Abortion Incidence in Rwanda

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150 word abstract: Abortion is highly restricted by law in Rwanda. With unmet demand for contraception among married women standing at 38 percent (RDHS 2005), the role that induced abortion plays in reducing unwanted childbearing and its impact on women's health has been unknown until now. In collaboration with the Ministry of Health, we conducted a study to measure abortion incidence in Rwanda in 2009 based on surveys of a national sample of public and private health facilities (n=166) , and a purposive sample of health professionals knowledgeable about abortion (n=56). In addition to estimating abortion incidence, we also document the number of women treated for postabortion complications and the proportion who received treatment among all women having abortions. These data will serve as a baseline measure of abortion incidence and will provide information that is essential for improving policies and programs regarding unsafe abortion, unintended pregnancy and unmet need for contraception.

Background

Abortion is illegal or clandestine for three in 10 women obtaining abortion worldwide, resulting in abortion-related deaths which take the lives of women and impact their families. Abortion-related morbidity, which is much more prevalent than deaths resulting from abortion, also impacts women's health and the well-being of their families. The International Conference on Population and Development (ICPD) in Cairo in 1994 encouraged governments to address unsafe abortion as an urgent public health problem. Likewise, in 2003 the World Health Organization included the prevention of unsafe abortion as one of the strategies to reduce maternal morbidity and mortality. Secretary of State Clinton's January 08, 2010 speech on the 15th anniversary of the Cairo conference also specifically named unsafe abortion as one of the urgent public health issues that must be addressed if we are to meet the goals of the Cairo conference as well as the fifth Millennium Development Goal.

In the 15 years since the 1994 Rwandan genocide, Rwanda has made impressive progress in improving access to health services, including reproductive health services. However, the laws around abortion remain restrictive, with the procedure only permitted when a woman's life or physical or mental health is in danger. Moreover, a woman seeking a legal abortion has to go through the daunting process of getting the consent of three doctors for the procedure. In a country where there are approximately two doctors for every 100,000 people, this restriction means that legal abortion under any of the sanctioned circumstances is a rarity. Instead, many Rwandan women risk their health and lives to terminate a pregnancy they do not want, either by trying to induce an abortion on their own or seeking help from an untrained or inadequately trained provider in unsanitary conditions.

In addition to the restrictive abortion law, abortion is highly stigmatized in Rwanda, and most Rwandese believe that it is illegal under all circumstances. The shortage of reliable and up-to-date abortion data in

the country has made it far too easy for stakeholders in the country to ignore the problem of unsafe abortion.

The total fertility rate is 5.5 children, and 36% of married women use a contraceptive method.[i] The 2005 Rwanda DHS found 38% of married women had an unmet need for family planning.[ii] The mean ideal number of children is 3.3 for all women, more than two children less than the total fertility rate.[iii] Local observers and experts on the topic believe that unsafe abortion is, therefore, prevalent, and that it is also a major contributor to the country's very high rate of maternal mortality (1300/100,000 births).[1] While the actual level of abortion mortality and morbidity in Rwanda is unknown, the only published numbers that exist, based on data from four districts in 2004, estimate that 50 percent of Rwanda's maternal mortality is due to unsafe abortion.[iv] However, this proportion includes threatened abortions, which may explain why the estimated contribution of abortion to maternal mortality is so high. Yet there is no doubt that abortion in Rwanda remains dangerous for the majority of women seeking to terminate a pregnancy. Misoprostol is not yet available to the great majority of women in Rwanda.

Methods

Research on the incidence of abortion in Rwanda must rely on indirect methodologies as the practice is highly restricted and almost all abortions taking place are being done illegally. To estimate the incidence of induced abortion in Rwanda and to document abortion-related morbidity, we carried out surveys with health facility representatives as well as knowledgeable health professionals to be able to:

- Estimate the number and rate of induced abortion at both the national and provincial levels;
- Estimate the number and rate of women treated for abortion complications in health facilities;
- Include all health sectors in the survey of health facilities, public (government and faith-based) and private; and
- Document key aspects of abortion service provision – providers, probabilities of having a complication from each type of provider, and probabilities of obtaining postabortion care when a complication is experienced.

The project used a methodology developed by the Guttmacher Institute for estimating the overall incidence of abortion in countries where abortion is highly restricted. This methodology has been applied quite widely: In the past five years studies using this approach have been conducted in the Philippines, Pakistan, Uganda, Mexico, Guatemala, Ethiopia, Colombia and Burkina Faso, and before that in an additional eight countries.[v] [vi] [vii] [viii]

a) Study Design

The study conducted two surveys: a survey of health facilities that provides the number of women treated in hospitals for abortion complications, and a survey of health professionals to estimate the likelihood of women experiencing abortion complications. The data from these two sources, combined

[1] The MMR of 1,300/100,000 births is WHO's adjusted rate; a DHS survey-based rate is available and much lower at 750/100,000 births.

with information from other sources including secondary analysis of Demographic and Health Survey data as well as national and regional estimates of women of reproductive age and the annual number of births, allows us to calculate the number of induced abortions occurring in the country as a whole and abortion rates (the number of abortions per 1,000 women of reproductive age per year) and ratios (the number of abortions per 100 live births). In addition, the study allows us to estimate the number of women treated in facilities for abortion complications, and the rate per 1,000 women of reproductive age treated in health facilities for abortion complications. These surveys were modeled after previous surveys developed by the Guttmacher Institute, but modified to be appropriate and relevant for the Rwandan context.

b) Sampling Strategy for the Health Facility Survey (HFS)

A listing of all public sector health facilities and a partial listing of private sector facilities, compiled by the Ministry of Health, was the basis for the HFS sample. This was supplemented by information from other sources on private sector facilities. A nationally representative sample of health facilities that are likely to provide post-abortion medical care was drawn from this universe, excluding any that were known not to provide abortion care. We anticipated that during the course of fieldwork, some new facilities might be identified, and some facilities that had been identified may have closed.

For purposes of efficiency and accuracy, a multi-stage, stratified sample was employed. The first stratum was province and the second was type of facility. We included 100% of public hospitals (district as well as referral hospitals) and 100% of private hospitals and clinics; within each region, we sampled 20% of public health centers, using a random start and selecting every fifth facility. This allowed us a minimum sample size for each of the five provinces to be able to generate province-level estimates. To project the results nationally, we applied sample weights that adjust for sample fractions as well as for nonresponse, within each major region. The National Institute of Statistics of Rwanda reviewed and approved the sample design. The total sample size was 166 facilities.

Selection of Key Informants for HFS

Key informants for the HFS study comprised one senior staff member in each selected health facility, generally the chief of the Obstetrics and Gynecology department of hospitals or the director of the facility in the case of public health centers or clinics. The senior staff member was an obstetrician/gynecologist in the case of hospitals, but in the case of smaller facilities, the key informant was often a medical doctor or a nurse in a position of authority.

c) Sampling Strategy for the Health Professionals Survey (HPS)

The HPS interviewed a purposive sample of knowledgeable professionals who are well-informed about abortion provision in Rwanda. These interviews sought information on the conditions under which women obtain abortions (methods, providers, costs), differentiating between rural and urban women and between poor and non-poor women for certain key questions. This survey obtains information that permits estimation of the proportion of women who are likely to receive care in a facility should they

have an abortion and experience abortion complications, a parameter which is essential for estimating the total number of abortions nationally and for each province. The issue of women who experience abortion complications but who do not obtain medical care is highly relevant for Rwanda, given that approximately 83% of the population resides in rural areas and has inadequate access to medical and hospital care.

Selection of Key Informants for Health Professionals Survey

We constructed the sample of approximately two-thirds medical doctors (obstetricians/gynecologists and general practitioners), midwives and nurses, and one-third researchers, advocates, program managers and policy makers. The health providers had experience working in public and private practice. Particular effort was be made to ensure that there was sufficient representation of experts with some work experience and knowledge of rural areas, with a special focus on getting representatives from each of the five provinces. Selection criteria of these professionals are based on exposure to and/or knowledge of safe and unsafe abortion and post-abortion care; therefore it is a purposive sample. The sample size was 56 health professionals across a wide range of professions and country provinces.

d) Interview team

Each interviewer had some medical training, either as a nurse or as a medical doctor. The interviewer team was competitively selected through an exam that was administered to all eligible candidates. A systematic random selection process was used to select the interviewers from all eligible candidates who scored high enough on the exam to qualify. Twenty-one individuals were invited to take part in the one week long interviewer training conducted in May by a team from the Guttmacher Institute and National University of Rwanda School of Public Health. At the end of the interviewer training, a team of 12 interviewers and four supervisors were selected for the study. This was the team responsible for conducting the HFS. The Rwandan project manager, along with a few other faculty of the School of Public Health who also participated in the interviewer training, carried out the HPS.

e) Informed consent

All potential respondents were read an informed consent form and were given an opportunity to decide whether to participate in the study. No remuneration was offered to respondents as they were being asked to participate in the study as professionals and furthermore, no information on personal experiences was gathered. All study materials were approved by the Guttmacher Institute's Institutional Review Board as well as the Rwanda National Ethics Committee.

f) Fieldwork duration and data management

Fieldwork took place from May until August, 2010. Data were entered at the School of Public Health (Kigali) using a double entry process followed by the correction of inconsistencies using the questionnaires as the basis. Cleaning of the data took place at the Guttmacher Institute in collaboration with the School of Public Health.

Results

In total 166 facilities were interviewed (out of 168 planned, yielding a response rate of 98.9%, Table 1). This is a representative sample of all facilities in Rwanda providing postabortion care. All 4 referral hospitals, 41 district hospitals and 36 private facilities agreed to respond to the study questionnaire, which is a complete census of each of these types of facilities. This survey is one of only a few surveys to include private clinics. A 20% sample of health centers (public and faith-based) were interviewed from all the provinces (n=85, from a total sample of 466) (Table 2). Excluded from the sampling frame were all facilities that were definitively not providing postabortion services: specialized private clinics (ophthalmology, dentistry, etc.), health posts, and dispensaries.

Health centers represent the majority of the sample. More than half of facilities are public, and a quarter of the sampled facilities are supported by faith-based organizations (mainly the Catholic Church). Private facilities represent 8% of the sampled facilities. Our sample compares favorably with the last Service Provision Assessment[ix] (a nationally representative census of all health facilities functioning in Rwanda), which reported a total of 431 facilities in 2007.

Almost all facilities confirmed providing post-abortion services either as inpatient care or as both inpatient and outpatient care (Table 3). There are a few health centers (9%) providing postabortion care only as an outpatient service. One third of private facilities interviewed reported that they do not treat abortion complications. Government and faith-based facilities provide the majority of postabortion care in Rwanda.

A substantial number of cases are received and treated at health centers and then referred to district hospitals. This is mainly due to the government policy of community-based insurance scheme, *Mutuelle,* which removes financial barriers to accessing health services. A woman who has an unsafe abortion and experiences complications will have to first go to the health center, which is then responsible for transferring her to the district hospital. Referral hospitals do not receive many cases in comparison with district hospitals. This is due to the small number of referral hospitals and the capacity of district hospitals to manage most of the common acute complications of postabortion care, namely bleeding and infection.

The preliminary estimate of the number of complications resulting from both spontaneous and induced abortion treated in all health facilities in Rwanda in 2009 is 25,728. The rate of abortion complications received at facility level is estimated at 10 per 1,000 women aged 15-49 years old (not shown). This rate compares quite well to previous estimated rates in the African continent. The rate obtained in Rwanda is half of that estimated in Uganda in 2003[x], and greater than the 3.5 per 1,000 health facility abortion complication rate of Ethiopia[xi].

Further analysis will provide the rate of abortion complication by province as well the level of incidence of abortion in Rwanda, as well as factors underlying untended pregnancies and abortion.

These preliminary results show that more than half of the cases of abortion complications were received and treated by health centers. As noted above, Rwanda has many health centers and they are in the front line of receiving cases from the community.

The public and faith-based facilities received most of the cases, while the private sector treated less than one tenth of the post-abortion complications in Rwanda in 2009. Further analysis will shed more light on

the role of the private clinics. There is no evidence of a disparity between government and faith-based facilities, as far as the provision of care for abortion complications is concerned.

Conclusion

Despite the fact that abortion is illegal in Rwanda, 10 per 1,000 women aged 15-49 were treated for complications of abortion in health facilities. This is a sign that the number of unsafe abortions in Rwanda is even higher when it includes women who do not experience complications and women who experience complications but do not access health services. The national incidence estimate will provide insight into the magnitude of this issue.

The results of the present study will have several policy and programmatic implications including:

- As the first study ever documenting abortion in the country, the result will highlight the gaps in abortion care provision.
- The study will also provide further evidence by calculating unintended pregnancies as a measure of unmet contraceptive method use.
- By documenting unsafe abortion in Rwanda, the study will provide facts to support the on-going debate about the provision of abortion-related services in Rwanda.

[i] Ministry of Health (MOH) [Rwanda], National Institute of Statistics of Rwanda (NISR), and ICF Macro. *Rwanda Interim Demographic and Health Survey 2007-08*. Calverton, Maryland, U.S.A.: MOH, NISR, and ICF Macro, 2009.

[ii] Institut National de la Statistique du Rwanda (INSR) and ORC Macro. 2006. *Rwanda Demographic and Health Survey 2005.* Calverton, Maryland, U.S.A.: INSR and ORC Macro.

[iii] Ministry of Health (MOH) [Rwanda], National Institute of Statistics of Rwanda (NISR), and ICF Macro. *Rwanda Interim Demographic and Health Survey 2007-08*. Calverton, Maryland, U.S.A.: MOH, NISR, and ICF Macro, 2009.

[iv] Pearson L. and Shoo R. *Availability and use of emergency obstetric services: Kenya, Rwanda, Southern Sudan, and Uganda.* International Journal of Gynecology and Obstetrics. Vol. 88: 208-215.

[v] Singh S and Wulf D, Estimated levels of induced abortion in six Latin American countries, *International Family Planning Perspectives,* 1994, 20(1):4–13.

[vi] Henshaw SK et al., The incidence of induced abortion in Nigeria, *International Family Planning Perspectives,* 1998, 24(4):156–164.

[vii] Singh S et al., The incidence of induced abortion in Uganda, *International Family Planning Perspectives,* 2005, 31(4):183–191.

[viii] Singh S et al., The estimated incidence of induced abortion in Ethiopia, *International Perspectives on Sexual and Reproductive Health, 2010*, 36(1):16 –25 .

[ix] Institut National de la Statistique (INS) [Rwanda], Ministère de la Santé (MINISANTÉ) [Rwanda] et Macro International Inc. 2008. Enquête sur la prestation des services de soins de Santé Rwanda 2007. Calverton, Maryland, U.S.A. : INS, MINISANTÉ, et Macro International Inc.

[x] Singh S et al., The incidence of induced abortion in Uganda, *International Family Planning Perspectives,* 2005, 31(4):183–191.

[xi] Singh S et al., The estimated incidence of induced abortion in Ethiopia, *International Perspectives on Sexual and Reproductive Health, 2010*, 36(1):16 –25

Table 1. Distribution of health facilities in Rwanda, of those sampled and of those interviewed by type of facility, according to ownership

Type of facility	Health facilities interviewed			Total
	Public	Public/Faith based support	Private	
Total	**91**	**39**	**36**	**166**
Referral hospital	3	1	0	4
District hospital	26	15	0	41
Health center	62	23	0	85
Private Hospital, polyclinic and clinics	0	0	36	36

Table 2. Total number of facilities (weighted), by type of facility and ownership, according to provinces

Type of facility and ownership	Total number of facilities (weighted[1])						%
	Kigali city	North	South	East	West	Total	
Total	**65**	**83**	**110**	**100**	**108**	**466**	**100**
Type							
Referral hospital	3	0	1	0	0	4	1
District hospital	4	6	10	9	12	41	9
Health center	24	77	99	91	94	385	83
Private Hospital, polyclinic and clinics	34	0	0	0	2	36	8
Ownership							
Public	26	61	72	87	60	307	66
Public/Faith based support	5	22	38	13	46	123	26
Private	34	0	0	0	2	36	8

[1]The weighting factor for the health centers was the inverse of the health center sampling ratio multiplied by the proportion of completed health center interviews (which = 1, as all health centers were reached and agreed to respond to the interview).

Table 3. Percentage of facilities that offer inpatient and outpatient postabortion care, and average annual number of postabortion patients treated in sampled facilities by type of facility and ownership

Type of facility and ownership	% that offer abortion care				Average number of cases per facility per year among those that offer such care*			Number of facilities sampled
	Inpatient only	Outpatient Only	Both	Neither	Total	Inpatient	Outpatient	
Total	**73**	**17**	**62**	**14**	**25,728**	**18,239**	**7,489**	**466**
Type								
Referral hospital	25	0	50	25	1,452	1,311	141	4
District hospital	66	0	34	0	8,215	7,364	851	41
Health center	53	9	38	0	14,390	9,038	5,352	385
Private Hospital, polyclinic and clinics	0	25	39	36	1,671	527	1,144	36
Ownership								
Public								
Referral hospital	33	0	67	0	1,452	1,311	141	4
District hospital	54	0	46	0	5,383	4,567	816	26
Health center	53	8	39	0	8,639	5,667	2,972	278
Public/Faith based support								
Referral hospital	0	0	0	100				
District hospital	87	0	13	0	2,832	2,796	36	15
Health center	52	13	35	0	5,751	3,371	2,380	107
Private								
Private Hospital, polyclinic and clinics	0	25	39	36	1,671	527	1,144	36

Percent of facilities offering postabortion care based on Q202.

Number of postabortion patients treated based on Q209.

Table 4. Estimated total number of women treated annually for postabortion complications*, by sector, type of facility and ownership (weighted results)

Type of facility and ownership	Total	Inpatient	Outpatient	N
Total	**25,728**	**18,239**	**7,489**	**466**
Sector				
Public & faith based	24,057	17,712	6,345	430
Private	1,671	527	1,144	36
Type				
Referral hospital	1,452	1,311	141	4
District hospital	8,215	7,364	851	41
Health center	14,390	9,038	5,352	385
Private Hospital, polyclinic and clinics	1,671	527	1,144	36
Ownership				
Public				
Referral hospital	1,452	1,311	141	4
District hospital	5,383	4,567	816	26
Health center	8,639	5,667	2,972	278
Public/Faith based support				
District hospital	2,832	2,796	36	15
Health center	5,751	3,371	2,380	107
Private				
Private Hospital, polyclinic and clinics	1,671	527	1,144	36

*Final estimate based on mean of past month and average month estimates of postabortion care patients.
Based on Q209 and Q210