

THE HEALTH SERVICE COSTS OF OFFERING FEMALE CONDOMS IN SOUTH AFRICA'S NATIONAL FEMALE CONDOM PROGRAMME 2015/16

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BACKGROUND

The female condom (FC) was identified by the Reproductive Health Supplies Coalition in 2011 as one of several under-used reproductive health technologies having the potential to expand choice in reproductive health and family planning programs, add value to the method mix, and respond to the needs of diverse types of clients (1). The FC also is key to increasing HIV protection options for women and men, and is the only female-initiated HIV prevention barrier method. Although FC distribution rates lag far behind those of male condoms (1), there has recently been significant progress in FC technology. Since 2000, new FC products have become available, with the aims of reducing unit costs and improving acceptability (2).

South Africa, Brazil and India have the largest publicly funded FC distribution programs in the world (2), though many other countries also distribute FCs through nationally supported mechanisms. Unfortunately, however, there is limited data available on programmatic costs (2). In this sub-component of the national FC program evaluation conducted by the MatCH Research Unit we address the lack of information on costs for South Africa's National FC Programme. In this cost evaluation, we aimed to estimate the average incremental cost, from the health service perspective, of offering FCs per user and in total at the national level.

METHODS

MICRO-COSTING AT THE STUDY SITES

We used micro-costing to assess the average costs of offering FCs to new and current users. The costing was conducted between May-October 2015 at 8 facilities in KwaZulu-Natal: 4 primary health care centres, 2 community health centres, and 2 NGOs. All facilities were currently offering FCs as part of the national programme at the time of the cost evaluation.

A trained researcher visited the facilities and through discussions with facility staff determined the types and volumes of resources required for FC provision to either first time users or users with current or prior use experience. We included incremental resources only, including personnel, consumables, and equipment. Overhead costs, such as the

physical space, built-in fixtures (e.g. sinks, etc.), security guards, cleaners, etc. were excluded as these costs are incurred irrespective of the services provided. Training costs for staff providing the FCs were also excluded. Table 1 summarizes included inputs.

Table 1: Resources required for female condom distribution at the facility level

Resource	Details
<i>Personnel</i>	
Counselor	Provided counseling and education on use of the condom
Nursing staff	A staff nurse and/or professional nurse also contributed to counseling and performed record keeping and inventory/ordering activities.
Clerk	Pulled client files, recorded what happened during the visit, and returned the files.
<i>Consumables and equipment</i>	
Supplies	Female condoms
Furnishings	Table, chairs
Other equipment	Pens and pelvic model for female condom demonstration (new users only)

An Excel-based data collection tool for assessing inputs and costs was developed in advance of data collection. For each study facility, the tool contained a pre-set selection of required inputs, such as the types of staff and average number of minutes per activity related to FC provision. The tool was completed by the trained researcher during each site visit. Quality checks of the tool were subsequently conducted by a senior health economist.

After the service-related resource inputs were entered into the tool, we multiplied the required item per service volume (e.g. 10 minutes of counselling, 1 pelvic model, 1 desk, 2 chairs, etc.) by the unit costs of each resource. Salary and benefit information for public sector employees were obtained from publicly available sources (3). Costs for consumables and equipment were taken from purchasing records, publicly available tender information, and quotes from other suppliers as necessary. Where necessary, costs were inflated using the International Monetary Fund’s Consumer Price Index for South Africa (4). Capital costs, such as those for equipment, were annualized using depreciation periods recommended by the South African Revenue Service and a discount rate of 5% (5). The cost per use for equipment was then determined based on the annualized cost and reported or recorded service volumes at the study facilities for the period of January-December 2015. Costs are presented in 2015 South African Rands (R).

ANALYSIS

FC users may require differing levels of resources depending on whether they have previously used the method or require extra support or not. We estimated the average incremental cost of offering FCs per user type (first time or repeat user) for each site category (i.e. primary health care centre, community health centre, and NGO). We also estimated the mean cost per condom distributed using a weighted average representing the reported proportions of users by type at each site.

We then obtained national FC distribution data for 2015/16 from South Africa's District Health Information System (DHIS), and based on distribution patterns reported during the cost evaluation, we estimated the number of national FC users. We also estimated the total incremental costs for the national FC program in 2015/16 by multiplying the weighted average cost per user by the number of estimated users. These national costs represent distribution from facilities only; ordering, storage, and distribution of FCs to facilities were excluded from the calculations.

We created uncertainty ranges around the unit cost estimates by varying personnel time per activity, and the cost per consumable or equipment item. Each of these variables was varied by $\pm 25\%$.

Finally, we explored the sensitivity of the national cost estimates to parameter uncertainty (personnel time per activity, unit cost, number of condoms supplied to users, proportion of new users, and service volume) using univariate deterministic sensitivity analysis.

RESULTS

SERVICE PROVISION MODEL

The eight study facilities reported distributing a mean of 274 (Range 60-1,000) FCs per month (Table 2). FC2 and Cupid brands were distributed by most sites; however, some sites reported only having the FC2 option.

FCs were distributed at the study facilities using two different approaches: full education and refresher. The full education approach involved providing counselling on use of the method and a demonstration using a pelvic model, where available. This was generally performed by a counsellor or nurse in a private room at the facility. Thirty eight percent of the facilities did not have a pelvic model. The refresher approach involved a brief refresher counselling session only.

During the larger national female condom programme evaluation, a few facilities were observed offering FCs in a dispenser at the reception of the facility. Historically this was discouraged by the National Department of Health due to the expense associated with FCs. However, it seems an organic and unprompted change may be occurring in some locations. The eight study facilities where this cost evaluation took place did not distribute FCs freely in dispensers, so this approach was excluded from this cost evaluation.

The full education approach was reportedly used for new FC clients, i.e. women who had not previously used the method, and women who requested extra counselling or help with the method. The facilities reported providing a mean of 6 (Range 2-15) condoms to new/full education users after the counselling and demonstration session (Table 3). These women comprised a mean of 31% of all clients (Range 20%-60%). The refresher distribution method was preferred for women who had already had the counselling and demonstration session and who felt comfortable refilling the method without intensive instruction. The facilities reported recommending that prior/current users take a mean of 12 (Range 4-30) condoms (data not shown).

Table 2: Facility distribution and female condom user characteristics

Facility number	Facility type	Estimated proportion of all users that are new to FC	Mean monthly service volume (new and returning clients) in 2015	Condom brands distributed
3	CHC	30%	248	FC2, Cupid
6	CHC	20%	1,000	FC2, Cupid
1	NGO	60%	217	FC2, Cupid
5	NGO	30%	75	FC2, Cupid
2	PHC	20%	60	FC2
4	PHC	30%	134	FC2
7	PHC	20%	315	FC2, Cupid

8	PHC	40%	142	FC2
All sites (mean)	--	31%	274	--

COSTS PER USER AND PER CONDOM DISTRIBUTED

According to the National Department of Health's publicly available tender documentation, the purchasing price per FC2 was R6.24 and per Cupid was R6.27 for the period 2012-2014 (6). These purchasing prices were adjusted to 2015 prices as follows: R6.60 for FC2 and R6.64 for Cupid.¹

The weighted average incremental cost per female condom client by facility type is presented in Table 3. The average cost per condom distributed is also presented. Differences in costs per client across the sites reflect the different preferences in terms of the personnel who run the service (lay counsellors vs nurses), the number of FCs given to each client, and the proportion of clients that required full education (and thus received fewer condoms). Considering all sites, the total average incremental cost per client was R94.16, and the cost per FC distributed was R10.25.

Table 3. Service characteristics and average incremental cost per female condom client and per female condom distributed, by provider type (R 2015)

	PHC	CHC	NGO	All sites
<i>Service characteristics</i>				
Mean clients per month:	163	624	146	274
Mean % of clients that are "full education"	28%	25%	45%	31%
<i>Mean condoms distributed per...</i>				
Full education user (often new)	6	8	4	6
Refresher education user (often current or prior use)	14	15	8	12
<i>Costs</i>				
Personnel	26.44	32.18	15.53	25.14
Consumables	75.77	86.05	37.74	68.83
Equipment	0.21	0.06	0.27	0.19
Total average incremental cost per female condom client	102.41	118.29	53.54	94.16
Average cost per female condom distributed	11.31	8.93	9.45	10.25

PHC = Primary health care centre, CHC = Community health center, NGO = nongovernmental organization

¹ Subsequent to this analysis, the tender documentation for the 2015-2018 period became available. FCs are no longer differentiated by brand and the average weighted purchasing price per FC is listed as R6.63 (8).

NATIONAL COSTS 2015/16

According to South Africa's DHIS, in the financial year 2015/16, a total of 27,005,805 female condoms were distributed nationally. Based on the reports from the study facilities, we estimated that 18% of those condoms went to users requiring full education (and who were generally first time users). In total, we estimate that the national costs to the health service in 2015/16 for female condom distribution were R244 215 804, of which roughly 73% was the female condom commodities themselves (Table 4).²

Table 4. National distribution of female condoms and associated costs (R 2015) in 2015/16

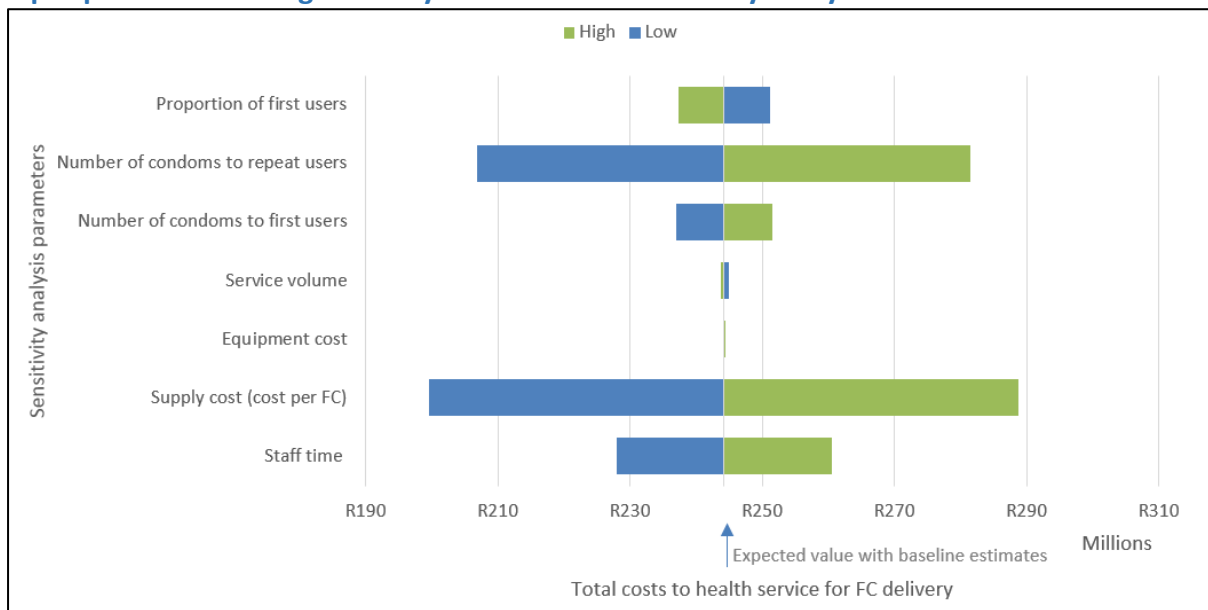
	2015/16	
<i>Distribution statistics</i>	Number	% of total
Total female condoms distributed according to DHIS	27,005,805	100%
Total number of female condoms distributed to...		
Full education users (often new)	4,761,678	18%
Refresher education users (often current or prior use)	22,065,818	82%
<i>National costs</i>		
Personnel	65,214,086	26.7%
Consumables (i.e. female condoms)	178,519,430	73.1%
Equipment	482,288	0.2%
Total	244,215,804	100%

SENSITIVITY ANALYSIS

To determine the sensitivity of the total national cost to changes in the different variables, we performed a series of one-way sensitivity analyses. Each variable was varied by 25% in each direction. As illustrated in Figure 1, the variable with the greatest impact on total national costs was the cost of the FCs. A decrease of 25% in the unit cost of FCs will decrease the total national cost by 18%. If the number of condoms to repeat users is increased, the total national cost will increase markedly as 69% of all users are repeat users. Varying staff time by 25% changes the total cost by 7%.

² Using the updated 2015-2018 FC purchasing costs, the national costs would increase to R244 853 902, an increase of 0.26% over the figures reported here.

Figure 1: Difference in total costs (R millions) to the health service when varying model input parameters using one-way deterministic sensitivity analysis



DISCUSSION AND CONCLUSIONS

We estimate that in total, for 2015/16, the health facility and commodity costs for distributing FCs in the public sector was over 244 million Rands. In contrast, recently released results from the South African HIV and TB Investment Case indicated that 94 million Rands were spent on procuring male condoms in the same period. This cost however is only for the procurement of the commodity and excludes distribution costs (7).

As noted, FCs are purchased for distribution in South Africa’s public sector at roughly R6.63 per condom. The cost for distribution, considering internal health facility costs only, is roughly an additional R3.63 per condom. In comparison, South Africa purchases male condoms for an average of R0.39 per condom (8). Future negotiations aimed at reducing FC commodity prices could greatly reduce the overall costs of distribution.

The facilities with the lowest cost per FC were those that issued higher numbers of FCs to users at each visit and those that used lay counsellors instead of nurses to provide education to users. Combining both of these strategies could reduce the cost per FC at other facilities.

There are limitations to this work. Our sample included just 8 health facilities in KwaZulu-Natal. However, provision of FCs is uncomplicated and straightforward, with little room for variation in the approach or resources required. We did not include the cost of FCs distributed through a basket or dispenser where clients could take as many as they wanted. This mode of delivery has limited scope nationally, but it could mean that our estimated costs per client and per condom may overestimate the actual costs. Further investigation regarding how many facilities nationally offer FCs in unlimited quantities would be helpful for future cost estimates. Finally, service volume records (i.e. the number of women served) were not always provided to the study team with confidence. However, in terms of costs, the service volume impacted only on costs of staff involved in ordering stock and equipment costs, which represented less than 1% of the total costs.

This analysis is the first of its kind conducted in South Africa and we believe that the results may be useful to policymakers and service planners.

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