted in the Ethiopian Safe Abortion Guidelines).

Discussion and recommendations

Few studies have explored the delays in obtaining and providing second-trimester abortion care despite the compelling needs for detailed information to address the disproportionately high maternal mortality and morbidity associated with unsafe STM abortions. In addition to women's health, STMA involves issues such as ethics, law, policy, access, service delivery, women's and providers' perspectives, safety and efficacy of methods. Due to methodological and resource constraints, this study explored issues involved from conception of the unwanted pregnancy through recognition of pregnancy and decision-making in the first- trimester and second-trimester events. The study has also focused on delays in obtaining STM-TOP for medical and non-medical conditions, as well as emergency treatment for complications arising from unsafe or spontaneous STM abortions. The approach used in this study was to investigate potential determinants of delaying abortion until the second trimester and during the second trimester, from the client, provider and facility perspectives in the Ethiopian context.

Though the recommendations and the subsequent discussion sections focus on barriers and setbacks in the current availability and provision of abortion care (especially STMA), this does not imply that no progress has been made during the past decades. In the recent past, important legal, policy and programmatic interventions addressing unsafe abortion have been made. Even though it is not the objective of this study to measure changes, comparison of the available data indicate a positive trend in abortion care and its effects on women's health.

Generally, the available findings indicate improvement in providers' knowledge, attitudes and practice regarding abortion as compared to a similar national survey conducted from 2000-2001 (ESOG, 2002): The proportion of providers with correct knowledge of the prevailing law at the time of surveys had risen from 29% to 78%. In 2000-2001, 6.7% of the providers were able to provide requested TOP, while the current study found that 29.9% did so. Previously, the common reasons for not providing TOP were "illegality of abortion" (51%), "negative attitude" (26.2%) or "not convinced of the indication" (27.2%). Even though "negative attitude," especially for STMA, is still prominent, the findings of the current study indicate that "negative attitude" plays a relatively lesser role. The "legal restrictions"

and “policy environment” reported as major barriers by providers were greatly eased. Earlier, the only recommended method of uterine evacuation available was MVA, which was *known* by half of *all the providers* (including nurses) and *used* by 37% of physicians (Abdella et al. 2002); it was also used in 11% of uterine evacuations (ESOG 2002). Currently, FTM safe abortion is provided by mid-level providers and most commonly two of the recommended methods, MVA and MA, are used. It could be deduced that the recent decline in abortion-related maternal mortality and morbidity is due to the concerted interventions made in the last decade (Gebreselassle et al. 2010, Abdella 2010).

The delay factors and barriers to safe abortion care could vary by individual-level characteristics of women seeking care (e.g., age, education, income, residence); knowledge, attitudes and practices of health-care provider as well as macro-level factors (e.g., culture, abortion policy, programs, availability and access of services). The barriers underlying delays were categorized into four interrelated levels that evolve from time of conception to early and late pregnancy: occurrence of unwanted pregnancy following contraceptive failure or non-contraceptive use; late recognition of pregnancy and/ or delay in seeking early abortion care; inaccessible safe abortion care for FTM-TOP; and inaccessible or unavailability of safe STM abortion care (for both TOP and PAC). Even though delays and their underlying factors were coded and analyzed separately, in almost all cases and as reported by other studies (Gallo and Nghia 2007, Ingham et al. 2008), multiple and overlapping factors operating at different levels or categories influenced the timing of seeking, obtaining and providing services. For example, a woman presenting with unsafe abortion in the STM could have different barriers (such as awareness, distance, and economic) that prevent her from using contraception, confirming pregnancy, or accessing FTM and, later, STM safe abortion. Continued indecision about whether to have an abortion was reported to be a common factor in England and Wales (85%) due to multiple reasons such as “relative late recognition of pregnancy, then struggling with decision and having to wait to obtain the abortion” (Ingham et al. 2008).

Delay in decision-making: Delay in recognizing pregnancy and seeking TOP early leads to the need for STM-TOP. One of the reasons for delayed decision-making in recognizing and terminating pregnancy early is the uncertainty of a woman’s intention towards her pregnancy. Due to her ambivalence, a woman becomes hesitant on contraceptive use, and discontinues or misses her contraceptive method. Once pregnant, her uncertainty could also prevail throughout the FTM, which delays early confirmation and termination of the pregnancy. The reasons for delay in seeking or obtaining services early found in this study were similar to findings in England and Wales where “uncertainty about what to do if they were pregnant, not recognizing they were pregnant, experiencing bleeding ... and confused with periods, and changes in personal circumstances” was reported (Ingham et al. 2008).

The underlying factors of a woman’s uncertainty to her pregnancy are varied: A married woman who does not want pregnancy (because, for example, it would not allow her to achieve her educational or financial aspirations), could be pressured by her partner and have unprotected sexual contact. An unmarried woman could delay decisions because a pregnancy before her “official wedding” could result in the male partner breaking up with the woman after discovering the pregnancy and refusing responsibility for the pregnancy. Some studies have found that women delay seeking early abortion in order to pressure their partner into an official wedding. If this plan did not lead to the desired wedding, they then might resort to a second-trimester abortion (Gallo and Nghia 2007).

Late suspicion and confirmation of pregnancy were described by both married and unmarried women and contraceptive users and non-users. Some of the underlying factors identified included irregular menstrual cycles (due to inherent, contraception, or lactation), and lack of knowledge of pregnancy symptoms. Difficulties in accessing health services to confirm pregnancy could delay early-seeking behavior among rural and poor women including students. Unmarried women have greater barriers to accessing service for abortion (and confirming pregnancy) due to the stigma of out-of-wedlock pregnancy and their high concern regarding confidentiality, especially within public facilities. In India, a higher proportion of unmarried women have STMA than married women (Dalvie 2008).

A woman who gets pregnant after rape, incest or out of marriage delays early confirmation and termination of pregnancy in an effort to conceal the sexual encounter and pregnancy from family and society, including persons close to them, since the condemnation and stigma surrounding rape, incest and extramarital sexual encounters is hard and unremitting on the victimized woman. The concealment efforts hamper getting adequate information, financial support and timely travel to get the needed services;

ultimately the need for late STM-TOP could lead to unsafe abortion. Extramarital sexual encounters and pregnancy are stigmatized by the society (FGAE 1998) and play a major role in abortion decisions by unmarried women (ESOG 2002, Abdella 1999).

Emergency contraception (EC) could prevent up to 87% of pregnancies (Trussell et al. 1999) if used within five days of unprotected sexual exposure such as rape, incest, method failure, occasional sexual encounter (as seen among adolescents) and unexpected extramarital sexual affairs. To effectively utilize EC, women, including adolescents, need to be educated when and how to use EC, and where to get it. Over-the-counter provision of EC is recommended, as it is found to be safe and effective (Grimes et al. 2001).

Deficiencies in knowledge could cause young pregnant women to hesitate seeking an early abortion. Education, mass communication and proper counseling on reproduction, contraception, the Ethiopian Safe Abortion Guidelines and safe abortion services could be influential in minimizing unwanted pregnancies and delays in decision-making and seeking early safe FTM abortion care. Educating the educators, including the media, is also an essential measure.

Delay in access and availability of FTM abortion care: According to the Ethiopian Safe Abortion Guidelines, all the facilities assessed in this study were expected to provide FTM abortion care, including FTM-TOP, but more than half (53%) of all the requests for FTM-TOP were not provided. Most of the requests for FTM-TOP (81.1%) were made to providers working in public facilities where the rejection was highest; 67.8% and 44.5% at health centers and public hospitals, respectively. The non-availability of FTM abortion care, especially TOP, was also pointed out in the client interviews and case histories. A recent study on safe abortion care in Ethiopia has shown that the national availability of basic (FTM) abortion care is 31% of the recommended level (Abdella et al. 2008).

Once unwanted pregnancy was recognized and the decision to terminate was made, women faced barriers due to limited access to (e.g., distance, cost) and availability of functional services. Even after early decisions were made and facilities were physically accessible and affordable, the required services might not be available at the facilities due to various shortcomings. Varied and mixed shortcomings in obtaining FTM abortion care (tertiary delay) were disclosed, including lack of trained providers (knowledge, skills), negative attitudes, and lack of facilities, equipment, drugs and supplies. The unavailability of the required service could force women to delay termination to the second trimester, undertake unsafe abortions or continue with unwanted pregnancies.

Lack of trained providers in FTM abortion care: Fewer than half of all the providers had either in-or pre-service trainings in evacuation for either PAC (40%) or TOP (34%). More than half of the physicians (obstetricians & GP) had either in- or pre-service trainings in FTM abortion care, while fewer than half of the health officers and nurses had such trainings; the least being among nurses (27.2% in TOP & 30.5% in PAC). In Ethiopia, access to physicians is inadequate due to their limited number and assignment to hospitals.

In addition, the proportion of providers who were recently providing the services was far less than the proportion of providers with either in- or pre-service trainings, indicating that not all who claimed to be trained were currently providing the service. While most of the physicians had their training during pre-service training, the training of most of the HO and nurses depends on in-service trainings. Physicians' experience in TOP was very low compared to their experience in evacuation for PAC. This might be due to the focus of their pre-service training being on PAC than TOP.

The reasons for "never providing uterine evacuation" and "not providing recent requests of TOP" indicated that "lack of knowledge and skills" was the most common reason for not providing FTM abortion care. In addition to the quality of training, providers' willingness to provide TOP and lack of facilities, equipment, drugs and supplies were the barriers in the provision of FTM abortion care.

Referral for FTM abortion care: Referrals for women requesting TOP (and PAC) were made at all facilities including hospitals. Referrals for FTM-TOP were made by providers in all facilities even though these facilities were allowed and expected to provide these services. More rejections of TOP requests and referrals were made from public facilities, where poor and deprived women seek services.

Improving access to and availability of FTM abortion care could significantly decrease the need for STM abortion care. Providing these services at all possible primary health-care outlets is essential. Alternative

and innovative approaches should also be sought out. Could HEW within a certain perimeter of a health center (providing MVA at all times as backup for HEW) be able to provide medication abortion for early abortion? (This is not allowed by the current Ethiopian Abortion Guidelines.)

Delay in access and availability of STM abortion care: Once unwanted pregnancy is delayed to the STM and a decision to terminate is made, women face similar barriers of access and availability as for FTM abortion, but in an extreme and overwhelming manner. Continued indecision about having an abortion was reported to be a common factor in England and Wales (85%) due to multiple reasons such as “relative late recognition of pregnancy, then struggling with decision and having to wait to obtain the abortion” (Ingham et al. 2008). A recent national study on availability of safe abortion in Ethiopia indicated that the national achievement in access to and availability of comprehensive (STM) abortion care was 24% of the recommended level for the country (Abdella et al. 2008).

Most of the providers (60.1%) had never provided uterine evacuation; the proportion of providers who had ever performed evacuation was strikingly low in STM-TOP (11.5%). The proportion of providers who had performed STM-TOP recently (during the last three months before the interview) was even lower (6.1%).

The high rejection of requests (61.7% of all the FTM and STM-TOP requests) clearly indicates the major role providers play in limiting access to safe abortion services. The difficulty in accessing STM-TOP was depicted by the high rejection (87.5%), which was significantly higher than the rejection of FTM-TOP (53%). Most of the requests were made to providers working in public facilities (78.7%) where most of the rejection took place (76.1%). The high rejection of request for STM-TOP in public hospitals is even further complicated by the limited number of hospitals available in the country and the high cost of STM-TOP. Poor women and students whose income is below private hospital fees are the main victims whenever public facilities close their doors.

Generally, the reasons given by providers for not providing requested termination of pregnancies were mainly categorized as “lack of knowledge and skills, negative attitudes toward abortion, sociocultural and legal concerns, and lack of facilities, equipment, drugs and supplies.” Overall, “lack of knowledge and skills” was the most common reason given by providers working in all facilities. But, regarding STM-TOP, all the three main barriers mentioned above except “lack of facilities, equipment and drugs” were put forth as the main barriers by similar proportion of providers working in hospitals and authorized to provide STM-TOP (HO, GP, obstetricians).

Providers’ training in STM abortion care: According to the Ethiopian Safe Abortion Guidelines, obstetricians can provide STM-TOP based on their pre-service training, while general practitioners and health officers provide STM-TOP after additional special training. At the time of data collection, there was no training program focused on STM abortion care, even though some GP and HO (fewer than 10%) claimed to have such trainings. Training in STM abortion care was mainly dependant on pre-service trainings. Compared to first-trimester abortion, a very low number of providers reported training in the management of STM abortion care. The proportion of trained providers was even lower for TOP than PAC.

The providers’ knowledge assessment and the reasons given for not providing abortion care generally indicate gaps in knowledge, especially in STM abortion. Only about 11% of all the providers gave correct responses on the provision of STM-TOP as prescribed by the Abortion Guidelines. The effect of misunderstanding of the Guidelines was also demonstrated by some of the case histories and reasons given for not providing STM-TOP (or referrals) when requested. Some of the providers rejected provision of STM-TOP or referral assuming that such services were not in line with the Guidelines

Besides the gaps in understanding of the Abortion Guidelines, gaps in technical knowledge were also implied, based on the fact that fewer than 50% of the providers were able to identify recommended methods and that more than 60% checked non-recommended methods for STM-TOP use. A further lack of knowledge was also indicated by providers’ use (13.3% to 22.9%) of non-recommended uterine evacuation methods for STM abortion care (which could also be explained by lack of equipment and drugs).

The common reason for not providing TOP was lack of knowledge and skill. Providers had underscored the need for training to avoid the complications associated with unsafe abortion. The deficiency in practical

aspects of their training was also emphasized, especially with pre-training and the need for in-service updates. An issue in selection for in-service training is the attitude of providers towards abortion, especially TOP. Providers who reported not providing the service based on their belief and objection to TOP also indicated their need for training. Besides general awareness and advocacy work, selection of providers for training, especially STM abortion care, requires proper screening.

Provider's attitude towards abortion: Most health-care providers had a positive outlook towards abortion, especially PAC, but they did not favor either end of the opinion spectra: i.e. provision "on request" or "not at all". They supported TOP based on "conditions" or "indications." The positive attitude of the providers waned with increasing gestational age. Their supportive opinion decreased from FTM to early and then late STM-TOP.

The negative outlook towards STM-TOP could partly explain the overall disagreement score of providers regarding "making payment of STM-TOP similar to delivery services." Some providers also disagreed with "referring women requesting STM-TOP" based on "conscientious objection."

Appropriate counseling and communication using a respectful manner before, during, and after providing abortion services are of concern. Some providers based their counseling on abortion, especially STM-TOP, on their personal beliefs and opinions. A practical expression of such a negative attitude on STM-TOP was demonstrated by the biased counseling and insistence on continuing with the unwanted pregnancies. In abortion care, identifying personal values and beliefs and a professional ethics-based approach is essential.

Facilities, equipment and drugs for STM abortion care: The facility assessments generally showed that hospitals had major shortcomings in providing woman-centered STM abortion care. Besides the limitations of clinical and procedural guidelines, facilities, equipment, drugs and trained providers, some of the hospitals were performing TOP in labor wards. Disposal of products of conceptions also needs attention.

In many obstetrics and gynecological facilities in Ethiopia, the methods of terminations available for STM-TOP are limited. Most of the providers used medical methods for STM-TOP and fewer than half of the providers knew the recommended methods for STM-TOP. The options for STM-TOP available for women were limited mainly to medical methods. Some women despised the long duration required for medical termination for STM; therefore, providing the option of D&E would be appropriate.

If congenital abnormalities are detected, termination could be delayed due to either the woman having difficulty making a decision after the diagnosis or because the diagnosis was made late in gestation. Since biological tests used to detect common anomalies at an early gestational stage are not available in Ethiopia, the diagnoses of fetal abnormalities are generally made in the second trimester using ultrasound (US). In addition, ultrasound examinations are not performed on a routine basis, nor are the equipment and expertise widely available.

Referral for STM abortion care: According to the Ethiopian Safe Abortion Guidelines, provision of STM-TOP is limited to hospitals only. As in India (and other developing countries), the number of facilities that are fully equipped to do abortion, especially STMA, is extremely low and skewed (Abdella et al. 2008, Dalvie 2008). Due to the population distribution, landscape, limitation of transportation and maldistribution of the available few hospitals in the country, access for STM abortion care is extremely constrained, especially for women living in rural areas. Besides, availability of STM abortion care at hospitals was compromised for various reasons. The compromised hospital preparedness in providing STM abortion care due to lack of trained providers, facilities, equipment and drugs was revealed by the facility assessments. The case histories reported by providers and experiences of clients /patients depicted the insurmountable barriers in accessing STM abortion care.

The high proportion of STMA referrals to other facilities made by providers working in public (48%) and private (40%) hospitals could indicate the gravity of the problem in accessing STM abortion care. These hospitals were expected to provide the services and not refer! Some of the referrals made for STMA were from district public hospitals to distant hospitals in Addis Ababa or certain major towns. In addition, some of these referrals were made to hospitals where TOP, especially provision of STMA, was extremely limited.

A high proportion of women were referred for STM-TOP from primary-health-care centers. About 52% of requests for STM-TOP were made to health centers and private clinics (health centers: 37.6% and private clinics: 14.6%). Since these facilities are not allowed to perform STM abortion care, referral to hospitals is

the only option available. But, access to functional hospitals is an insurmountable barrier for most women, especially underprivileged, poor and rural residents.

For most women—especially poor women in rural areas and those with limited access (e.g. students)—enabling health centers to undertake FTM abortion (both medical and VA) is of primary importance. At the same time, exploiting the relative accessibility of health centers to the underprivileged women could be considered in the provision of STM abortion care, too. Even though it is not incorporated within the Ethiopian Abortion Guidelines, considering provision of early STM-TOP at certain carefully selected health centers staffed with HO could be an alternative approach. Based on the changes achieved in the last decades, it is suggested that mid-level health-care providers could be authorized after appropriate training to manage both FTM and STM medical abortion in modest inpatient facilities with good referral links (Boland 2010). In Ethiopia, there are health centers located in remote areas far from any hospital and they are providing STM-PAC because there is no other alternative.

Some providers could refuse to perform abortions (or referrals) due to religious or cultural beliefs or lack of skill and refer pregnant women to other health facilities, a process that could increase the time to obtaining an abortion. Some of them (about 20% of providers) had expressed negative attitude towards referral of women requesting STM-TOP based on “conscientious objection.”

According to the Ethiopian Safe Abortion Guidelines, health centers and private clinics are expected to refer all STM-TOP requests to hospitals, but some providers working in private clinics and health centers provided “in-facility referrals” for STM-TOP rather than “referral to hospitals.” This might be due to lack of understanding of the guidelines.

Cost of abortion care: Some providers from both private and public hospitals indicated that women requiring STM-TOP face financial constraints in accessing the service. Cost of termination as a barrier for FTM-TOP was not typically reported by providers. The overall opinion score of providers on ‘payment for STM-TOP be similar to delivery services’ was not favorable. The cost of STM-TOP was found to be high by women, especially when they have to travel to distant facilities. The travel costs and day-to-day expenses until services are provided make the overall cost of STM-TOP services inaccessible because the service is provided in limited hospitals in the country.

Distance, cost and quality of services are interrelated factors that patient/clients and their families have to negotiate with when they are considering seeking services or once they have decided to seek the services. Distance can be a major obstacle to obtain care, and distance can discourage people from even trying to reach care. In general, as distance to a facility increases, utilization of its services decreases. The total actual cost of obtaining care is an important obstacle as it involves the opportunity costs of time, the cost of transportation, cost of drugs and the cost of supplies (Thaddeus and Maine 1994).

Recommendations

Access and availability of safe STM abortion services is poor in many countries, sometimes despite liberal laws and policies. Addressing the myriad factors hindering access and availability to safe abortion care requires a multi-pronged strategy (Turner et al. 2008). In some countries with accessible abortion services, delays due to barriers such as transportation, cost, and availability of abortion service are less common than the primary delay in decision-making (Ingham et al. 2008, Loeber and Wijzen 2008). In some others, especially in developing countries, all three phases of delay (i.e., delays in decision-making, access to facilities, and availability of diagnostic and abortion services with recommended standard and quality) greatly hinder access. (Dalvie 2008, Usta et al. 2008, Hyman et al. 2008). The overall finding of this study conforms to the latter delay pattern.

The recommendations suggested hereafter are based on some of the main findings underlying the three major strategic approaches for STM abortion care: a) Prevention of unwanted pregnancy through family planning and accessing early identification and termination of pregnancy could decrease the need for STM abortion care; b) Enhancing and making available woman-centered abortion for STM for both TOP and PAC prevents most of the unnecessary maternal deaths and morbidities and injustices associated with unsafe STM abortion; and c) Addressing gender issues at all levels and providing woman-centered high-quality services enhances all approaches.

1. Enhancing access and availability of 'women centered abortion care (WCAC),' including diagnostic services, options of recommended FTM- and STM-TOP methods and diversifying service outlets, and making services available to vulnerable, poor, rural and young people needs to be considered. Besides enabling health centers and hospitals to provide high-quality WCAC, innovative approaches to bring diagnostic, counseling and abortion care closer to the community, especially medication abortion and STM-PAC, need exploration ⁵.
2. Providing FTM abortion care at all possible primary health-care outlets (health centers, private clinics) is essential. Alternative and innovative approaches should also be looked for. Could HEW within a certain perimeter of a functional health center be able to provide medication abortion for early abortion? ⁶ Improving access and availability of FTM abortion care decreases the need for STM abortion care.
3. Adolescent-friendly services could enhance early decision-making and early health-care-seeking behavior. Provision of youth-friendly abortion care could also enable young women to access services early and prevent their need of STM-TOP. Youth-oriented services could be static or outreach programs. Strengthening sexuality education in schools and providing adequate information about reproduction, contraceptive methods, and abortion services to adolescents also are needed.
4. Improving access and availability of emergency abortion care (PAC) following spontaneous and unsafe abortions at all levels is essential. Enabling facilities closer to the community to provide emergency treatment for STMA could address difficulties of access, especially in rural areas. Besides educating women and the community about symptoms of abortion and strengthening early health-care-seeking behavior, enabling community health workers and health centers to provide emergency abortion care and early referral of those patients requiring hospital care is essential. When access to hospitals is difficult, health centers need to be able provide evacuation of the uterus.
5. For most women, especially poor, rural women and those with limited access (e.g. students), enabling health centers to undertake FTM abortion (both medical and VA) is of primary importance. At the same time, exploiting the relative accessibility of health centers to underprivileged women could be considered in the provision of STM abortion care. Considering provision of early STM-TOP at certain carefully selected health centers staffed with HO could be an alternative approach.⁷
6. Hospitals' preparedness in safe STM abortion provision is extremely compromised. Enabling all hospitals, especially public hospitals, to provide WCAC, especially STM-TOP, is a priority undertaking and involves training of providers, provision of equipment and drugs, developing guidelines, and providing supportive supervision. Capacity building initiatives need to prioritize hospitals used for obstetricians, general practitioners and health officers in their initiation and scaling up activities.
7. Strengthening both in-service and pre-service training is essential based on realistic objectives. Even though most GP and obstetricians reported their abortion-related training from their pre-service trainings, while most HO and nurses reported in-service trainings, both programs need to be explored in depth and strengthened.
 - a. Upgrading training and teaching health facilities' clinics to model safe abortion clinics ⁸ could be part of such an endeavor. At the same time, these facilities could be used for in-service trainings.
 - b. Values clarification should be incorporated in all trainings addressing abortion care.
 - c. Pre-service training: In addition to theoretical knowledge (including knowledge of the Ethiopian Safe Abortion Guidelines), practical training on uterine evacuations, TOP, counseling and emergency management that is enriched with professional ethics/ conduct could be considered by working closely with medical and nursing schools. The practical training of mid-level providers could be compromised due to large number of general practitioners and health officers being trained within the same facilities. Strengthening pre-service training would include educating the

⁵ Some possible approaches were cited in the discussion section and the appropriate recommendation items.

⁶ The health center equipped with MVA service provision in case of emergency evacuation is needed could serve as backup for MA provided by the HEW. This approach is not accommodated in the current Guideline.

⁷ This approach is not incorporated within the Abortion Guideline.

⁸ or strengthening clinics provide high quality sexual and reproductive health services including WCAC, FP, STI/HIV, ANC

academic staffs, enriching curriculums and teaching sessions, providing training materials, and establishing and maintaining skill labs.

- d. In-service training: Recruiting trainees who have positive attitudes needs to be considered. Recruitment of trainees also needs to be done in collaboration with concerned authorities and facility managers. The recruitment of providers for STM-TOP (obstetricians, GP, and HO) and identification of hospitals for training should be well- considered, including their accessibility to women, especially underprivileged women.
8. For early diagnosis of congenital abnormalities and to counsel women on their decision of continuing or TOP, health-care providers need additional training in fetal medicine and counseling skills and sensitization to the social and emotional challenges that detection of fetal anomalies brings to antenatal care. Training in fetal medicine has to be supported with facilities required for early diagnosis and screening guidelines (Gammeltoft et al. 2008, Fisher 2008, Bijma et al. 2008).
9. Establishing clear guidelines and mechanisms on referral for women requiring TOP, especially STM terminations, could improve access and effective use of limited resources. Providers need to know where and how to refer such cases at a local and facility level. HEW could be instrumental in promoting referrals and reducing delays at the community level.
10. Enhancing and maintaining general awareness and educational activities on the Ethiopian Safe Abortion Guidelines and safe abortion care by all providers throughout the health-care system—including private facilities (from community level, HEW, to hospitals), program managers and administrators—could alleviate misinformation and facilitate program implementation. Well-educated health care staff could further enhance community awareness and improve the referral mechanisms at all levels. Working closely with HEW and the community facilitates community-level intervention, alleviates primary-level delays and enhances referral mechanisms.
11. Workshops aimed at clarifying values are useful for addressing barriers to access stemming from misinformation, stigmatization of women and providers, and negative attitudes and obstructionist behaviors. They engage health-care providers and administrators, policymakers, community members and others in a process of self-examination, with the goal of transforming abortion-related attitudes and behaviors in a direction supportive of women seeking abortion. This is especially important for women seeking STMA, which tends to be even more stigmatized than FTMA (Fisher 2008).
12. Enhance women's awareness and understanding of safe termination of pregnancy, which entails among other things: early recognition of pregnancy (early symptoms of pregnancy; how to confirm pregnancy early; effects of irregular menstruation, be it inherent or contraception-induced); knowledge of the Ethiopian Safe Abortion Guidelines (including FTM-TOP and STM-TOP and how to access safe abortion care services); importance of making early decisions regarding intentions about unwanted pregnancy, and seeking safe abortion care early. Educating educators—as well as media professionals, teachers, health care providers, HEW and young people—is also important.
13. Undertaking research projects in collaboration with stakeholders (e.g., medical schools, regional and FMoH) on training approaches and service provision could be instrumental in identifying best approaches, scaling up best practices and using evidence-based findings to update the Ethiopian Safe Abortion Guidelines and policies. Innovative approaches to bring diagnostic, counseling and abortion care closer to the community, especially medication abortion, also need exploration.
14. Advocating for affordable and accessible abortion care services, especially safe STM abortion care for rural and poor women and students, is critical. The advocacy should include ensuring that the costs of FTM and STM abortion care be considered within maternal health services.
15. Primary prevention of unwanted pregnancies through effective FP programs is of paramount importance in decreasing the need for abortion care, even though it won't eliminate all unwanted pregnancies and the need for abortion care. It has been shown that abortion rates might remain high until contraceptive use increases to over 30% (Shah and Ahman 2010). In addition, the need for safe abortion due to method failures cannot be avoided. FP programs should educate women and enable them to be effective users. Women need information about the methods they are using, including side effects and early pregnancy detection. All women should be well-educated about emergency

contraception and how to get it. Making EC available “over the counter” enables women whenever they are coping with an unprotected sexual encounter.

16. Gender issues need to be instilled at all levels. Educational programs should enable women, including young women in secondary schools and institutions of higher learning, to have clarity of intentions (plans) regarding sexual relationships, marriage, use of contraception, and pregnancy. Uncertainties regarding sexual activity and pregnancy expose women to unwanted pregnancy and late termination. Education programs should include information on how to prevent sexual violence and how to stop violence. Poor women and young women, especially, need economic support to cope with the many issues related to unwanted pregnancy.

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References

- Abdella, Ahmed. 1999. Factors in abortion decision making. *Ethiopian Journal of Health Sciences*, 9 (2): 109-118.
- Abdella, Ahmed. 2010. Maternal mortality trend in Ethiopia; *Ethiopian Journal of Health Development*, 24 (1): 116-22.
- Abdella, Ahmed. 1996. Retrospective study on abortion admissions in Jimma Hospital, South West Ethiopia. *Ethiopian Journal of Health Development*, 10 (1):167-70.
- Abdella, Ahmed, Tamara Feters, Janie Benson, Erin Pearson, Kathryn Anderson, Hailemichael Gebreselassle, Yirgu Gebrehiwot and Solomon Tesfaye. 2008 *Meeting the demand for safe abortion care in Ethiopia: Results of a national assessment*. Unpublished.
- Abdella, Ahmed, Zufan Lakew, Fantahun Gebre and Yilma Asres. 2002. *KAP Study on abortion among Ethiopian health workers*. Ethiopian Society of Obstetricians and Gynecologist, Addis Ababa, Ethiopia.
- Baird, Traci L., Laura D. Castleman; Alyson G. Hyman, Robert E. Gringle and Paul D. Blumenthal. 2007. *Clinician's Guideline for Second-Trimester Abortion, Second Edition*. Chapel Hill, NC, Ipas.
- Berhan, Yiferu and Ahmed Abdella. 2004. Emergency obstetric performance with emphasis on operative delivery outcome: Does it reflect the quality of care? *Ethiopian Journal of Health Development*, 18 (2):96-106.
- Bijma, H.H., A. van der Heide and H.I. Wildschut. 2008. Decision-making after ultrasound diagnosis of fetal abnormality. *Reproductive Health Matters*, 16 (Suppl. 31): S82-S89.
- Boland, Reed. 2010. Second trimester abortion laws globally: Actuality, trend and recommendations. *Reproductive Health Matters*, 18 (36):67-89.
- Central Statistical Authority [Ethiopia] ORC MACRO. 2006. Demographic and Health Survey 2005. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ORC Macro.

- Dalvie, Suchitra S. 2008. Second trimester abortion in India. *Reproductive Health Matters*, 16 (Suppl. 31): S35-S45.
- Ethiopian Society of Obstetrics and Gynecologists. 2002. *Survey of unsafe abortion in selected health facilities in Ethiopia*. Addis Ababa, Ethiopia.
- Family Guidance Association of Ethiopia. 1998. *A baseline survey report on knowledge, attitude, and practice of sexual and reproductive health among Jimma youth*. Addis Ababa, Ethiopia. Unpublished.
- Federal Democratic Republic of Ethiopia, Ministry of Health. 2006. Technical and Procedural Guidelines for Safe Abortion Services in Ethiopia. Addis Ababa, Ethiopia.
- Finner, Laurence B., Lori F. Frohwirth, Lindsay A. Dauphinee, Susheela Singh and Ann M. Moore. 2006. Timing of steps and reasons for delays in obtaining abortions in the United States. *Contraception*, 74 (4): 334-44.
- Fisher, Jane. 2008. Termination of pregnancy for fetal abnormality: The perspective of a parent support organization. *Reproductive Health Matters*, 16 (Suppl. 31): S57-S65.
- Gallo, Maria F. and Nguyen C. Nghia. 2007. Real life is different: A qualitative study of why women delay abortion until the second trimester in Vietnam. *Social Science & Medicine*, 64 (2007): 1812-22.
- Gammeltoft, Tine, M.H. Tran, T.H. Nguyen and T.T. Nguyen. 2008. Late-term abortion for fetal anomaly: Vietnamese women's experience. *Reproductive Health Matters*, 16 (Suppl. 31): S46-S56.
- Gebreselassie, Hailemichael, Tamara Feters, Susheela Singh, Ahmed Abdella, Yirgu Gebrehiwot, Solomon Tesfaye, Takele Geressu and Solomon Kumbi. 2010. Caring for women with abortion complications in Ethiopia: National estimates and future implications. *International Perspectives on Sexual and Reproductive Health*, 36 (1): 6-15.
- Grimes, D. E. Raymond and B. Jones. 2001. Emergency contraception over-the-counter: The medical and legal imperatives. *Obstetrics Gynecology*, 98 (1): 151-55.
- Guilbert, E., S. Marcoux and JE Rioux. 1994. Factors associated with the obtaining of a second-trimester induced abortion. *Canadian Journal of Public Health*, 85 (6):402-6.
- Harries, Jane, Phyllis Orner, Mosotho Gabriel and Ellen Mitchell. 2007. Delays in seeking an abortion until the second trimester: A qualitative study in South Africa. *Reproductive Health*, 2007 (4): 7.
- Harrison, Abigail, Elizabeth T. Montgomery, Mark Lurie and David Wilkinson. 2000. Barriers to implementing South Africa's Termination of Pregnancy Act in rural KwaZulu/Natal. *Health and Policy Planning*, 15 (4): 424-31.
- Henshaw, Stanley. 1995. Factors hindering access to abortion services. *Family Planning Perspectives*, 27 (2): 54-9.
- Hyman, Alyson, Traci L Baird and Indira Basnett. 2008. Establishing second trimester abortion services: Experience in Nepal, Viet Nam and South Africa. *Reproductive Health Matters*, 16 (Suppl. 31): S35-S45.
- Ingham, Roger, Ellie Lee, Steve Joanne Clements and Nicole Stone. 2008. Reasons for second trimester abortion in England and Wales. *Reproductive Health Matters*, 16 (Suppl. 31): S90-S101.
- Ipas-Ethiopia. 2008. Report on abortion from health facilities supported by Ipas. Unpublished.
- Jewkes, Rachel K., Tebogo Gumedde, Margaret S. Westaway, Kim Dickson, Heather Brown and Helen Rees. 2005. Why are women still aborting outside designated facilities in metropolitan South Africa? *BJOG*, 112 (9):1236-42.
- Lawson H.W., A. Frye, H.K. Atrash, J.C. Smiyh, H.B. Shulman and M. Ramick. 1994. Abortion mortality, United States, 1972 through 1987. *American Journal of Obstetrics Gynecology*, 171:1365-72.
- Loeber, Olga and Cecile Wijssen. 2008. Factors influencing the percentage of second trimester abortion in the Netherlands. *Reproductive Health Matters*, 16 (Suppl. 31): S30-S36.

- Lynxwiler J. and M. Wilson. 1994. A case study of race differences among late abortion patients. *Women Health*, 21 (4):43-56.
- Rosenfield A.. 1994. The difficult issue of second-trimester abortion. *New England Journal of Medicine*, 331 (5): 324-5.
- Salter, Cynthia, Heidi Johnston and Nicolene Hengen. 1997. Care for postabortion complications: Saving women's lives. *Population Report*, 25 (1).
- Shah, Iqbal and Elisabeth Ahman. 2010. Unsafe abortion in 2008: global and regional levels and trends. *Reproductive Health Matters*, 18 (36): 90-101.
- Singh, Susheela, Tamara Feters, Hailemichael Gebreselassie, Ahmed Abdella, Yirgu Gebrehiwot, Solomon Kumbi and Suzette Audam. 2010. The estimated incidence of induced abortion in Ethiopia, 2008. *International Perspectives on Sexual and Reproductive Health*, 36 (1): 16-25
- Thaddeus, Sereen and Deborah Maine. 1994. Too far to walk: Maternal mortality in context. *Social Science and Medicine*, 38 (8): 1091-1110.
- Trussell, James, German Rodriguez, Charlotte Ellertson. 1999. Updated Estimates of the Effectiveness of the Yuzpe Regimen of Emergency Contraception. *Contraception*, 59 (3): 147-151.
- Turner, Katherine L., Alyson G. Hyman and Mostho C. Gabriel. 2008. Clarifying values and transforming attitudes to improve access to second trimester abortion. *Reproductive Health Matters*, 16 (Suppl. 31): S108-S116.
- Usta, Momade Bay, Ellen MH Michell, Hailemichael Gebreselassie, Eunice Brookman-Amissah and Amata Kwizera. 2008. Who is excluded when abortion access is restricted to twelve weeks? Evidence from Maputo, Mozambique. *Reproductive Health Matters*, 16 (Suppl. 31): S14-S17.
- Varkey, Sanjani. 2000. Abortion services in South Africa: Available yet not accessible to all. *International Family Planning Perspectives*, 26 (2): 87-8.
- World Health Organization. 1995. *Complications of abortion: Technical and managerial guidelines for prevention and treatment*. Geneva: WHO.
- Yusuf, L. and Z.A. Zein. 2001. Abortion at Gondar College Hospital, Ethiopia. *East African Medical Journal*, 78 (5):265-8.

