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Changes in Morbidity and Abortion Care in Ethiopia After Legal Reform: National Results from 2008 and 2014

Yirgu Gebrehiwot,
member of the faculty of medicine, Addis Ababa University, Ethiopia

Tamara Fetters,
senior advisor for research and evaluation, Ipas, Chapel Hill, NC, USA

Hailemichael Gebreselassie,
senior advisor, Ipas Africa Alliance, Ipas, Chapel Hill, NC, USA

Ann Moore,
principal research scientist of international research—both with the Guttmacher Institute, New York

Mengistu Hailemariam,
special advisor, Ministry of Health, Addis Ababa, Ethiopia

Yohannes Dibaba,
senior advisor for research and evaluation, Ipas Ethiopia, Addis Ababa

Akinrinola Bankole, and
director of international research—both with the Guttmacher Institute, New York

Yonas Getachew
officer, Ethiopian Society of Obstetrician-Gynecologists, Addis Ababa

Abstract

CONTEXT—In Ethiopia, liberalization of the abortion law in 2005 led to changes in abortion services. It is important to examine how levels and types of abortion care—i.e., legal abortion and treatment of abortion complications—changed over time.

METHODS—Between December 2013 and May 2014, data were collected on symptoms, procedures and treatment from 5,604 women who sought abortion care at a sample of 439 public and private health facilities; the sample did not include lower-level private facilities—some of which provide abortion care—to maintain comparability with the sample from a 2008 study. These data were combined with monitoring data from 105,806 women treated in 74 nongovernmental organization facilities in 2013. Descriptive analyses were conducted and annual estimates were calculated to compare the numbers and types of abortion care services provided in 2008 and 2014.

Author contact: yirgug@yahoo.com.

Medium-level clinics, which can provide medical abortion products for induced abortion, were included in the larger incidence study to ensure a complete assessment of abortion incidence in the country.

RESULTS—The estimated annual number of women seeking a legal abortion in the types of facilities sampled increased from 158,000 in 2008 to 220,000 in 2014, and the estimated number presenting for postabortion care increased from 58,000 to 125,000. The proportion of abortion care provided in the public sector increased from 36% to 56% nationally. The proportion of women presenting for postabortion care who had severe complications rose from 7% to 11%, the share of all abortion procedures accounted for by medical abortion increased from 0% to 36%, and the proportion of abortion care provided by midlevel health workers increased from 48% to 83%. Most women received postabortion contraception.

CONCLUSIONS—Ethiopia has made substantial progress in expanding comprehensive abortion care; however, eradication of morbidity from unsafe abortion has not yet been achieved.

The Millennium Development Goals (MDGs) catalyzed efforts to reduce global maternal mortality, but while great progress has been achieved, much remains to be done. The number of maternal deaths worldwide has dropped by 45% since the launch of the MDGs in 2000;[1] however, each year, an estimated 47,000 women die and another 7,000,000 suffer from complications of an unsafe abortion—the vast majority of them in the developing world.[2–4] Complications of unsafe abortion are one of the top five causes of maternal mortality worldwide,[3] and the one that is the most realistically preventable with political will and proven low-cost technologies.

Despite the country's enormous improvements in contraceptive use over the past two decades, one in four married women in Ethiopia have an unmet need for contraception.[5] As a result, more than one in three pregnancies in Ethiopia are unintended. According to a national study on abortion conducted in 2008, 42% of unintended pregnancies ended in abortion—contributing to an abortion ratio of 13 abortions per 100 live births.[6] Of the 382,000 induced abortions in Ethiopia that year, as many as 73% were likely unsafe—that is, performed by someone lacking the necessary skills or knowledge, in an environment lacking minimal medical standards, or both. Despite a 2005 revision of Ethiopia's abortion law, followed by a liberal interpretation of those changes, the country's level of abortion-related complications remained high.[7,8] In 2008, nearly 58,000 women sought treatment in a health facility for complications resulting from an induced or spontaneous abortion, and tens of thousands more did not seek care for abortion-related complications from which they were suffering.[8] In this context, measurement of changes in the reproductive health of women in Ethiopia—the second largest country in Africa—is extremely important for policymakers and planners both in Ethiopia and elsewhere.

Standards and guidelines that first took effect in Ethiopia in 2006 now allow abortion to be performed legally in cases involving rape or incest, if the woman has a physical or mental disability, to preserve her life or health, or if she is a minor who is physically or mentally unprepared for childbirth.[9] In 2008, Ethiopia had an abortion rate of 24 per 1,000 women of reproductive age, which is lower than that for the Eastern Africa region (34 per 1,000).[6,10] Nonetheless, changing generations of behaviors resulting in unsafe abortions and ending centuries of stigma and silence may take time.[11–13] Although the scaling up of legal abortion services throughout the health care system has progressed relatively rapidly since legal reform,[13,14] women continue to use unsafe methods to induce abortions outside of health

facilities. In addition, the provision of skilled abortion care has been hampered by a shortage of trained health care providers and variable health service availability across the largely rural population of more than 95 million people.[15,16]

The goal of this study was to provide a comprehensive description of legal abortion and postabortion care in Ethiopia in 2014 relative to three previous publications that described abortion care in Ethiopia in 2008.[6,8,15]

METHODS

We used a cross-sectional epidemiological study design known as the Prospective Morbidity Methodology (PMM),[17] which was developed by the World Health Organization;[18] the methodology was tested and adapted in South Africa[19–21] to collect prospective, descriptive data on abortions, abortion clinical management and abortion-related morbidity. The PMM was implemented as a component of a larger project to assess the incidence of induced abortion, and the severity and consequences of unsafe abortion in Ethiopia. Methods and procedures relevant to the examination of facility-based abortion care—that is, legal abortion procedures and postabortion care related to complications of unsafe or spontaneous abortions—are provided here in detail; measures of abortion incidence and of changes in the health system's capacity to provide abortion care are provided elsewhere.[22,23] Ethical approval for this study was obtained from the Guttmacher Institute's Institutional Review Board in the United States and from the National Ethics Review Committee of the Ministry of Science and Technology in Addis Ababa.

Identifying and Selecting the Facility Sample

A complete description of the methodology, sampling and analytic procedures for the 2008 study is published elsewhere.[8] The 2014 sampling frame was constructed from the distribution list of the Food, Medicine and Health Care Administration and Control Authority of Ethiopia, as well as from lists of for-profit private clinics compiled by the nongovernmental organization (NGO) DKT Ethiopia, to include representation from all possible public, for-profit private and NGO providers of abortion care. Stratified multistage sampling was used to randomly select from the country's nine regions and two city administrations a proportion of each of four types of health facilities that are authorized to provide abortion care according to the Technical and Procedural Guidelines for Abortion Care published by the Ministry of Health.[9] The four types of facilities include public hospitals, public health centers, private hospitals and high-level private clinics. All nongovernmental clinics that provided abortion care were included; high-level private clinics were included because, as providers of outpatient care only, they are allowed to provide legal abortion if they have a properly trained health care provider; in contrast, health posts and medium- and low-level private clinics were excluded because they were expected to provide limited or no abortion services.* Health facilities were systematically selected to ensure adequate representation of each type of facility and region, and to allow comparison with the 2008 sample and results.

In 2008, the sampling universe comprised 898 health facilities, of which 393 were randomly selected (Table 1); no attempt was made to exclude nonproviding facilities that met the

larger inclusion criteria. In 2014, because of a Ministry of Health initiative to increase the number of low-level health facilities and improve access to health care across the country in the preceding five years, the sampling universe comprised 3,137 health facilities; 729 of these were selected. Given the increased size of the 2014 health facility universe and the multiple facility lists consulted during the construction of the sampling universe, an additional screening stage was added after sample selection in that year. Prior to data collection, some sites were eliminated or added by representatives of the Regional Health Bureaus of the Ministry of Health because they were found to be duplicates, new facilities, closed facilities, sites without human resources to provide care or facilities that provided only specialized care not related to abortion. If no information was available about the facility, it remained in the sampling frame. For the facilities that were removed or considered sampling frame errors, we assumed that an equivalent proportion existed in nonselected sites; this assumption was used to adjust the initial universe number and obtain a truer estimate of the national universe of facilities for the calculation of the region and facility type–specific weighting for analysis. The study sampling design resulted in recommended samples of 44% and 23% of all eligible facilities in Ethiopia in 2008 and 2014, respectively.

Data Collection

Data collection instruments from Ethiopia (2008), Kenya, Malawi and Cambodia were reviewed by the study team while designing the instruments on induced abortion and postabortion services in Ethiopia in 2014. Data collection instruments were pilot tested and revised before provider training was conducted. In preparation for the study, one provider from each clinic or health center and two from each hospital were selected to participate in a group training session to teach them to use the data collection tools with each woman presenting for abortion care during a 30-day period. Study team members and regional data collection supervisors monitored implementation with in-person visits and phone calls, while subsequently collecting data for a second corresponding portion of the study, the Health Facility Survey (HFS), which will be reported elsewhere.

For 2014, data collection began in December 2013 and continued until May 2014. Of the sample of 729 facilities, 134 provided no information and one refused to participate; these nonresponding sites made up 18% of all selected facilities. Of the 594 responding facilities, 155 reported providing no abortion services and were included as responding but nonproviding, to allow for national calculations (not shown). Detailed information was collected from the remaining 439 abortion-providing health facilities in the 2014 study; five of these sites submitted no records for the data collection period, and 74 were NGO facilities with only annual summaries of monitoring and evaluation data. Ultimately, 344 facilities participated in 2008 and 594 participated in 2014, for response rates of 88% and 82%, respectively (Table 1).

Prospective abortion-related morbidity data were collected on the care of 5,604 women who sought a safe and legal abortion or care for complications of an induced or spontaneous abortion. Health care providers completed a form for each woman that included data on patient demographics, self-reported induction attempts, reproductive history, vital signs, morbidity symptoms found by physical exam and clinical management at the facility;

patients were not interviewed directly. Data collectors were not asked to attempt to differentiate complications resulting from unsafe abortions from those resulting from miscarriages or to classify the severity of a woman's morbidity. To standardize classification based solely on symptoms noted in data forms, we defined morbidity as low if the woman had no clinical signs of infection, organ failure or suspicious findings during uterine evacuation; as moderate if she had early signs of peritonitis or sepsis, including an elevated temperature or offensive products of conception upon evacuation; and as severe or "near-miss" if she had one or more signs of unsafe abortion morbidity, including generalized peritonitis, tetanus, a pulse rate of more than 119 beats per minute, organ failure, temperature higher than 37.9 degrees Celsius, evidence of a foreign body or injury to the cervix or uterine area, shock or death.

In both the 2008 and 2014 studies, data were collected from NGO-affiliated health clinics. In 2008, providers in the 24 NGO health facilities collected data prospectively on abbreviated forms similar to those used in the public- and private-sector facilities. In 2014, annual retrospective service statistics from 2013— consisting only of numbers of procedures from the 74 abortion-providing facilities—were collected from the head offices. Monthly averages were calculated and combined with prospective data to create national estimates of women seeking legal abortions and postabortion care in the NGO facilities. In 2008, NGO health facilities provided care to an estimated 70,723 women; in 2013, NGO facilities reported providing abortion care to 105,806 women (not shown).

Finally, because service statistics from one NGO in 2013 did not distinguish postabortion care cases from induced abortions, the proportion of all cases that were for post-abortion care was estimated and disaggregated from the total 2013 annual monitoring data for analysis. This calculation was based on a review of health facility results from similar facilities, HFS interviews at the NGO and a secondary survey on the likelihood of caring for women with abortion complications in a subset of the NGO's facilities. An estimated 3% of all procedures from the 28 NGO facilities were likely postabortion care, whereas the remaining 97% were legal induced abortions.

Analysis

We calculated weighted adjustments for each stratum with facilities as the primary sampling unit; each woman cared for in a given facility was given the same weight. The final adjusted weights accounted for the number of facility respondents, sampling frame errors, the sampling fraction, nonprovision of abortion care and the level of nonresponse. This resulted in the possible number of strata by region and facility type being reduced from 55 to 48, because seven strata had no facilities of a particular type in a selected region.

To calculate the annual absolute number of and 95% confidence intervals for legal abortions, complications of low-to-moderate severity and severe complications, an adjustment was made. Estimates from data for individual clients were frequently lower than provider estimates collected during key informant interviews from the corresponding HFS, which collected data on the past month and average caseload for abortion care. To adjust for variation across the three estimates, we used the mean of the three data points for each facility to calculate the national estimates of legal abortion and postabortion cases in each

facility. When provider estimates were unavailable (namely, for the number of legal abortions in 2008, and for the caseload distribution for NGOs by morbidity severity, which was not included in the 2014 survey), corrections were applied on the basis of the observed data. We used the ratio of the mean caseload from the PMM study to the mean postabortion care caseload in the HFS as a multiplier for the point estimates and associated confidence intervals for legal abortions, severe complications and low-to-moderate complications in 2008.

Consideration and analysis of when during pregnancy each woman presented for care also differed between the two years. In 2008, a continuous variable based on the day of each woman's self-reported last menstrual period was used, followed by a categorical trimester variable based on a clinician's examination of gestation; the 2008 data includes 15 women for whom missing information on gestational age was imputed to the first trimester that neither variable was reported. In 2014, data were based on a continuous variable on women's reported last menstrual period, followed by a continuous variable based on clinical exam. In both years, responses were combined using clinical assessment, and then women's reports, if clinical estimation was missing.

Data were entered using Epidata version 4.0 and analyzed using Stata version 11.0. We present descriptive data as unweighted frequencies and weighted proportions of nonmissing responses. We adjusted the data to account for variance estimation appropriate for survey data and the multistage stratified sampling design. Changes in percentages, adjusted chi-square statistics and their corresponding p-values were used to test for bivariate associations between the study waves. We computed rates of facility-based care using numbers of women of reproductive age (15–49-year-olds) and the annual national rate of population growth as documented in the Population and Housing Census Report from 2007;[24] the population estimate was 17,707,953 in 2008 and 22,183,796 in 2014. The care, treatment, and sociodemographic characteristics of women seeking abortion care in Ethiopia are described, and national estimates of the absolute number of women seeking abortion care in these types of health facilities were calculated. Health outcomes were calculated using Impact 2, the Marie Stopes International Impact Calculator.[25]

RESULTS

National Estimates of Abortion Care

More women in 2014 than in 2008 presented for abortion care at all facility types, except private hospitals and high-level private clinics (Table 2): For example, an estimated 3,610 women per month presented for abortion care at public hospitals in 2014, compared with 1,582 in 2008. Of all women presenting at a facility for abortion care in 2008, 36% did so at a public facility and 64% did so at a private or NGO facility; in 2014, those proportions were 56% and 44%, respectively. The largest shift occurred in public health centers, where the proportion of all women presenting for abortion care increased from 22% in 2008 to 40% in 2014.

Between the two study waves, the overall number of women presenting at a health facility for abortion care increased substantially. The estimated annual number of women who

presented for a legal abortion increased by more than 39%, from 158,000 in 2008 to 220,000 in 2014; the estimated annual number presenting for postabortion care doubled over the period, from 42,000 to 87,000 women with low-to-moderate morbidity and from 16,000 to 38,000 women with severe morbidity. Legal abortion procedures, as a proportion of all abortion care sought by women, decreased from 73% to 64% between the two studies because of the substantial increase in the number of women seeking treatment for abortion complications. In addition, the proportions of all abortion care sought by women for low-to-moderate abortion morbidity and for severe abortion morbidity increased between 2008 and 2014 from 20% to 25% and from 7% to 11%, respectively.

After adjustment for population growth, both the rate of legal abortion and the rate of postabortion care received by women at a health facility increased. The rate of facility-based legal abortion was 9.2 per 1,000 women aged 15–44 in 2008 and 10.0 per 1,000 in 2014; the rate of postabortion care in facilities was 3.4 per 1,000 women in 2008 and 5.7 per 1,000 in 2014.

Characteristics of Women Seeking Abortion Care

In 2008 and 2014, nearly one-third of women presenting at a public- or private-sector health facility for abortion care were single (32% for each—Table 3), and more than half were aged 24 or younger (52–53%). A smaller proportion of women in 2014 than in 2008 were aged 35 or older (9% vs. 12%). In addition, women in 2014 were somewhat more educated: A smaller proportion that year than in 2008 had no education (31% vs. 34%). Greater proportions of women in 2014 than in 2008 reported that their pregnancy resulted from contraceptive failure (30% vs. 23%) and that they had tried to interrupt their pregnancy (15% vs. 11%).

Similar proportions of all women presenting at a public- or private-sector health facility for postabortion care in 2008 and 2014 required a uterine evacuation procedure (79% and 82%, respectively—not shown). The distribution of women who received abortion care by procedure type changed between 2008 and 2014 (Table 4). Smaller proportions of women in 2014 than in 2008 received a procedure by vacuum aspiration (53% vs. 73%) or sharp curettage (4% vs. 23%). On the other hand, much larger proportions of women in 2014 than in 2008 benefited from the introduction of medication abortion, both for induced abortion (36% vs. 0%) and for postabortion care (5% vs. <1%). The type of health care worker who treated women also changed between the two surveys: The proportion of women cared for by a physician decreased between 2008 and 2014 (from 52% to 18%), whereas the proportion cared for by a midlevel provider—such as a nurse, midwife, health officer or integrated emergency surgical officer—increased (from 48% to 83%). Seventy-seven percent of women who received abortion care in 2014 left the facility with a contraceptive method; information on postabortion contraception was not collected in 2008. Most women—71% in both years—received medication for the pain and cramping related to their abortion care. And in both 2008 and 2014, the vast majority of women who sought an abortion did so in their first trimester of pregnancy (89% and 92%, respectively), and most women who sought postabortion care did so for complications resulting from a procedure performed in the first trimester (66% and 71%).

Although the proportion of women presenting at a public- or private-sector health facility for abortion care who had severe abortion complications was greater in 2014 than in 2008, no difference by year was found in the proportion of all women requiring hospitalization for severe complications (Table 5). The proportion of women presenting for care who died from complications of an unsafe abortion was less than 1% in both years; in absolute numbers, seven women died in 2008 and four in 2014, despite a much greater number of women seeking postabortion care in 2014. The proportion of women with the most telling signs of unsafe abortion— signs of a foreign body having been inserted in or of mechanical injury to the vaginal or cervical area—were the same for the two survey years (7%).

Some differences in severe complications were found, however. The proportion of women presenting for postabortion care who had complete organ or system failure was greater in 2014 than in 2008 (9% vs. 2%). Very few women in either year suffered from generalized peritonitis or tetanus. Between 2008 and 2014, the proportion of women who suffered from shock increased (from 4% to 8%) and the proportion with sepsis decreased (from 16% to 8%). Finally, although the proportion of women with a highly elevated temperature (higher than 37.9°C) did not change between 2008 and 2014, the proportion with a high pulse rate (more than 119 beats per minute) increased from 3% to 5%.

DISCUSSION

Between 2008 and 2014, Ethiopia experienced economic and social changes, and women's reproductive health and health-seeking behavior greatly improved. During the period, training of health extension workers and midwives expanded, the health infrastructure and availability of health care in the public health system improved, women's desired fertility decreased, contraceptive use increased and the contraceptive method mix expanded, and the availability of both safe induced abortion and postabortion care through public and NGO facilities improved.[5,23,26,27] Results of this study show that important changes in abortion care provision in the country also occurred. For example, more than one-third of women presenting for abortion care in 2014 received a medication abortion, an option unavailable to them in 2008. In addition, three-quarters left the health care facility with a contraceptive method to prevent a future unplanned pregnancy.

In 2009, physicians outnumbered midwives in Ethiopia,[28] but efforts to decentralize maternal health care included expanding midwifery training and resulted in a quadrupling of the number of midwives between 2008 and 2012.[26,28] In 2014, we found that Ethiopian women tended to seek abortion care from a public health center and receive care from a midlevel provider, which should make care more affordable and accessible for women, as well as more cost-effective for the nation. In addition, research in several countries has shown that women receiving care from midlevel providers are more likely to accept a contraceptive method following their care.[29–31]

Increases in the number of primary health facilities has corresponded to an expansive scale-up in task-shifting and training of health workers—primarily midwives and other midlevel providers—which is necessary to extend comprehensive abortion care and introduce medication abortion. Between 2008 and 2014, the number of women presenting in a health

facility for legal abortion increased by more than 39%, and the number of women presenting for care of abortion complications increased by 100%. This high demand for abortion care highlights the importance of doing more to meet the demand for contraception: One-quarter of married Ethiopian women have an unmet need for contraception.[5] One way to do this is through postabortion contraceptive counseling and provision, which already appears to be quite successful in Ethiopia, given the high proportion of women in 2014 who accepted a method after abortion care.

Many global experts presume that the drug misoprostol— and its off-label use as an abortifacient—is decreasing abortion-related morbidity around the globe.[32–34] The role misoprostol is playing in morbidity changes in Ethiopia is still unclear. Most government efforts have focused on the provision of medication abortion—the combined product of mifepristone and misoprostol—in health facilities.[14] Providing information about and direct access to misoprostol for induced abortion has been a low priority and even discouraged in the public sector.

Several studies conducted in Ethiopia prior to and soon after legal reform suggest that unsafe abortion has decreased.[14,26,35] According to a study conducted among 2,275 women admitted for complications of unsafe abortion in Addis Ababa hospitals in 1990–1991, 28% had self-induced an abortion;[36] the two most common methods used were high doses of oral antibiotics and plastic tubes inserted vaginally. In this study, we found that 15% of women presenting at a health facility for abortion care in 2014 reported having tried to interrupt their pregnancy; this proportion is similar to that reported in a 2010 study in Ethiopia among 400 women seeking postabortion care in 13 health facilities (12%).[37] These results also show the difficulties that remain in eliminating unsafe abortion, even in countries where the procedure is legal. In addition, little is known about the methods that women currently use to try to terminate their own pregnancies and that contribute to abortion-related morbidity; a 2006 study in nearby Tanzania reported that the most common method used there were plants believed to cause uterine contractions.[38]

Overall, the frequency and severity of abortion-related morbidity for which women sought care increased between 2008 and 2014. However, the change in the proportion of women with life-threatening complications of unsafe abortion who sought assistance varied by symptom; for example, the proportions of women experiencing organ failure and shock increased over time, whereas the proportion experiencing sepsis decreased. This resulted in conflicting indications of severe morbidity, rather than a consistent trend among all of the indications. In any case, it is clear that postabortion care services have expanded throughout the country, given the increased rate of facility-based postabortion care in 2014 as compared with 2008.

Limitations

This study has several limitations. Clinical symptoms were used to estimate the consequences of unsafe abortion; however, some women presenting for postabortion care—particularly those whose pregnancy was later in gestation—may have been experiencing complications of a miscarriage, which would result in an overestimate of the number of women with abortion complications. A small proportion of recognized pregnancies will

result in miscarriage, but care-seeking in these situations is considered infrequent unless women are in the second trimester of their pregnancies, and no data exist with which to make an adjustment. Also, while every attempt was made to emphasize the need to capture information on all women seeking care, providers may have missed collecting data from some women, which would underestimate postabortion care cases and symptoms. The potential for underestimation resulted in the decision to use facility caseload averages from the corresponding health facility provider interviews and the PMM to create national estimates. The failure of one NGO to distinguish postabortion cases from induced abortions resulted in the need for further investigation via comparable data, a secondary survey and key informant interviews to create the final adjustment for postabortion care, which was estimated to be minimal (3% of all abortion care provided at that NGO's facilities). This disaggregation used the best available evidence, but was nonetheless based on incomplete records. Finally, the use of abbreviated monitoring data in 2014 resulted in our inability to create nationally comparable estimates of sociodemographic, treatment and morbidity variables. To compensate for the loss of this information, these data have been reanalyzed for 2008, making both sets of estimates generalizable only to non-NGO facilities. The characteristics and clinical treatment of women in this sector may differ from those of women in the public and private for-profit sectors.

Because caseload increases were expected in the second round of data collection, the list of symptoms used in the data collection form was replaced in 2014 by dichotomous questions for important variables like organ failure and sepsis to make the form simpler for data collectors; this change and the corresponding training on how to use the form may have emphasized some difficult-to-diagnose conditions and probably caused overestimation of some morbidity symptoms in 2014.

Although the 2014 data present information on a greater proportion of all abortion care in the country, they represent only women who presented in health facilities for abortion care. We have no information on women who were too ashamed or afraid to seek an abortion at a facility, could not access a facility or were turned away, or on the outcome of their pregnancies. Yet, the data presented provide a vital portrait of the demand for and increasing utilization of the country's expanding abortion services over time.

Conclusion

More research is needed to explore the complexities and changing dynamics of the abortion landscape in Ethiopia. Research that provides a more robust, complete and current estimate of the causes and contributions of abortion to maternal mortality would add information that complements recent changes in the maternal mortality ratio, which have primarily been modeled. Moreover, what methods women are using to induce an abortion outside of health facilities and why they continue to pursue unsafe abortion in a country where abortion is legal are especially important research questions to be pursued. Finally, as plans for even greater expansion of health facilities and the health care workforce continue, it is important that facilities and providers—especially midlevel providers—be prepared to treat the increasing numbers of women seeking legal abortion and postabortion care services.

The eradication of unsafe abortion in Ethiopia remains a challenge. Yet, in 2014 alone, an estimated 961 maternal deaths and nearly 180,000 unsafe abortions were averted as a result of the abortion care and postabortion contraceptive services provided by public, private and NGO health providers.[39] This translates into an estimated US$4,132,133 in direct health costs saved by families and the health care system on pregnancy-related care.[25,39] Ethiopia has now joined a number of countries that have recently increased access to safer abortions through legal reform, but are struggling to implement these changes under resource constraints, competing health priorities and a slow pace of change.[13,40] In Sub-Saharan Africa, liberalization of colonial laws restricting abortion is still rare: Since 1972, only Ethiopia, Ghana, Mozambique, Rwanda, South Africa and Zambia have changed their abortion laws through either legal or policy changes. None of these countries has eradicated unsafe abortion, and many—like South Africa—have spent decades trying to eliminate persistent barriers to women's access to legal abortions.[12,21,41,42] Social and physical determinants of all kinds continue to drive women to seek clandestine abortions that result in their own harm. Yet, the efforts of national and international partners to expand access to abortion care throughout Ethiopia—by creating more affordable care closer to where women live and by preventing morbidity, mortality and unplanned pregnancy through access to legal abortion—could serve as a model for other countries.

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TABLE 1

Number of eligible health facilities, and number and percentage of selected and responding facilities, by facility type, Ethiopian Prospective Morbidity Survey, 2008 and 2014

Facility	2008					2014						
	No. of eligible facilities	Total selected facilities		Responding facilities		No. of eligible facilities	Total selected facilities		Responding facilities		Responding facilities that provide abortion care	
		No.	%	No.	%		No.	%	No.	%	No.	%
Public hospitals	94	94	100	90	96	120	120	100	107	88	105	98
Public health centers	597	177	30	158	89	2,597	388	15	310	80	188	61
NGO reproductive health clinics[†]	24	24	100	24	100	74	74	100	74	100	74	100
Private hospitals	39	39	100	39	100	64	64	100	46	72	42	91
High-level private clinics[‡]	144	59	41	33	56	282	83	29	57	69	30	53
Total	898	393	44	344	88	3,137	729	23	594	82	439	74

[†]In 2008, NGO reproductive health clinics used data collected prospectively; in 2014 they used their own retrospective service statistics.

[‡]High-level private clinics offer medical outpatient services, STI treatment, HIV counseling and testing, and inpatient services; clinics with trained practitioners are allowed to provide abortion care in accordance with Ministry of Health guidance. *Notes:* NGO=nongovernmental organization. In this and subsequent tables, abortion care includes legal abortion procedures and postabortion care related to complications of unsafe or spontaneous abortions.

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TABLE 2

National estimates of abortion care provided by health facilities in Ethiopia, by survey year

Measure	2008[†]		2014	
	No. of women/rate	%[‡]	No. of women/rate	%[‡]
Type of facility[*]				
Public hospital	1,582 per month	13.6	3,610 per month	16.2
Public health center	690 per month	22.3	1,248 per month	39.5
Private hospital	525 per month	4.5	478 per month	2.7
Private high-level clinic	295 per month	9.5	268 per month	5.5
NGO health facilities	5,816 per month	50.0	8,730 per month	36.1
Type of abortion care				
Legal abortion	158,387 per year (92,571–224,277)	73.2	220,286 per year (189,755–250,818)	63.8
PAC with low/moderate abortion morbidity[§]	42,091 per year (36,809–47,392)	19.5	86,731 per year (77,291–96,121)	25.1
PAC with severe abortion morbidity[§]	15,822 per year (13,227–18,424)	7.3	38,135 per year (31,795–44,455)	11.1
Rate of facility-based legal abortion[††]	9.2 (5.4–13.1)	na	10.0 (8.6–11.4)	na
Rate of facility-based treatment for PAC[††]	3.4 (2.9–3.8)	na	5.7 (4.9–6.4)	na

[*] Significantly different by survey year at $p \leq .05$.

[†] The results for 2008 differ from those published in Gebreselassie et al. (reference 8) because they include legal abortion data not included in the earlier analysis; results also differ from those published in Moore et al. (reference 22) because of differences in the size and composition of the facility samples.

[‡] Facility type frequencies are unweighted; all percentages and annual numbers of cases are weighted and presented as a proportion of nonmissing responses.

[§] Morbidity was defined as low if the woman had no clinical signs of infection, organ failure or suspicious findings during uterine evacuation; moderate if she had early signs of peritonitis or sepsis, including an elevated temperature or offensive products of conception upon evacuation; and severe or "near-miss" if she had one or more signs of unsafe abortion morbidity, including generalized peritonitis, tetanus, a pulse rate >119 beats per minute, organ failure, temperature >37.9° C, evidence of a foreign body or injury to the cervix or uterine area, shock or death.

[††] Rates per 1,000 women aged 15–49 based on population estimates from adjusted 2007 Ethiopian Census data (source: reference 24). *Notes:* NGO=nongovernmental organization. PAC=postabortion care. na=not applicable. Frequencies are unweighted counts of all individuals, and percentages are weighted to account for the complex sampling and study design. Figures in parentheses are confidence intervals. Percentage distributions may not add to 100.0% because of rounding.

TABLE 3

Number and percentage distribution of women presenting for abortion care in public- and private-sector health facilities, by selected characteristics, according to survey year

Characteristic	2008†		2014	
	N‡	%‡	N‡	%‡
Marital status				
Single	883	31.7	1,581	31.6
Married	1,966	58.0	3,295	56.6
Cohabiting	107	4.4	272	5.1
Separated/widowed/divorced	133	4.9	358	6.7
Age *				
≥17	182	6.8	344	6.6
18–24	1,350	46.6	2,394	45.6
25–29	734	22.4	1,413	25.0
30–34	400	12.1	718	13.6
≥35	426	12.1	556	9.2
Rural residence				
Yes	1,150	39.5	na	na
No/no response	1,942	60.5	na	na
Education *				
None	1,002	33.7	1,558	30.9
Primary	855	27.3	1,763	32.2
Secondary	968	31.8	1,853	32.2
Postsecondary	257	7.2	347	4.7
Reported a previous abortion				
Yes	245	13.1	602	11.6
No/no response	284	86.9	5,002	88.4
No. of pregnancies				
1	1,200	41.1	2,377	43.6
2	530	16.0	1,045	16.9
3	389	12.6	752	12.9
≥4	972	29.3	1,418	26.7
Pregnancy was result of contraceptive failure **				
Yes	714	23.2	1,570	30.4
No/no response	2,378	76.8	4,034	69.6
Tried to interrupt the pregnancy **				
Yes	337	10.5	765	14.9
No/no response	2,755	89.5	4,839	85.1
Total	na	100.0	na	100.0

* $p<.05$.

** p<.01.

† Results differ from those published in Gebreselassie et al. (reference 8) because NGO facilities were excluded from the sample in 2014 and were subsequently removed from this analysis to improve comparability between the two waves.

‡ Sizes of subgroups (counts) are unweighted, whereas percentages were calculated with weights for national representation; percentages are proportions of nonmissing responses, except where explicitly noted. *Notes:* na=not applicable. Percentage distributions may not add to 100.0% because of rounding.

TABLE 4

Number and percentage distribution of women presenting for abortion care in public- and private-sector health facilities, by measures of clinical management and treatment, according to survey year

Measures	2008[†]		2014	
	No.[‡]	%[‡]	No.[‡]	%[‡]
Method of evacuation[***]				
MVA/EVA	1,643	72.9	2,774	52.7
Medical methods for induced abortion	1	0.0	1,712	35.6
Medical methods for PAC	18	0.4	228	5.4
Sharp curettage	870	23.2	262	3.7
Other methods[§]	130	3.5	36	1.7
Provider type[††,***]				
Physician	1,645	51.6	1,386	17.5
Midlevel provider	1,010	48.4	3,540	82.5
Woman received a contraceptive method				
Yes	na	na	4,123	76.7
No/no response	na	na	1,481	23.3
Woman received medication for pain				
Yes	2,010	70.9	4,231	70.5
No/no response	1,082	29.1	1,373	29.5
Best estimate of trimester of the pregnancy for women seeking legal terminations				
First trimester	1,049	89.3	2,244	91.6
Second trimester	173	10.7	404	8.4
Best estimate of trimester of the pregnancy for women with complications				
First trimester	1,144	65.9	1,843	70.5
Second trimester	719	34.1	932	29.6
Total	na	100.0	na	100.0

[***] p<.001.

[†] Results differ from those published in Gebreselassie et al. (reference 8) because NGO facilities were excluded from the sample in 2014 and were subsequently removed from this analysis to improve comparability between the two waves.

[‡] Sizes of subgroups (counts) are unweighted, whereas percentages were calculated with weights for national representation; percentages are proportions of nonmissing responses, except where explicitly noted.

[§] For both years, the "other" category refers primarily to uterotonics and manual removal of products.

[††] Physicians include specialists, general practitioners, residents and interns; midlevel providers include nurses, midwives, health officers and integrated emergency surgical officers. *Notes:* MVA/EVA=manual or electric vacuum aspiration. PAC=postabortion care. na=not applicable. Percentage distributions may not add to 100.0% because of rounding.

TABLE 5

Percentage of women presenting for postabortion care at public- and private-sector health facilities with symptoms of severe abortion complications, by survey year

Complication	2008 (N=3,092)	2014 (N=5,604)
Required hospitalization for >24 hours	23.1	19.1
Death	0.3	0.2
Evidence of mechanical injury/foreign body/uterine perforation	6.7	6.7
Organ/system failure	2.1	8.9***
Generalized peritonitis	0.2	1.0**
Tetanus	0.2	0.0*
Shock	4.1	7.5**
Sepsis	16.1	7.8***
Temperature >37.9° C	10.4	11.8
Pulse rate >119 beats/min.	2.6	5.3***

* Significantly different from 2008 at p<.05.

** Significantly different from 2008 at p<.01.

*** Significantly different from 2008 at p<.001. *Notes:* Frequencies are unweighted counts of all individuals, and percentages are weighted to account for the complex sampling and study design.