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Assessing Readiness to Provide Comprehensive Abortion Care in the Democratic Republic of the Congo After Passage of the Maputo Protocol

CONTEXT: The Democratic Republic of the Congo (DRC) decriminalized abortion under certain circumstances in 2018 through the Maputo Protocol. However, little is known about the readiness of the country's health facilities to provide comprehensive abortion care.

METHODS: Data on 1,380 health facilities from the 2017–2018 DRC Service Provision Assessment (SPA) inventory survey were used to assess readiness to provide abortion care in four domains: termination of pregnancy, basic treatment of postabortion complications, comprehensive treatment of postabortion complications and postabortion contraceptive care. Analyses used a modified application of the emergency obstetric care signal function approach; criteria for readiness were based on World Health Organization guidelines.

RESULTS: Thirty-one percent of DRC facilities met the criteria for readiness to provide abortions. The proportion of facilities classified as ready was higher among urban facilities than rural ones (50% vs. 26%), and among hospitals than health centers or reference health centers (72% vs. 25% and 45%, respectively). Few facilities were ready to provide either basic or comprehensive treatment of postabortion complications (4% and 1%); readiness to provide these services was greatest among hospitals (14% and 11%). Only a third of facilities displayed readiness to provide postabortion contraceptive care. Inadequate supplies of medication (e.g., misoprostol, antibiotics, contraceptives) and equipment were the greatest barrier to readiness.

CONCLUSIONS: Most DRC facilities were not ready to provide comprehensive abortion care. Improving supplies of vital health commodities will improve readiness, and has the potential to reduce the prevalence of unplanned pregnancies and future demand for abortions.

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Abortion is a low-risk medical procedure in countries where it is legally performed by trained providers, as medical complications are rare.¹ However, in countries with restrictive abortion laws, pregnancy terminations are often unsafe—that is, they are carried out “by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both.”^{2(p.1)} Global studies have found that abortion rates are no lower in countries that restrict the procedure than in countries where it is legal.³ In Central Africa, an estimated 34% of unintended pregnancies end in abortion,³ and the abortion rate is 35 per 1,000 women—higher than the rates in Europe (29 per 1,000) and the United States and Canada (17 per 1,000), where abortion has long been legal.⁴ Worldwide, an estimated 25 million women have an unsafe abortion each year; 1.5% of abortion-related hospital admissions result in death and 9% result in near-miss events (i.e., the woman nearly died within 42 days of the abortion).⁵ In Sub-Saharan Africa, these proportions are often much higher: A Nigerian study estimated that 18% of women admitted to a hospital for abortion complications die,⁶ and a Ugandan study estimated that 57% of women admitted for abortion-related complications have

a near-miss event.⁷ Women who die from unsafe abortion prior to reaching a hospital are missing from these morbidity and mortality statistics.

Several related factors compound the adverse effects of unsafe abortion in developing countries, including inadequate access to effective modern contraceptives and systemic resource shortages that limit the quality and efficacy of reproductive health interventions. In Sub-Saharan Africa, unsafe abortion is widespread to the point that it is a significant driver of maternal mortality, accounting for 10% of maternal deaths in the region.⁸ According to the World Health Organization (WHO), nearly all injuries and deaths resulting from unsafe abortion could be “prevented through sexuality education, family planning, and the provision of safe, legal induced abortion and care for complications of abortion.”⁹

Recognizing the importance of a unified policy agenda that protects the health and well-being of African women, the Assembly of the African Union adopted the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa—also known as the Maputo Protocol—in 2003. Article 14(2)(c) of the Maputo Protocol directs countries that are party to this protocol to “protect

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the reproductive rights of women by authorizing medical abortion in the cases of sexual assault, rape, incest, and where the continued pregnancy endangers the mental and physical health of the mother or the life of the mother or the fetus.”¹⁰ The Maputo Protocol has paved the way for the relaxation of abortion restrictions in several African countries; overall, 13 countries have lifted their total abortion bans since 2000.¹¹

The Democratic Republic of the Congo (DRC) ratified the Maputo Protocol in 2008, but did not fully codify it until March 2018.¹² Before this codification, the DRC banned abortion under all circumstances, and prison sentences for violating the law ranged from five to 15 years for both women and providers. Because of this restrictive legal environment, abortion was often performed by untrained providers and carried a significant risk for women.^{13,14} Nonetheless, abortion was common: A study using clinical data on the treatment of postabortion complications estimated that the abortion rate in Kinshasa in 2016 was 56 per 1,000 women aged 15–49.¹⁵ Sexual violence in the conflict zones of Eastern DRC increased both the demand for pregnancy termination as well as the danger that women faced from these procedures.^{16,17} In 2017, the DRC had a maternal mortality ratio of 693 maternal deaths per 100,000 births, the 10th highest in the world.¹⁸ Given the connection between unsafe abortion and maternal mortality, reducing the incidence of unsafe abortion has the potential to significantly reduce the number of maternal deaths in the DRC.

In December 2018, the executive branch of the DRC posted Law No. 18/035, “Fixing Basic Principles Relating to the Organization of Public Health,” which acknowledges the DRC’s commitment to the Maputo Protocol but also restricts abortion to circumstances in which terminating pregnancy is necessary to save the life of the mother or the fetus has congenital malformations that are incompatible with life. Although it references the Maputo Protocol, Law No.18/035 does not match the protocol’s guidelines, as it does not explicitly allow abortion in cases of sexual assault, rape or incest, or to protect the physical or mental health of the mother. It is also inconsistent with WHO’s clinical guidelines for abortion, which are based entirely on medical and gestational criteria,⁹ and are not related to the woman’s reason for terminating her pregnancy.

Although the DRC legal code allows abortion under specific circumstances, the readiness of country’s health care system to provide such care is unknown.

The Signal Function Approach

Since 1998, WHO has assessed health system readiness to provide emergency obstetric care—defined as “key medical interventions that are used to treat the direct obstetric complications that cause the vast majority of maternal deaths around the globe”—by examining the system’s ability to perform signal functions (a set of variables that indicate a system’s ability to carry out a specified intervention).^{19,20} While signal functions do not encompass all indicators

of relevant care, and their presence is not a marker of service quality, they are designed to signal the readiness of a health system to meet critical population health needs.

Healy and colleagues were the first to use the signal function strategy in the context of comprehensive abortion care; their analysis was guided by the Safe Abortion Care Framework, which posited that provision of safe abortion encompasses three central elements: provision of safe abortion for all legal indications; treatment of abortion complications; and provision of postabortion contraceptives.²¹ Subsequently, Campbell et al. applied this framework to health facility data from Zambia and found that a Service Provision Assessment (SPA) survey—a health system monitoring tool used in low- and middle-income countries by the DHS Program—provided nearly all relevant data to assess signal functions related to provision of comprehensive abortion care.²² Signal functions were also used in a high-level comparative assessment of abortion care readiness conducted in 2018 for 10 countries (Bangladesh, Haiti, Kenya, Malawi, Namibia, Nepal, Rwanda, Senegal, Tanzania and Uganda).²³ In this article, we used the signal function approach and SPA data to assess the readiness of the DRC’s health care system to provide comprehensive abortion care.

METHODS

Data

The data used in this analysis are from the SPA inventory survey conducted in the DRC in 2017–2018.²⁴ The Demographic and Health Survey (DHS) program conducts SPA surveys in partnership with national ministries of health. In the DRC, the 2017–2018 SPA was funded by the United States Agency for International Development (USAID), the United States President’s Malaria Initiative and the Global Fund. The DHS/SPA program designed the survey instruments and provided them in French to the DRC Ministry of Health, whose directorates adapted the survey to the local context.

The Ministry of Health sent a letter to all provincial medical officers informing them of the study and requesting support in facilitating access to health facilities. Data were collected by 280 interviewers who completed three weeks of training and passed an exam; all interviewers were required to have an advanced nursing or medical degree, at least five years of experience as a practitioner and experience in administering at least three other surveys.

Data collection took place in October–November 2017 in Kinshasa, and in January–April 2018 in provincial locations. The Ministry of Health provided a sampling frame consisting of 12,050 health facilities, of which 1,412 (approximately 50 from each of the DRC’s 26 provinces, depending on provincial population weights) were selected through probability sampling. At each selected facility, an interview was conducted in French with a health provider or manager; responses were translated into English for analysis and reporting. Because of armed conflicts during data collection, interviewers were unable to

visit 32 facilities, yielding a total sample of 1,380 (response rate, 98%). Conflict in the DRC has been centered primarily in North and South Kivu, as well as in the Kasai region; however, the final sample included facilities from every province.

The survey was conducted at all tertiary, provincial and general reference hospitals (grouped for this analysis as “hospitals”) in the DRC, as well as at a representative sample of health centers. In analyses, the latter were categorized as either health centers (small local facilities that are primarily staffed by nurses who provide a minimum health package) or reference health centers (specially equipped health centers that serve health zones that do not have a hospital). Health facilities are managed by the DRC government, not-for-profit nongovernmental organizations (NGOs), private for-profit corporations or faith-based organizations.

In addition to asking health provider representatives about the services provided at their facility, interviewers asked—and if possible, observed—whether certain commodities and equipment were available at the facility. For medications, such as misoprostol, the SPA provides the following categories for interviewers to record availability: “observed, at least one valid”; “observed available, none valid”; “reported available, not seen”; “not available today”; and “never available.” Medications were considered to be available or in stock if the interviewer reported that they were “observed, at least one valid” at the time of data collection.

For other commodities and equipment, such as a vacuum aspirator, the SPA provides the following response options: “observed”; “reported, not seen”; and “not available.” If relevant, interviewers also record whether the item is functioning; response options are “yes”; “no”; and “don’t know.” For equipment, we constructed a binary variable indicating whether the item was both observed and functioning.

For signal function variables related to service provision, such as blood transfusion in an obstetric context, interviewers asked the respondent if the service had been provided in the last three months. Finally, as an indicator of family planning availability, we created a dummy variable denoting whether the respondent reported to the interviewer that the facility provides family planning seven days a week.

Measures

Our choice of indicators for this study was based on WHO’s technical guidance regarding supplies and human resources for health systems providing abortion care.^{9,25,26} We examined four dimensions of comprehensive abortion care—termination of pregnancy, basic treatment of postabortion complications, comprehensive treatment of postabortion complications and provision of postabortion contraceptive care—which we selected for their applicability to health system planning and resource allocation. These dimensions were measured through signal function indicators. To evaluate readiness to provide termination of pregnancy and treatment of postabortion complications, we constructed binary dummy variables indicating

whether all related signal functions were present for each category; the specific criteria for determining readiness on each dimension of care are described below.

• *Termination of pregnancy.* For termination of pregnancies of up to 12–14 weeks’ gestation, WHO recommends medication abortion, which may be performed using a combination of mifepristone and misoprostol, or multiple doses of misoprostol alone if mifepristone is not available.⁹ Surgical abortion using manual vacuum aspiration is also an option for abortions before 13 weeks. For terminations occurring after 12–14 weeks’ gestation, WHO recommends surgical abortion using dilation and evacuation (D&E); dilation and sharp curettage (D&C) is no longer recommended because of safety concerns. WHO guidelines list the following providers as qualified to assess gestational age and perform medication abortion and manual vacuum aspiration in the first trimester: physicians (specialist and nonspecialist), advanced associate clinicians (nurse practitioners and physician assistants), midwives (degree) and nurses (degree).²⁵ For medication abortions and D&Es after 12 weeks, WHO states that physicians (specialist and nonspecialist) are qualified to provide care.²⁵

In accordance with these guidelines, we categorized a facility as ready to provide termination of pregnancy services if it had at least one doctor, degree nurse or degree midwife and the capacity to provide medication abortion (i.e., it had misoprostol in stock) or surgical abortion (i.e., it had a functioning vacuum aspirator and staff had removed retained products of contraception within the last three months). The SPA does not collect information on whether facilities have mifepristone in stock or have advanced associate clinicians on their staff.

• *Treatment of postabortion complications.* The need to provide treatment for postabortion complications in settings where abortions are frequently performed in secret stems from the danger inherent in many clandestine procedures. Unsafe abortions may be performed by insertion of “an object or substance...into the uterus; [provision of D&C]...by an unskilled provider; ingestion of harmful substances; and application of external force.”^{9(p.19)} Women with acute or septic infection resulting from these types of procedures will need intravenous antibiotics. For women presenting with incomplete abortion, medical providers may need to remove retained products of conception by administering parenteral uterotonics (such as oxytocin or misoprostol) or through surgery. Additionally, blood transfusions and the administration of intravenous fluids are frequently needed in the management of postabortion complications. Finally, facilities that treat complications resulting from unsafe abortion should have trained staff who can provide these services and are on duty or on call 24 hours a day, seven days a week. WHO guidelines state that physicians, degree nurses and degree midwives can all treat non-life-threatening postabortion complications

*That is, registered nurses and certified nurse midwives.

(such care is hereafter referred to as “basic treatment of abortion complications”), but recommend that physicians treat more serious complications (hereafter referred to as “comprehensive treatment of abortion complications”).

Thus, to be considered ready to provide basic treatment of postabortion complications, facilities had to have a degree nurse, degree midwife or obstetric staff present or on call at all times. The facilities also had to have supplies to administer intravenous fluids, parenteral antibiotics and at least one uterotonic (parenteral uterotonics or misoprostol); a vacuum aspirator; and a functional telephone (landline or mobile) for referrals. Finally, in the last three months, they must have administered parenteral antibiotics and removed retained products of conception. Facilities were categorized as having demonstrated readiness to provide comprehensive treatment for postabortion complications if they met all of the above criteria, plus had at least one doctor on staff, and had performed in the previous three months at least one cesarean section (which serves as a proxy variable in SPA to indicate experience with obstetric surgery) and at least one blood transfusion in an obstetric context.

• *Postabortion contraceptive care.* To prevent future unintended pregnancies and abortions, WHO recommends the immediate and voluntary provision of a hormonal contraceptive or IUD directly after a complete surgical abortion, after the first pill is taken in a medication abortion or after the treatment of abortion complications.²⁶ Consistent with these guidelines, we considered a facility to have the capacity to provide postabortion contraceptive care if it stocked at least two of the aforementioned contraceptive methods (to guarantee method choice) and if family planning services were available seven days per week (indicating that the facility can provide this intervention immediately). Thus, we created a dummy variable indicating whether a facility had at least two WHO-recommended methods (oral contraceptives, IUD, implant, injectable) in stock and were able to provide family planning services in each of the past 28 days.

Analysis

Pearson’s chi-square tests were conducted to identify differences by facility characteristics (type, ownership, location and region) in facilities’ readiness to provide services in each of the following dimensions of abortion care: termination of pregnancy, basic treatment of postabortion complications, comprehensive treatment of postabortion complications and postabortion contraceptive care. We grouped the DRC’s 26 provinces into seven regions* that reflected the DRC’s pre-2015 provincial borders; these groupings facilitated significance testing of geographic differences in service readiness. Because the SPA survey oversamples hospitals, the bivariate statistics presented here

*The seven regions (and the provinces they comprise) are the Capital (Kinshasa), Central/Kasai (Kasai-Oriental, Sankuru, Lomami, Kasai, Kasai-Central), Eastern/Kivu (Sud Kivu, Nord Kivu, Maniema), Northeastern/Oriental (Tshopo, Bas-Uele, Haut-Uele, Ituri), Northwestern/Equateur (Equateur, Sud-Ubangi, Nord-Ubangi, Mongala, Tshuapa), Southeastern/Katanga (Haut-Katanga, Lualaba, Haut-Lomami, Tanganika) and Southwestern/Bandundu (Kongo Central, Mai-Ndombe, Kwilu, Kwango).

are weighted using the *svyset* and *pweight* commands in Stata to provide estimates reflecting the true composition of the country’s health facilities. Results of bivariate analyses and facility estimates are presented as percentages with 95% confidence intervals. All survey data were analyzed using Stata 13.

RESULTS

The vast majority (82%) of DRC health facilities were health centers, while 10% were hospitals and 8% were reference health centers (Table 1). Sixty-one percent of facilities were public and managed by the government; private for-profit facilities and faith-based facilities each accounted for 18%, and private nonprofit facilities accounted for 4%. Most health facilities were located in rural areas; only 22% were in urban areas. Finally, the Central/Kasai region (which includes Kasai-Oriental, Sankuru, Lomami, Kasai, and Kasai-Central provinces) was the region with the largest proportion of health facilities (18%), while the Capital/Kinshasa region (which consists only of Kinshasa Province) had the smallest (8%).

Overall, 31% of facilities were ready to provide medication abortion, surgical abortion or both (Table 2). However, only 4% were ready to provide basic treatment of postabortion complications, and just 1% were ready to provide more advanced comprehensive treatment. One-third of DRC facilities were ready to provide postabortion contraceptive services that met WHO guidelines.

Nearly all facilities (98%) were staffed by at least one physician, degree nurse or degree midwife; thus, in terms of staffing, DRC facilities were prepared to provide most services related to comprehensive abortion care. However, just 31% of facilities had the appropriate staffing (at least

TABLE 1. Selected characteristics of health facilities, Service Provision Assessment survey, Democratic Republic of the Congo, 2017–2018

Characteristic	No.	%
Type		
Health center	540	81.9 (79.6–84.1)
Hospital	626	9.8 (8.5–11.3)
Reference health center	214	8.2 (6.7–10.1)
Ownership		
Public	832	61.1 (57.3–65.0)
Private for profit	162	18.3 (15.3–21.7)
Faith-based	346	18.1 (15.2–21.3)
Private nonprofit	40	3.5 (1.5–4.0)
Location		
Rural	1,076	77.8 (74.2–81.0)
Urban	304	22.2 (19.0–25.8)
Region		
Central/Kasai	239	18.0 (15.2–21.2)
Southwestern/Bandundu	243	17.2 (14.5–20.2)
Eastern/Kivu	212	16.6 (13.6–20.1)
Southeastern/Katanga	196	16.2 (13.6–19.3)
Northeastern/Oriental	212	13.0 (10.8–15.6)
Northwestern/Equateur	205	11.3 (9.4–13.5)
Capital/Kinshasa	73	7.7 (5.6–10.5)
Total	1,380	100.0

Notes: Percentages are weighted to provide nationally representative estimates, and may not total 100.0 because of rounding. Figures in parentheses are 95% confidence intervals.

TABLE 2. Number and weighted percentage of health facilities with selected signal function indicators

Dimension/signal function	No.	%
TERMINATION OF PREGNANCY		
Readiness to provide termination of pregnancy	650	31.0 (27.6–34.6)
Has ≥1 doctor, degree nurse or degree midwife	1,368	98.3 (96.9–99.0)
Performed removal of retained products of conception in last 3 mos.	836	53.3 (49.4–57.2)
Has functioning vacuum aspirator	750	36.8 (33.2–40.6)
Has misoprostol in stock	310	13.4 (11.1–16.1)
BASIC TREATMENT OF POSTABORTION COMPLICATIONS		
Readiness to provide basic treatment of postabortion complications	105	3.7 (2.5–5.3)
Has ≥1 doctor, degree nurse or degree midwife	1,368	98.3 (96.9–99.0)
Has obstetric staff present or on call at all times	1,317	92.5 (90.0–94.4)
Provided parenteral antibiotics in last 3 mos.	1,087	68.5 (64.7–72.1)
Has injectable antibiotics in stock	549	35.7 (32.0–39.5)
Provided parenteral uterotonics in last 3 mos.	1,305	90.4 (87.5–92.6)
Has injectable uterotonics in stock	1,110	75.8 (72.3–79.1)
Has misoprostol in stock	310	13.4 (11.1–16.1)
Performed removal of retained products of conception in last 3 mos.	836	53.3 (49.4–57.2)
Has functioning vacuum aspirator	750	36.8 (33.2–40.6)
Has intravenous fluid in stock	710	48.6 (44.7–52.5)
Has functional facility telephone (landline or mobile)	736	52.0 (48.2–55.9)
COMPREHENSIVE TREATMENT OF POSTABORTION COMPLICATIONS		
Readiness to provide comprehensive treatment of postabortion complications†	82	1.4 (1.0–2.2)
Performed blood transfusion in obstetric context in last 3 mos.	687	20.4 (17.7–23.3)
Performed cesarean section in last 3 mos.	805	23.5 (20.7–26.5)
Has ≥1 doctor	863	30.9 (27.5–34.4)
POSTABORTION CONTRACEPTIVE SERVICES		
Readiness to provide postabortion contraceptive services	556	34.2 (30.6–38.0)
Has combined oral contraceptive pills in stock	546	32.2 (28.7–35.9)
Has progestin-only contraceptive pills in stock	394	22.8 (19.7–26.1)
Has any contraceptive pills in stock	614	36.0 (32.4–39.8)
Has combined injectable contraceptives in stock	409	24.7 (21.5–28.2)
Has progestin-only injectables in stock	474	27.9 (24.5–31.5)
Has any injectable in stock	632	39.9 (36.1–43.8)
Has IUD in stock	441	19.0 (16.2–22.2)
Has implant in stock	669	35.9 (32.3–39.7)
Has ≥2 of the following in stock: pill, injectable, IUD, implant	704	40.6 (36.8–44.4)
Family planning services available seven days a week	843	57.2 (53.3–61.0)

† Includes all items listed for basic treatment. Notes: N=1,380. Percentages are weighted to provide nationally representative estimates. Figures in parentheses are 95% confidence intervals.

one physician) to provide comprehensive treatment of postabortion complications.

The factors limiting facility readiness to treat postabortion complications were largely related to general health system readiness, as most of the signal functions measured in these two dimensions were related to general acute and primary care (e.g., stocking of general medical supplies). Just 36% of facilities had injectable antibiotics, 49% had kits for intravenous fluids and 52% had a functional landline or mobile telephone that could be used to refer women with complex postabortion complications to other facilities. In contrast, 90% of facilities had administered parenteral uterotonics in the three months prior to the survey, indicating that staff at most facilities had some experience inducing contractions, or managing incomplete spontaneous miscarriage or induced abortion.

Like readiness to provide comprehensive abortion care, readiness to provide postabortion contraceptive care appeared to be limited by commodity shortages. Nearly all facilities were appropriately staffed to provide contraceptives, and more than half (57%) reported providing family planning services seven days a week. However, just 41% had at least two WHO-recommended methods available to women; the availability of oral and injectable

contraceptives ranged from 23% to 40%, while just 19% had IUDs in stock and 36% had implants in stock.

Facilities' readiness to provide comprehensive abortion care varied significantly by facility type, ownership, location and region (Table 3). Seventy-two percent of hospitals—but only 25% of health centers and 45% of reference health centers—were ready to provide termination of pregnancy services. The proportion of facilities ready to provide abortion services was highest in the nonprofit and private for-profit sectors (52% and 45%, respectively), and lowest among faith-based (39%) and public sector facilities (24%).

Readiness to provide pregnancy termination services also differed between urban and rural facilities. Just 26% of rural health facilities were ready to provide pregnancy terminations, compared with 50% of urban facilities. Readiness varied by region as well, a difference likely related to the rural–urban disparities. In the urban capital province of Kinshasa, 48% of health facilities were ready to perform pregnancy terminations. In contrast, in the Central/Kasai region—the population of which, though dispersed over five provinces, is similar in size to that of Kinshasa—only 20% of health facilities were prepared to provide pregnancy terminations.

TABLE 3. Estimated weighted percentages (and 95% confidence intervals) of facilities ready to provide comprehensive abortion care, by dimension of care, according to selected characteristics

Characteristic	Termination of pregnancy	Basic treatment of complications	Comprehensive treatment of complications	Postabortion contraceptive services
Facility type	***	***	***	*
Hospital	71.7 (65.6–77.2)	13.7 (8.7–20.9)	11.0 (6.8–17.2)	42.5 (36.1–49.1)
Reference health center	44.6 (34.5–55.1)	5.7 (3.3–9.5)	4.2 (2.3–7.6)	42.9 (33.1–53.2)
Health Center	24.7 (20.9–29.0)	2.3 (1.2–4.3)	0.0	32.3 (28.2–36.8)
Ownership	***	***	*	*
Private nonprofit	51.6 (28.6–73.9)	12.0 (3.2–35.2)	3.8 (1.4–9.7)	31.2 (13.3–57.3)
Private for-profit	45.0 (35.4–54.9)	8.3 (4.3–15.2)	2.8 (1.0–7.5)	23.3 (16.0–32.7)
Faith-based	39.4 (30.9–48.6)	4.2 (1.9–8.9)	2.2 (1.4–3.5)	33.8 (25.7–42.8)
Public	23.5 (19.8–27.7)	1.8 (1.0–3.3)	0.7 (0.4–1.1)	37.7 (33.1–42.5)
Location	***	*	*	
Rural	25.5 (22.0–29.3)	2.7 (1.7–4.3)	1.0 (0.7–1.4)	34.1 (30.1–38.3)
Urban	50.2 (41.5–59.0)	7.1 (3.9–12.6)	3.0 (1.3–6.5)	34.6 (26.8–43.4)
Region	***	**		***
Capital/Kinshasa	48.4 (32.8–64.4)	4.7 (1.2–17.3)	3.8 (0.7–17.9)	31.5 (18.5–48.2)
Central/Kasai	19.9 (14.0–27.6)	0.9 (0.5–1.7)	0.8 (0.4–1.6)	35.6 (27.3–44.8)
Eastern/Kivu	39.4 (29.7–50.0)	5.0 (2.4–10.2)	2.4 (1.4–4.2)	55.4 (44.4–65.9)
Northeastern/Orientale	18.6 (13.2–25.7)	0.5 (0.3–1.1)	0.5 (0.2–1.0)	20.6 (13.8–29.7)
Northwestern/Equateur	16.1 (10.7–23.3)	0.5 (0.2–1.1)	0.5 (0.2–1.1)	27.1 (19.9–35.7)
Southeastern/Katanga	42.3 (33.1–52.0)	7.8 (4.0–14.8)	1.9 (1.0–3.3)	34.8 (26.3–44.4)
Southwestern/Bandundu	35.1 (27.1–44.1)	5.2 (2.4–11.2)	1.0 (0.5–2.1)	27.8 (20.7–36.3)

*p<.05. **p<.01. ***p<.001. Note: All percentages are weighted to provide nationally representative estimates.

Although health facilities in the DRC generally are not ready to provide abortion, they are accustomed—out of necessity—to treating complications arising from unsafe abortion procedures, as evidenced by previously published clinical chart reviews.^{13,14,27} However, the current assessment reveals significant gaps in readiness to treat abortion complications. Only 14% of hospitals could provide basic treatment of postabortion complications, and just 11% could provide comprehensive treatment. Preparedness was even lower among reference health centers (4–6%) and local health centers (0–2%). While comprehensive treatment of postabortion complications is not a normal service for health centers, these smaller facilities should be prepared to provide basic treatment and be able to refer complex cases to an appropriate facility. Differences by ownership are also evident. Public entities operated 61% of facilities in the DRC, but these were the least likely to be prepared to treat postabortion complications; for example, only 2% of public facilities were ready to provide basic care, and 1% were ready to provide comprehensive care. Readiness was highest among private nonprofit facilities, although it was still very low, both for basic (12%) and comprehensive (4%) treatment.

Finally, we identified a number of disparities in facility readiness to provide postabortion contraceptive care. Forty-three percent of hospitals and reference health centers were ready to provide postabortion contraceptives, compared with only 32% of health centers. By ownership, the level of readiness ranged from 23% among private for-profit facilities to 38% among public facilities. The Eastern/Kivu region of the DRC had the greatest proportion of facilities ready to provide postabortion contraceptives (55%); in Kinshasa, less than a third (32%) were ready.

DISCUSSION

An estimated 13% of pregnancies in Central Africa end in abortion, thus affecting a large number of women.⁴ In 2016 alone, nearly 40,000 women in Kinshasa sought treatment at health facilities for complications arising from unsafe abortions performed by untrained providers;¹⁵ this figure underestimates the true number of women who experience abortion complications, as many likely do not seek care or die before obtaining it. Unsafe abortion is a significant driver of Africa’s high maternal mortality rate, and legal restrictions on the procedure have hindered progress in addressing the issue.^{4,5} Reducing the level of unsafe abortion is one way that health systems can improve maternal health and reduce maternal morbidity.

By adopting the Maputo Protocol, the DRC took an initial step toward enabling safe, facility-based comprehensive abortion care. As noted earlier, however, DRC abortion policy remains unsettled; if the government expands the circumstances in which a woman may get a legal abortion, it will need to inform providers and the public about these policies before women can realize the benefits from new reproductive rights. Even with clearer regulations, clinicians may object to providing abortion-related services or require additional training to provide them. Community stigma may also play a role in preventing women from obtaining comprehensive abortion care. Given these realities, increasing the provision of effective contraceptive care is likely the most politically palatable strategy that the DRC can pursue to reduce abortion-related morbidity and mortality. However, our analysis indicates that the DRC health system is not prepared to provide postabortion contraceptive care that meets WHO guidelines.²⁶ Additionally, Kinshasa has a large number of Catholic facilities (e.g., Bureaux Dioc

Diocésains des Œuvres Médicales) that do not distribute contraceptives, which may impede women's ability to obtain family planning services.

If the DRC clarifies its abortion laws to more explicitly allow facility-based pregnancy terminations, health facilities will need to be strategically stocked with relevant commodities, and staff will need to be trained in providing all dimensions of comprehensive abortion care. According to WHO abortion care guidelines, DRC health centers—as primary care providers—have an appropriate level of staffing to provide first-trimester medical and surgical abortions, as these facilities are led by nurses and, in some cases, doctors.²⁵ To increase preparedness, the health system could invest in ensuring that health centers have adequate supplies of misoprostol and vacuum aspirators, and that staff are trained in the proper use of these supplies. Assessing gestational age (and eligibility for abortion care) and performing medical and surgical abortion are within the scope of practice for nurses, midwives and physicians; however, if facilities do not have the supplies and capacity to perform these procedures, staff may not have sufficient experience and may need refresher training.

A significant barrier to advancing comprehensive abortion care in the DRC relates to health system financing. In 2017, USAID provided more than \$200 million to support the DRC health sector,²⁸ which accounted for 13% of the country's total health expenditure.²⁹ However, the Mexico City Policy prohibits NGOs from using any funds (including private money and funds from non-U.S. donors) to provide information on abortion while receiving U.S. global health assistance.³⁰ Also known as the “global gag rule,” this policy is enacted and repealed depending on the political party in power in the United States, so its impact on the provision of comprehensive abortion care is inconsistent. (The expenditure of U.S. funds to provide abortion services is always prohibited, regardless of the administration in power or the status of the gag rule). If the DRC transitions away from the status quo—where women seeking abortion are limited to unsafe procedures performed by untrained providers—to a system of safe, facility-based abortion care provided by trained clinicians, the Mexico City Policy could put U.S. government funding for vaccination, sanitation, infectious disease control and other health services at risk during administrations that enact the policy.

Limitations

While our analysis has practical applications for health system planning and investment, it also has several limitations. First, the SPA inventory survey measures only availability of physical commodities and general staffing capacity. Because client exit interviews and observations were not available for comprehensive abortion care, this study could not evaluate quality of service delivery. Second, certain data elements were not available in the SPA that are important to measuring readiness to provide comprehensive

abortion services, such as staff training in abortion care. As a proxy for staff readiness, WHO guidelines outline the types of health workers that, based on global scope of practice standards, should be able to provide specific abortion care services. Research is needed to understand the extent to which health providers have been trained in and have experience providing abortion care. Also, staff readiness does not address the issue of clinician's willingness to provide comprehensive abortion care; future research must take into account the issue of conscientious objection in assessing accessibility of abortion care.^{31,32}

Additional limitations relate to the DRC essential medicines list and data availability. Because mifepristone is not on the essential medicines list, the SPA does not ask facilities if they have mifepristone in stock; as a result, our analysis assessed readiness to provide medication abortions that used misoprostol, but not those using the combined mifepristone and misoprostol protocol. Moreover, although misoprostol was added to the DRC essential medicines list in 2012,³³ pregnancy termination is an off-label use of this medication for which providers may not have been trained. Medication abortions are less invasive and time-consuming for staff than surgical procedures, and it is important to have an accurate metric of facility readiness to perform these procedures. In future studies, managers and researchers should push to ensure that mifepristone is included in facility assessments. More research is needed to understand the accessibility of mifepristone, staff training in proper use of misoprostol and mifepristone, and how increasing access to these medications may reduce abortion morbidity and mortality in the DRC.

This study did not assess service accessibility. While services may be available at facilities, if women cannot afford the services, cannot get to the facilities, do not know that services are available or otherwise do not benefit from the availability of care, then services ultimately are not accessible to the target population. Future studies could assess these accessibility factors. We also note that the survey's grouping of “faith-based” facilities may not include all facilities that are connected to faith-based organizations. Some NGOs that run or contribute to facilities that are categorized as “private nonprofit” in this study may have faith-based missions, but the survey does not contain an indicator within the nonprofit category for faith-based NGO support.

Finally, this study was limited by political instability and violence in the DRC. Thirty-two health facilities selected for the survey were not visited because of safety concerns for surveyors, thus biasing the sample toward facilities operating in more stable locations. Armed conflicts likely increase the demand for abortion services in places where sexual assault is used as a weapon of war, such as the DRC's Eastern/Kivu region. Readiness to provide pregnancy termination and postabortion care was greater in this region than in many others, a difference that may be due to higher

demand for services or underrepresentation of facilities in these conflict-ridden areas. Because conflict also can impact commodity supply chains and the availability of trained health facility staff, the results reported here may overestimate of the readiness of the DRC health system to provide comprehensive abortion care nationwide.

CONCLUSIONS

As a significant driver of maternal mortality in a country with a high maternal death rate, unsafe abortion is one pressure point where policymakers in the DRC could make a marked improvement in reproductive health care. Eliminating unsafe abortion has the potential to prevent injury and premature death, and improve women's quality of life. Comprehensive abortion care is an interdependent system in which progress in one dimension affects the others; by expanding access to safe and effective contraceptives—especially for women receiving treatment for postabortion complications—the DRC can reduce the number of unplanned pregnancies and the prevalence of abortion. Likewise, providing safe abortion will reduce the number of women who need to be treated for complications of unsafe procedures and, in turn, reduce abortion-related morbidity and mortality. Unfortunately, despite the ratification of the Maputo Protocol, pregnancy termination in the DRC does not yet have clear legal protections. The Population Reference Bureau and Ipas are working to clarify the country's abortion law and educate providers about the law to ensure the implementation of Maputo in the DRC.^{12,34} Interventions aimed at immediately reducing abortion-related morbidity and mortality should focus on supporting efforts to clarify the law, disseminate information and improve access to safe abortion services for all legal indications.

To maximize systems-based interventions, research should be conducted to better understand how Congolese women view abortion care along the broad continuum of reproductive health care and the role of contraception in preventing abortion. As noted above, the illegality of abortion in the DRC has not affected its prevalence; the procedure is widespread despite the significant legal, medical and social risks that women face. Where laws have failed to prevent unsafe abortion, research may provide insights for public health campaigns that pair contraceptive provision with education programs emphasizing that preventing unplanned pregnancy through effective family planning is much safer than terminating pregnancies through unsafe procedures. This facility assessment provides the DRC health system with specific, targeted information regarding potential investments in facility resources (the supply environment) to reduce abortion-related morbidity and mortality. This framework can be easily applied to other countries that utilize the SPA to conduct their own comprehensive abortion care readiness assessments, and to track progress toward universal protection of sexual and reproductive health and rights. Additional research with abortion seekers would help complete the puzzle

and allow women to experience the reproductive health benefits promised by the adoption of the Maputo Protocol.

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RESUMEN

Contexto: En 2018, la República Democrática del Congo (RDC) despenalizó el aborto bajo ciertas circunstancias a través del Protocolo de Maputo. Sin embargo, poco se sabe sobre la disposición de las instituciones de salud del país para proveer servicios integrales de aborto.

Métodos: Se utilizaron datos de 1,380 instituciones de salud a partir de la Encuesta Inventario sobre la Evaluación de la Prestación de Servicios (EPS) con el fin de evaluar la disposición para proveer servicios de aborto en cuatro dominios: terminación del embarazo, tratamiento básico de complicaciones postaborto, tratamiento integral de complicaciones postaborto y servicios anticonceptivos postaborto. Los análisis utilizaron una aplicación modificada del enfoque de función de señales de atención obstétrica de emergencia; los criterios para disposición se basaron en las pautas de la Organización Mundial de la Salud.

Resultados: Treinta y un por ciento de las instituciones de salud de la RDC cumplieron con los criterios de disposición para la provisión de servicios de aborto. La proporción de instituciones clasificadas como preparadas fue mayor en los centros urbanos que en los rurales (50% vs. 26%) y en hospitales respecto de centros de salud o centros de salud de referencia (72% vs. 25% y 45%, respectivamente). Pocas instituciones de salud estuvieron preparadas para proveer ya fueran servicios básicos o tratamiento integral para complicaciones postaborto (4% y 1%); la mayor preparación para proveer esos servicios se presentó en los hospitales (14% y 11%). Solamente un tercio de las instituciones de salud mostró estar preparado para proveer servicios anticonceptivos postaborto. La inadecuada disponibilidad de medicamentos (ej., misoprostol, antibióticos, anticonceptivos) y de equipo fueron las más grandes barreras para la preparación.

Conclusiones: La mayoría de las instituciones de salud de la RDC no estuvieron preparadas para proveer servicios integrales de aborto. Mejorar la disponibilidad de productos vitales para la salud aumentará la preparación y tiene el potencial de reducir la prevalencia de embarazos no planeados y la demanda futura de servicios de aborto.

RÉSUMÉ

Contexte: La République démocratique du Congo (RDC) a décriminalisé l'avortement dans certaines circonstances en 2018, du fait du Protocole de Maputo. La préparation des formations sanitaires du pays à assumer des soins d'avortement complets n'est cependant guère documentée.

Méthodes: Les données relatives à 1 380 formations sanitaires comprises dans l'enquête d'évaluation de la prestation des services de soins de santé (EPSS) ont servi à évaluer l'état de préparation à offrir et assurer des soins d'avortement sur quatre plans: l'interruption de grossesse, le traitement de base des complications après avortement, le traitement complet des complications après avortement et les soins de contraception après avortement. Les analyses reposent sur une application

modifiée de l'approche des fonctions fondamentales des soins obstétricaux d'urgence; les critères de préparation, sur les directives de l'Organisation mondiale de la Santé.

Résultats: Trente-et-un pour cent des formations sanitaires de RDC répondaient aux critères de préparation à la prestation de l'avortement. La proportion qualifiée de prête était plus grande parmi les formations urbaines que rurales (50% contre 26%) et parmi les hôpitaux que dans les centres de santé ou de référence (72% contre 25% et 45%, respectivement). Peu de formations étaient prêtes à traiter, selon une approche de base ou complète, les complications après avortement (4% et 1%). Cette préparation était supérieure dans les hôpitaux (14% et 11%). Un tiers seulement des formations sanitaires étaient prêtes à offrir des soins contraceptifs après avortement. La disponibilité inadéquate de médicaments (par ex., misoprostol, antibiotiques, contraceptifs) et d'équipements était le plus grand obstacle à la préparation.

Conclusions: La plupart des formations sanitaires en RDC n'étaient pas prêtes à assumer les soins complets de l'avortement. L'amélioration de l'approvisionnement en produits de santé vitaux renforcera l'état de préparation tout en offrant le potentiel de réduire la prévalence des grossesses non planifiées et la demande future d'avortements.

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