The health system costs of post abortion care in Tanzania

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Background

On an international stage, reproductive rights, including sexual rights, were first formally acknowledged as basic human rights in 1994 at the International Conference on Population and Development (ICPD) in Cairo. The Cairo ICPD underscored the right to control one's fertility using family planning and other methods—a nod toward safe abortion services—where legally permissible. Yet, despite 25 years passing since the Cairo ICPD, women's access to safe abortion services in many world regions is still highly restricted. This problem is acute in Sub-Saharan Africa, where the majority of countries have restrictive abortion laws and most abortions are least safe, according to the recently updated WHO categorization of abortion safety.

Abortion is legally restricted in Tanzania: its penal code is generally interpreted to allow abortion to save a woman's life, and access to safe abortion services—even for legally authorized reasons—is extremely limited. Yet, abortion is not uncommon. A 2015 study showed that in 2013, 405,000 induced abortions occurred nationwide. The vast majority of these were unsafe. The same study showed that, also in 2013, 66,640 women were treated in health facilities for complications from induced abortion. In addition, nearly 100,000 women had complications requiring treatment in a health facility but did not receive this care.

Despite some women receiving postabortion care (PAC), complications from unsafe abortion are thought to be a significant contributor to maternal mortality in the country. The government is committed to improving access to PAC, as a means of reducing maternal mortality, but adequate planning for service expansion requires information on the costs of providing such care. To address this need, in this study, we aimed to estimate the health system costs of providing PAC to manage complications from unsafe abortion in Tanzania—both at current service provision levels and under a scenario where all need for PAC is met.

Data and methods

Design. Using a cross-sectional study design, we conducted a bottom-up costing from the health provider perspective at a sample of health facilities in Tanzania.

Sampling. In late 2017/early 2018, we obtained lists from local government officials of all public and private health facilities (including faith-based and NGO providers) offering PAC services in Tanzania's mainland and Zanzibar. We excluded facilities that offered PAC services to fewer than five women in the prior 10 months. The remaining facilities were then grouped based on ownership (public/private) and facility level (e.g. national/regional hospital, health center, dispensary, etc.).

There are eight geographical zones in Tanzania, which are further divided into 31 regions. We purposively selected two zones and their regions: Dar es Salaam (1 zone/region) and Zanzibar (1 zone/5 regions), and then randomly selected an additional six regions, one per remaining zone. Finally, we randomly selected facilities within the 12 selected regions using pre-established ownership/facility level targets to ensure representation in the final sample that matched the distribution of all facilities offering PAC.

Data collection/Costing. All data were collected by trained interviewers using tablet-based questionnaires between December 2018 and February 2019. The questionnaires were designed, piloted and implemented by the study team using Survey CTO. At each selected facility, the

interviewers used purposive methods to recruit facility administrators and clinical personnel who were knowledgeable regarding PAC service provision and the costs of the required resources.

The study questions were based on PAC costing studies previously conducted in other African countries and input from clinical and health economic experts in Tanzania. The questionnaires began with general questions about the facility and its staff, its PAC and family planning services, and fees charged (or not) for services. To establish the cost of PAC services, we then asked about resource requirements for the five most common PAC categories: uncomplicated incomplete abortion, sepsis, shock, lacerations and perforations. We included both direct costs and indirect costs. Direct costs included clinical personnel time, consumables, small equipment, medications and laboratory tests. We asked facility representatives about the specific items usually used to offer care, how much of each item was required, and the cost of each item. Questions were asked separately for each type of PAC complication. Indirect costs included capital (buildings and large equipment), utilities, and administrative/support personnel time. For these, we established the total annual cost and divided that by the number of patients seen to produce an average indirect cost per patient at each facility.

Analysis. Data were exported from Survey CTO into Stata (version 15.1) for cleaning and analysis, which is underway. We first present descriptive service-level statistics by facility level and ownership category. We also present a summary of the components included in PAC services at the facilities. Then, we expect to present average direct, indirect and total costs per PAC complication type by facility level and ownership. We will also produce a weighted average direct cost per woman receiving PAC at any public or private health facility.

Cost data were collected in Tanzanian Shillings or dollars and will be inflated to 2018 values, if needed, using currency-specific inflation rates. Non-dollar costs will then be exchanged to 2018 dollars using average annual inflation rates, to allow for presentation of the results in 2018 dollars. Capital costs will be annualized using a locally appropriate discount rate of 12.5% and years of useful life approved by accounting regulatory authorities in Tanzania.

We will extrapolate PAC costs estimated from the sample of facilities in this study to the national level in 2018. Published data (which were generated by the research team's institutions) indicate the number of women who received PAC services for complications of unsafe abortion across Tanzania, including Zanzibar, in 2013. We will adjust that number to represent 2018 services using national population growth figures, i.e. assuming a constant abortion rate over time. Then we will multiply the 2018 national service volume by the average cost per PAC patient in 2018 as estimated from the costing facility sample (taking into consideration variations in costs by facility level and complication type). Using the same approach, we will also estimate the national costs of providing PAC to women who needed, but did not receive care for abortion-related complications in 2018. Finally, we will conduct a multivariate sensitivity analysis to explore the impact of uncertainty in the analysis inputs on the cost outcomes.

Results and expected findings

Because analysis for this study is ongoing, we present results currently in hand and then summarize expected findings.

Available results. We included a total of 40 health facilities (7 hospitals and 33 lower level facilities) in the final sample (Table 1). These facilities represented 5.2% of the 757 nationwide facilities offering PAC at the time of sampling, according to the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children and their counterparts in Zanzibar. Nearly 90% of the selected facilities were publicly owned. Among the five private facilities, four were faith-based, and

one was owned by an NGO. Eighty-three percent of all facilities (80% (28/35) public, 100% (5/5) private) said that women pay for all or part of the services they receive at the facility (data not shown). Of those facilities requiring payment, 57.6% (19/33) expected women to pay for some or all of their PAC.

Table 1. Facilities selected for costing with level and ownership, by region (N=40)

	Dar es Salaam		Other regions*		Total	
	n	%	n	%	n	%
Facility level						
National Hospital	1	8.3	0	0.0	1	2.5
Regional Hospital	1	8.3	1	3.6	2	5
District/Cottage Hospital	1	8.3	3	10.7	4	10
Health Center/PHCU+**	3	25.0	13	46.4	16	40
Dispensary/PHCU**	6	50.0	11	39.3	17	42.5
Facility ownership						
Public	8	66.7	27	96.4	35	87.5
Private	4	33.3	1	3.6	5	12.5
All facilities	12	100	28	100	40	100

PHCU = Primary Health Care Unit, PHCU+ = PHCU offering additional services
*Regions = Kagera, Kigoma, Kilimanjaro, Ruvuma, Singida, Songwe, Zanzibar
**PHCU and PHCU+ are designations used in Zanzibar. Health center and dispensary are used on the mainland.

In total, 3,832 women received PAC services in the study facilities in 2018. Regional Hospitals had the highest annual PAC caseloads, averaging 553 cases per year per facility on average (Table 2). PAC cases represented roughly 5% of maternal and neonatal health patients across all facilities. Most women receiving PAC received care for incomplete abortion, though many women also required treatment for sepsis. Although not costed in this study, the respondents noted that other severe complications (e.g. renal failure, peritonitis, etc.) were very rare, occurring in less than 1 of 1,000 PAC cases.

Asked about the components of the care provided, the respondents noted that, in addition to clinical PAC, the services included community outreach/awareness raising regarding service availability (20%, 8/40), counseling prior to service delivery (95%, 38/40), offering referral letters in case of ongoing complications (75%, 30/40), and post-service family planning (92.5%, 37/40) (data not shown).

Table 2. Postabortion care service statistics by facility level and ownership (2018)

	Facility Level					Ownership		Total* (n=40)
	National Hospital (n=1)	Regional Hospital (n=2)	District/ Cottage Hospital (n=4)	Health Center/ PHCU+ (n=16)	Dispensary /PHCU (n=17)	Public* (n=35)	Private (n=5)	
Average annual number of PAC patients per facility in category	211.0	552.5	303.8	51.3	28.2	96.9	36.0	95.8
Percent of MNH patients that are PAC patients	1.1	2.9	6.4	5.8	4.3	5.0	3.5	5.0
Among PAC patients, average proportion with:**								
Incomplete abortion	25.2	100.0	68.5	74.8	31.6	57.0	34.0	55.8

Sepsis	7.6	51.0	4.9	2.5	1.2	4.6	0.5	4.8
Shock	4.9	25.0	6.4	0.6	0.4	2.4	0.5	2.4
Lacerations	4.9	8.0	0.0	0.3	0.0	0.7	0.0	0.6
Perforations	2.3	2.0	0.2	0.1	0.0	0.2	0.0	0.2
Among 1,000 women receiving PAC, average number who have rare complications***	0.0	7.0	0.0	0.6	0.0	0.7	0.0	0.6

MNH = Maternal and newborn health, PAC = postabortion care, PHCU = Primary Health Care Unit, PHCU+ = PHCU that offers additional services
* Public and total columns are weighted based on representation of facility category within pubic group or full sample.
**Total can exceed 100% because women can have more than one complication type.
***Renal failure, peritonitis, heart failure, psychosis, etc.

Expected findings: In addition to the service data presented above, the study team is working to prepare the following results (which will be available before the conference in November 2019):

- The average cost per patient by complication type and facility level and ownership category. This will include presenting direct, indirect, and total costs.
- The average and total amount of fees paid by women who received PAC in the sample facilities in 2018.
- The total cost for all PAC provided in the sample facilities in 2018 and the average (weighted) cost per PAC patient in 2018.
- The estimated national cost of all PAC provided nationwide in Tanzania in 2018.
- The added cost for providing PAC to women who needed but did not receive it in Tanzania in 2018.
- The results of a sensitivity analysis exploring the impact of uncertainty in the analysis inputs on the cost outcomes.

Discussion

Unsafe abortion is not uncommon in Tanzania and results in significant costs to the health system. Our study will show the estimated average cost per woman treated for complications from unsafe abortion as well as the national costs in 2018. Our study will also illustrate which elements of service provision are most costly.

Similar cost estimates have been conducted in other countries, including in Africa. In Rwanda in 2012, the cost of managing the complications of unsafe abortion in the health system was $1.7 million; satisfying all demand for care would have cost $2.5 million. In Uganda in 2010, the annual cost of providing PAC was $13.9 million, and meeting all need would have cost $20.8 million.

These costs are substantial, and importantly, they are largely avoidable. Scaling up provision of family planning could reduce the unintended pregnancies that often result in unsafe abortion. A study by the Guttmacher Institute in 2017, called Adding It Up, estimated that meeting the contraceptive needs of all women in developing regions would cost an average of $1.93 per person per year. (In our results, we will estimate the investment required for Tanzania specifically to allow for comparison vis-à-vis the PAC costs).

Tanzania, like many other low- and middle-income countries globally, has made progress since the Cairo ICPD in advancing women's access to sexual and reproductive health care services. But much work remains. In an environment of constrained resources, spending should be prioritized and efficient. While ensuring sufficient budget for meeting women's current needs for PAC services, locally policymakers should also consider the longer term costs savings that could come from policy shifts that reduce unsafe abortion, including increasing access to contraceptive services.