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Direct facility funding as a response to user fee reduction: implementation and perceived impact among Kenyan health centres and dispensaries

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There is increasing pressure for reduction of user fees, but this can have adverse effects by decreasing facility-level funds. To address this, direct facility funding (DFF) was piloted in Coast Province, Kenya, with health facility committees (HFCs) responsible for managing the funds. We evaluated the implementation and perceived impact 2.5 years after DFF introduction.

Quantitative data collection at 30 public health centres and dispensaries included a structured interview with the in-charge, record reviews and exit interviews. In addition, in-depth interviews were conducted with the in-charge and HFC members at 12 facilities, and with district staff and other stakeholders.

DFF procedures were well established: HFCs met regularly and accounting procedures were broadly followed. DFF made an important contribution to facility cash income, accounting for 47% in health centres and 62% in dispensaries. The main items of expenditure were wages for support staff (32%), travel (21%), and construction and maintenance (18%). DFF was perceived to have a highly positive impact through funding support staff such as cleaners and patient attendants, outreach activities, renovations, patient referrals and increasing HFC activity. This was perceived to have improved health worker motivation, utilization and quality of care.

A number of problems were identified. HFC training was reportedly inadequate, and no DFF documentation was available at facility level, leading to confusion. Charging user fees above those specified in the national policy remained common, and understanding of DFF among the broader community was very limited. Finally, relationships between HFCs and health workers were sometimes characterized by mistrust and resentment.

Relatively small increases in funding may significantly affect facility performance when the funds are managed at the periphery. Kenya plans to scale up DFF nationwide. Our findings indicate this is warranted, but should include improved training and documentation, greater emphasis on community engagement, and insistence on user fee adherence.

Keywords Kenya, health care financing, health facility committees, community engagement, user fees

KEY MESSAGES

- An innovative system of direct facility funding (DFF) of government health centres and dispensaries has been piloted in Coast Province, Kenya, to address the negative effects of reducing user fees.
- DFF was perceived to have a highly positive impact through funding support staff, outreach activities, renovations, patient referrals and increasing health facility committee activity, which in turn was perceived to have improved health worker motivation, utilization and quality of care.
- The main challenges associated with the scheme were confusion over DFF operations, the continued overcharging of user fees, and very limited understanding of DFF among the broader community.
- Relatively small increases in funding managed at the peripheral level may have a significant impact on performance, but must be accompanied by comprehensive training and documentation; strong emphasis on community engagement; and insistence on user fee adherence.

Introduction

Over the past two decades there has been increasing pressure for the abolition or reduction of user fees for health care because of the barrier to access they pose for the poor (James *et al.* 2005; Lagarde and Palmer 2006; Save the Children UK 2008; Yates 2009). However, reducing user fees can have adverse effects by decreasing facility-level funds for running costs while increasing workload, thus increasing drug shortages and reducing staff morale, and negatively affecting community engagement in facility governance (Gilson and McIntyre 2005; James *et al.* 2006). Although primary health care facilities are also funded through centrally allocated public sector budgets, there is evidence that only a fraction of these resources actually reach them, reflecting a combination of inadequate funds, limited decentralization, bureaucratic problems and corruption (Lindelow *et al.* 2006; Ministry of Health 2007).

In Kenya, high and variable user fees were reduced in 2004 to flat rates of KES 10 or 20 (approximately US$0.15 or 0.29) at dispensaries and health centres, respectively. Special groups were exempted from fees, comprising under-fives, patients with malaria, tuberculosis, HIV/AIDS and other sexually transmitted infections, and those seeking maternal and child health or delivery services. Although utilization was initially found to increase, there were concerns that user fee reduction had reduced facility-level funds and therefore the ability of facility managers to respond to local problems (Pearson 2005).

To address these issues, the Kenyan Government and the Danish International Development Agency (DANIDA) piloted an innovative system of direct facility funding (DFF) of health facilities in Coast Province. A similar approach has been used in the education sector in Kenya and other countries following the introduction of free primary education (Ayako 2006). However, as far as we are aware, this approach has not been implemented elsewhere at this level of the health sector.

We undertook an evaluation of the Coast pilot to explore the implementation and perceived impact of DFF in health centres and dispensaries. Although DFF was implemented in all health facilities, we focused on health centres and dispensaries because they are the facilities most utilized by poor rural households, and direct funding mechanisms are novel at this level.

Direct facility funding

The Ministry of Health (MoH) was the primary source of support for all public health facilities in the country, providing them with infrastructure, trained health workers, drug kits and medical supplies. Since this study was completed the Ministry of Health has been divided into two separate Ministries: the Ministry of Medical Services and the Ministry of Public Health and Sanitation. The latter is now responsible for health centres and dispensaries. In addition, the District Health Management Teams (DHMTs) receive an annual budget for district health activities which mainly covers district-level activities such as the DHMT office, training and supervision. Prior to the introduction of DFF, the only cash income available to health centres and dispensaries was from user fees or other income-generating activities such as the sale of mosquito nets. The introduction of DFF increased the income they controlled by directly remitting additional funds to the facility level.

DFF has been piloted throughout Coast Province from mid-2005 to date. Funds were allocated across districts using the MoH Resource Allocation Criteria,[1] and within districts the breakdown across facility types was 85% to health centres and dispensaries, 10% to hospitals, and 5% to DHMTs to cover supervision. All MoH facilities with qualified staff were entitled to DFF, with funds allocated to individual facilities on the basis of workload and facility type (health centres received more than dispensaries).

The relationship between various DFF players and the flow of funds is depicted in Figure 1. Funds were remitted directly into the bank accounts of each facility and DHMT. The Provincial Health Management Team (PHMT) had an oversight role, supported by two Provincial Facility Grants Accountants contracted specifically for DFF by DANIDA. At the district level, the DHMT was responsible for DFF implementation, with key actors being the District Medical Officer for Health (responsible for overall supervision), the Facility Management Nurse (supports links between facilities, the community and the district) and the District Health Accountant (financial management).

Each facility should already have had a Health Facility Committee (HFC) in place, made up of local community members and the facility in-charge, who were trained on the DFF scheme. They prepared quarterly work plans and budgets, and were responsible for the management of DFF funds. Local communities

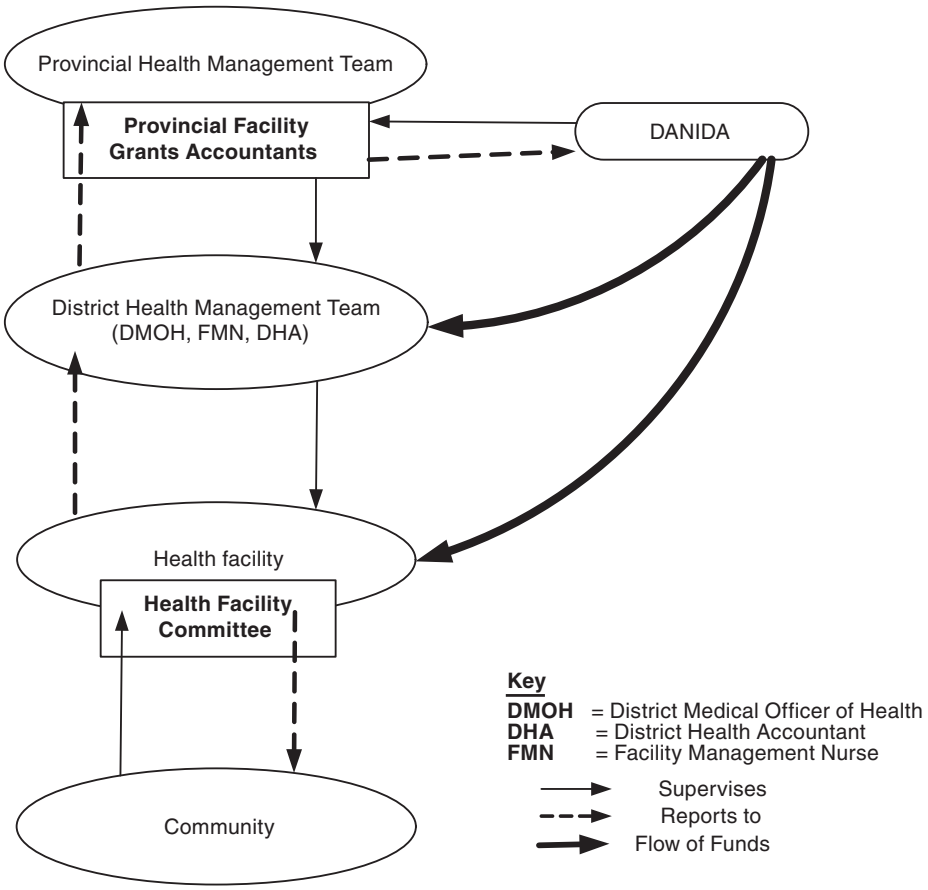

Figure 1 Relationships among direct facility funding players

Box 1 Expenditure Items on which DFF could be used

Category	Examples
Salaries for support staff	Basic wages for cleaners, grounds men, watchmen, record clerks, nurse assistants
Utilities, supplies and services	Electricity, water
Communications	Telephone, airtime, postage
Domestic travel and subsistence allowances	Staff travel costs and allowances, transfer of patients
Printing, advertising and information	Photocopying, posters, advertising
Specialized materials and supplies	Insecticides, oxygen, food rations
Office and general supplies and services	Stationery, clearing materials
Fuel and lubricants	Petrol, wood, charcoal
Other operating expenses	Bank charges, contracted guards and cleaning services
Routine maintenance	Vehicles, equipment, furniture and buildings, and other assets

were supposed to be empowered to monitor DFF through their committee members and through the display of facility utilization and accounts data on blackboards at health facilities.

DFF could be spent on 10 expenditure categories (Box 1). A maximum of 30% of each facility's funds could be spent on travel allowances, and funds could not be used for drugs, laboratory services, construction of new buildings or HFC sitting allowances. Funds could be spent on support staff, but not professionally trained health workers. Facilities were supposed to comply with the national user fee policy in order to receive DFF disbursements.

DFF formed part of a wider programme of DANIDA-funded health systems strengthening conducted throughout Coast Province since the early 2000s. This included training of health workers and managerial staff, construction and renovation, provision of equipment and supplies, strengthening the

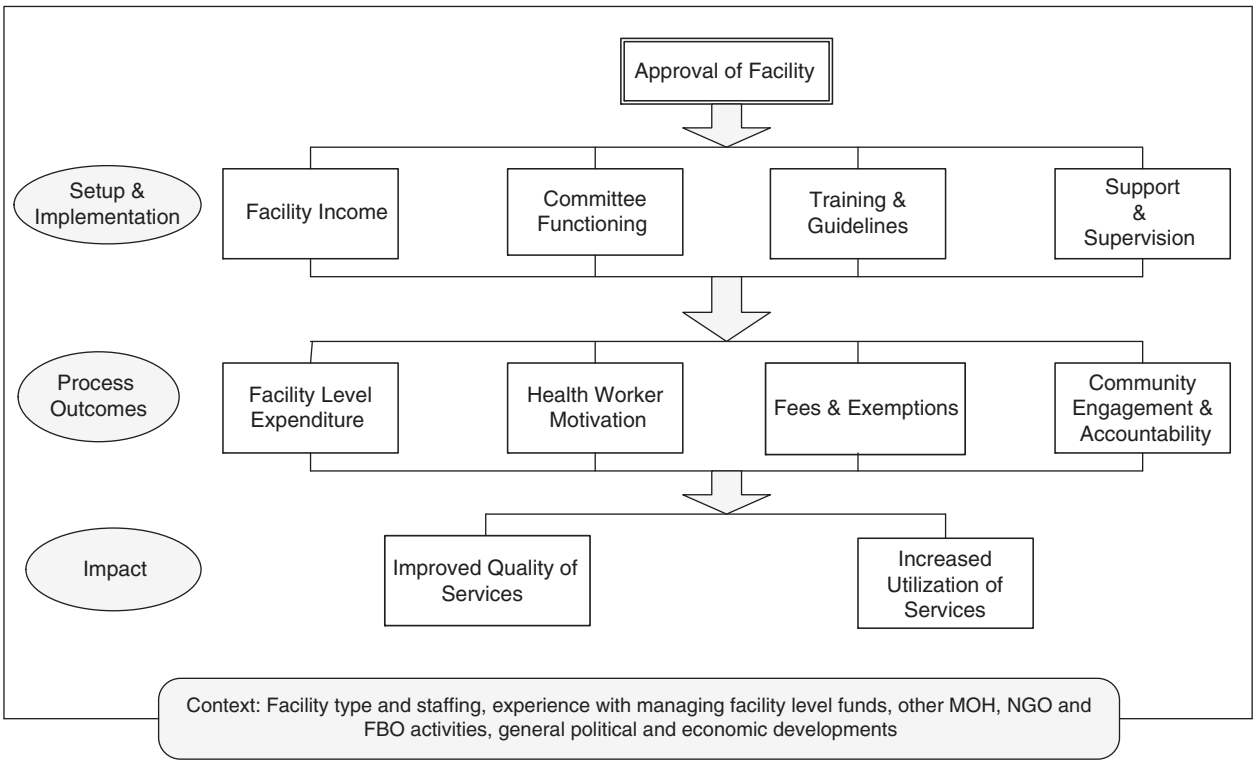

Figure 2 Conceptual framework

Table 1 Characteristics of study districts

Characteristic	Kwale	Tana River
Estimated population in 2007[a]	610 845	237 448
Main tribal groups	Mostly Digo and Duruma, both of the Mijikenda group	Pokomo, Orma, Waldei, Malakote, Mnyoyaya, Somali
Climate	Long rains March – July; short rains November – December	Dry and semi-arid to the north; frequent floods in the River Tana delta to the south
Main economic activities	Mainly food-crop farming and fishing; some pastoralism	Mainly pastoralists to the north and central; food-crop farming and fishing along the river basin and delta
Number of hours' drive from Provincial to District headquarters	1 hour	5 hours

[a]Source: 2007 National Population Database maintained by Noor and colleagues, KEMRI-Wellcome Trust Research Programme, Nairobi.

drug delivery system, enhancing community health activities (including seed funds for income-generating activities and strengthening of HFCs), and strengthening of health management information systems (HMIS) and financial management (Gethi and Wainaina 2007).

Methods

The conceptual framework in Figure 2 shows the hypothesized pathways through which DFF could improve utilization and quality of care. The framework was derived from the literature and discussions with stakeholders, and guided data collection and analysis.

Data were collected between October 2007 and March 2008, 2–3 years after the scheme was introduced. Two of the seven districts in Coast Province were purposively sampled to reflect likely diversity of experience with DFF implementation according to managerial views. Their characteristics are summarized in Table 1. It was not possible to assess the quantitative impact on key indicators such as utilization and fees charged because no baseline data had been collected. Historical HMIS data could not be used as a baseline, because of the high frequency of missing or incomplete records, and the recent upgrading of the HMIS system in Coast, which meant that historical and current HMIS data were not directly comparable. We addressed this issue by focusing our quantitative analysis on intermediate/

Table 2 Characteristics of interviewees

Interviewees	Total interviewed	Female (%)	Age (years)	Occupation[b]
District managers	7	1 (14)	Not assessed	DMOH: 2
				FMN: 2
				DHA: 1
				DHAO: 1
				PFGA: 1
In-charges	30	7 (23)	Median 34	Clinical officer: 5 (17%)
			Range 23–54	Registered nurse: 6 (20%)
				Enrolled nurse: 16 (53%)
				Community health worker: 3 (10%)
Exit interviewees[a]	292	228 (78)	16–24 (35%)	Not assessed
			25–44 (44%)	
			Over 44 (11%)	
			Don't know (10%)	
HFC members	12 groups	13 (26)	Not assessed; but a wide range	Mostly peasant farmers, some retired civil servants, retired chiefs and local politicians—mainly councillors
	50 participants			

[a]We aimed for 10 exit interviews per facility, but only 292 were completed because some facilities had very few clients on the survey day.
[b]DMOH = District Medical Officer of Health; FMN = Facility Management Nurse; DHA = District Health Accountant; DHAO = District Health Administrative Officer; PFGA = Provincial Facility Grants Accountant; HFC = Health Facility Committee.

process outcomes that could be easily linked to DFF (Figure 2), while using qualitative methods to explore stakeholder opinions on impact.

The sampling frame included all government health centres and dispensaries eligible to receive DFF.[2] A structured survey comprising an interview with the facility in-charge, record reviews and exit interviews was conducted at a sample of 15 facilities in each district, stratified by facility type. All five health centres in Kwale and all four in Tana River were automatically selected, and 10 of the 47 eligible dispensaries in Kwale and 11 of the 25 in Tana River were randomly selected. The in-charge interview assessed facility characteristics and services provided, drug availability, financial and non-financial resources, user fees and community engagement mechanisms. The record review covered utilization, income and expenditure over the period July 2006 to June 2007. Exit interviews were conducted on the facility premises but away from staff and HFC members. We aimed to select a convenience sample of 10 exit interviewees seeking outpatient curative services per facility, obtaining a total of 292 completed questionnaires. The interview covered patient characteristics and diagnosis, user fees paid and awareness of community engagement strategies.

In addition, a subset of six facilities from each district where the in-charge had been in post for at least 1 year was re-visited for in-depth individual interviews with the facility in-charge, and group discussions with a representative range of HFC members. The six facilities were purposively selected to encompass variation in facility type; accessibility to the district headquarters; and performance on indicators from the structured survey (adherence to the user fee policy, activity of the HFCs and completeness of HMIS records). Finally in-depth interviews were conducted with DHMT and PHMT staff, and one of the Provincial Facility Grants Accountants.

Quantitative data were double-entered using Fox-pro D-base IV, MS Access or MS Excel, and imported into STATA version 9 for analysis. Where possible, qualitative interviews were digitally recorded. Discussions were transcribed and imported into N-Vivo 7 for coding and analysis. A coding scheme was developed from the conceptual framework and from reading a sub-set of the transcripts to identify the main themes.

Informed consent was obtained for all interviews, and the study was approved by the Ethical Review Committees of the Kenya Medical Research Institute and the London School of Hygiene and Tropical Medicine.

Results

Table 2 summarizes interviewee characteristics. Exit interviewees were seeking curative care for themselves (48%) or their children (52%). Fifty-six per cent and 29% reported literacy in Kiswahili and English, respectively.

All facilities offered outpatient curative services but only five offered in-patient care (all health centres). The average monthly outpatient utilization per facility for the period July 2006 to June 2007 was 1750 for health centres and 799 for dispensaries. Although officially only facilities with qualified staff were eligible for DFF, three facilities receiving funds were managed by community health workers because the qualified health workers were on leave or awaiting replacement.

DFF set-up and implementation

Facility income

Table 3 shows the average annual cash income per facility by funding source (excluding resources received in kind from the central MoH or donors, such as staff, drugs and

Table 3 Average annual cash income per facility by source (July 2006 – June 2007) in US$[a]

	DFF US$ (%)	**User fees** US$ (%)	**Insecticide-treated net sales** US$ (%)	**Other**[b] US$ (%)	**Total** US$ (%)
Dispensary	2802 (62)	959 (22)	221 (5)	516 (11)	4498 (100)
Health centre	4720 (47)	4838 (49)	280 (3)	44 (1)	9882 (100)
All facilities	3392 (56)	2092 (34)	236 (4)	339 (6)	6061 (100)

[a]US$1 = KES67.80 in 2007.
[b]Income from income-generating activities (rental income, tree-planting, selling of water, etc.) and/or other donations.

equipment). DFF contributed 56% of facility cash income, user fees 34%, and sales of insecticide-treated nets and other sources 10%. The contribution of DFF at dispensaries was higher at 62% compared with 47% at health centres. Most facilities reported no problems in accessing the funds through their bank accounts.

Funds were supposed to be allocated to facilities based on workload. However, in Tana River HMIS, utilization data were very limited, so instead allocations were based on DHMT perceptions of how busy facilities were. This led to resentment among some facility staff who felt their facility had been misclassified. Later disbursements were also adjusted for the catchment population.

Committee functioning

All facilities surveyed had active HFCs, composed of the in-charge as secretary and between 8 and 18 community members (median 11). Most members were farmers, though some were professionals such as teachers, and a few were community health workers. A small fraction of the members were female (range 1–7; median 3), and their participation in discussions ranged from very passive in Tana River to very active in Kwale.

HFC meetings were held regularly (every 1–3 months), though a smaller executive committee often met more frequently. All but three HFCs reported receiving sitting allowances from user fee revenues, with a mean of KES 160 (US$2.36) per meeting (range KES 50–500 or US$0.74–7.37).

DHMT members reported that HFCs were in place before DFF but had been relatively inactive, and most respondents perceived that the operation of HFCs had improved since DFF introduction. The existence of funds to manage was said to have increased participation from HFC members and developed their sense of facility ownership.

> *''You know management without finance is not management at all. Now if it couldn't be this DANIDA [DFF] funds these committees couldn't be meeting often like that because they would have nothing to discuss about or to budget for.''* (Health worker)

Furthermore, DFF freed up user fee revenue to pay sitting allowances, which was also said to have improved HFC activity.

> *''Previously, we depended on the cost sharing [user fee] money only and it was too little, just enough for drugs or syringes but not allowances. . .members would not come for meetings because there were no allowances.''* (HFC member)

Relationships between in-charges and other HFC members were generally good. For example, some in-charges valued the opportunity to discuss issues with community members, and felt that HFCs provided decisions with local legitimacy. However, in a few cases, in-charges complained that HFC members saw themselves as 'watchdogs' that were imposed on the facility to supervise the staff:

> *''The chairman and treasurer act as if they are watchdogs of the facility staff. They are stubborn, and are always in the compound monitoring what is happening, thus they are a nuisance.''* (Health worker)

> *''. . .the committee believed the facility and the money belonged to them. . .if you are told this [dispensary] is yours would you not undermine the person working here. . .?''* (Health worker)

DFF training and guidelines

The DFF training received by HFCs was highly valued. However, problems emerged which pointed to shallow coverage in certain key areas, such as the expenditure rules and financial management. These problems were compounded by the lack of any guidelines on DFF at the facility level. Nearly all health workers reported problems with filling the cashbook. Many said they could not understand the entries, and this forced them to seek assistance from the District Health Accountant, thereby interrupting service provision. Some district managers admitted similar difficulties, referring to the cash book as 'that big book':

> *''I have a problem understanding those entries myself. . .''* (District manager)

In some facilities, DFF funds were not spent initially, even after several disbursements, which DHMT members attributed to confusion over expenditure guidelines.

> *''Some were even afraid of spending the money because they heard of strictness and the guidelines, and the procedures, so some had apathy to use the funds. So I think it was somewhere around midway that they had gained the courage, otherwise they used to have accrued balances.''* (District manager)

However, at the time of the study, some of these issues had been resolved, reportedly allowing the intensity of supervision to be reduced.

Support and supervision

The support of the Facility Management Nurses, District Health Accountants and Provincial Facility Grants Accountants was considered vital by DHMT members. Facility Management

Nurses organized the selection of committees, arranged training, and assisted committees in planning and evaluating progress. District Health Accountants advised on budgeting and balancing the cash book, received facilities' monthly returns and helped resolve accounting problems.[3] The two Provincial Facility Grants Accountants each supervised three to four districts, ensuring appropriate record keeping, assisting in the interpretation of DFF rules and allowing flexibility where appropriate. Most DHMT members said they spent a lot of time providing DFF accounting support to facilities, but despite this increased workload, they were positive about DFF, partly because the DHMT also received DFF funds to facilitate supervision.

The districts differed in the degree of DHMT involvement in planning DFF expenditure. In Kwale, HFCs decided how money should be spent within the basic DFF rules, but in Tana River, the DHMT distributed predetermined budget plans, allocating funds by expenditure category. HFCs were allowed to request alterations but this required DHMT approval. Some HFC members felt these guidelines represented undue interference.

> *''The community should not just be told you must spend this money this way. They should decide for themselves—let it be a bottom-up approach...''* (HFC member)

Other respondents found the guidelines useful in decision-making.

> *''...there are no difficulties [in decision-making on expenditure]... it can only be difficult if you give people room to budget without some limitation...''* (Health worker)

One in-charge said that guidelines reduced arguments, for example where some HFC members wanted to use a disproportionate amount on salaries in order to employ their contacts.

In general, interviewees reported that DFF accounting procedures were functioning well. There were occasional lapses, examples including an in-charge producing fake receipts, a treasurer disappearing with funds and an in-charge claiming to have spent money on facility upgrading which had actually been donor funded. However, these were isolated cases and had been addressed by the DHMT or Provincial Facility Grants Accountants.

Process outcomes

Facility-level expenditure

Records from the Provincial Facility Grants Accountant showed that facilities spent a high proportion (82%) of the DFF funds disbursed. Figure 3 summarizes their expenditure. About a third was on wages for support staff. Travel allowances (transport costs, patient transfers, allowances for outreach services and staff per-diems, etc.) accounted for about a fifth (21%), and construction and maintenance of buildings, furniture and equipment 18%.

The pattern of DFF expenditure was fairly similar across districts, except for wages, which accounted for 40% and 22% in Kwale and Tana River, respectively, and construction and maintenance, which accounted for 7% and 33%. The top three categories of expenditure were similar across facility type, although dispensaries spent a higher proportion on travel allowances (27%) compared with health centres (13%). The pattern of expenditure for DFF was similar to that for other facility income, the only important difference being that the latter could be spent on drugs and sitting allowances, which accounted for 13% and 11%, respectively, across all facilities. Many HFC members felt that DFF resources should also be used to fund drugs. They argued that centrally provided drug supplies were inadequate, and indeed all facilities had a stockout of at least one essential drug on the survey day. Managerial staff reported that one reason for excluding expenditure on drugs was that DANIDA was supporting other drug procurement initiatives in the province.

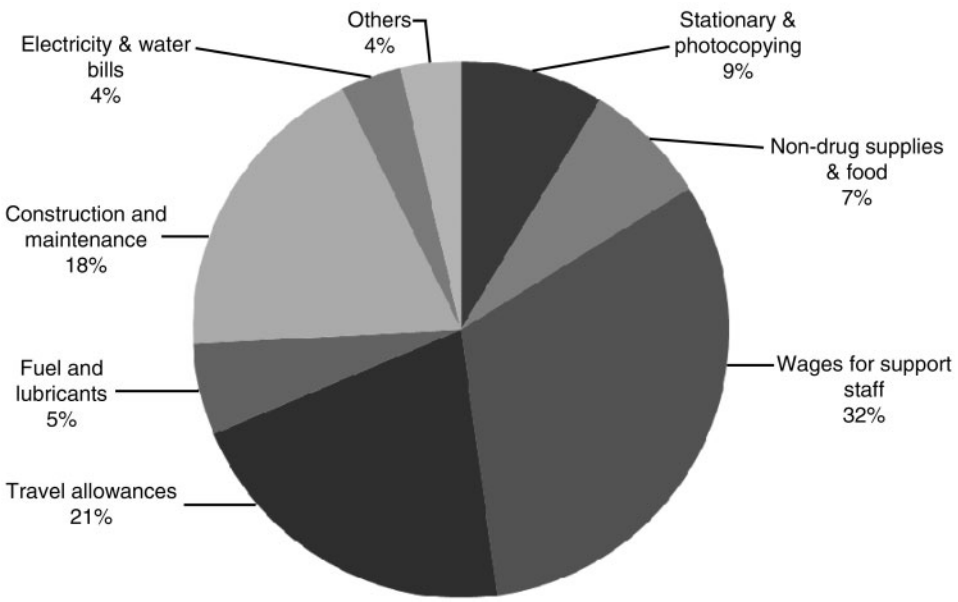

Figure 3 Direct facility funding expenditure in health centres and dispensaries (July 2006–June 2007)

Table 4 Number of staff by source of salary[a,b]

Source of salary	District		Type of facility		TOTAL *n* (%)
	Kwale *n* (%)	Tana River *n* (%)	All dispensaries *n* (%)	All health centres *n* (%)	
MoH[c]	92.5 (53.6)	50 (45.0)	38.5 (31.4)	104 (64.7)	142.5 (50.3)
DFF[d]	49.5 (28.7)	44.7 (40.3)	64.2 (52.4)	30 (8.6)	94.2 (33.2)
User fees	22.5 (13.0)	11.3 (10.2)	14.8 (12.1)	19 (11.8)	33.8 (11.9)
NGO[e]	3 (1.7)	3 (2.7)	1 (0.8)	5 (3.1)	6 (2.1)
Volunteers	5 (2.9)	2 (1.8)	4 (3.3)	3 (1.9)	7 (2.5)
TOTAL	172.5 (100)	111 (100)	122.5 (100)	161 (100)	283.5 (100)

[a]Includes both staff centrally employed by the MoH and those hired locally as support staff.
[b]Where an employee's salary was funded by more than one source, their time was allocated proportionately.
[c]Employer of all technical staff and some support staff.
[d]Employer of support staff only.
[e]Non-governmental organization.

The important contribution of DFF in funding staff is shown in Table 4. DFF covered 33% of all staff, including cleaners, watchmen, patient attendants, registration clerks and pharmacy assistants. DFF salary contributions were particularly important for dispensaries, where they funded over half of all personnel.

Health worker motivation

It was a common perception among health workers and DHMT members that DFF had motivated health workers to work better. First, health workers found it easier to perform their jobs because of the help provided by support staff. Before DFF health workers were obliged to engage in activities such as registering clients, collecting funds and dispensing drugs, in addition to clinical care. The improved staffing meant that even though DFF was said to have increased the administrative workload on health workers, few complained.

> *''. . .if you check the workload, I could not do it alone. . .but because I employed some people paid by DANIDA, you find that I am comfortable. Even sometimes, I could take a day off to follow some things in Kwale and when I come back. . .work is still going on without me.''* (Health worker)

Second, health workers felt that access to and control over DFF funds enabled them to pay utility bills, purchase non-drug supplies, make more timely decisions, resolve local problems and plan more effectively:

> *''. . .the mere fact that now they have some funds to manage. . .you know that gives you some motivation somehow. Then. . .the fact that at least to some extent they are in control of some of the activities and damage control measures: because when something runs out you can easily say now you are going to purchase it without consulting the DMOH [District Medical Office of Health] or the PMO [Provincial Medical Officer].''* (District manager)

However, apparently most important for motivation was the provision of travel allowances for outreach activities or visits to the district headquarters.

> *''There was motivation because before [DFF] staff were being forced to go out on outreaches with no transport and no lunches. Nowadays there is no problem and if you tell someone to go for an outreach, they are happy to go. . .now there is no such problem almost everybody is motivated.''* (Health worker)

Together, these features led to DFF reportedly increasing staff ability to meet DHMT targets in areas such as immunization, facility-based deliveries and antenatal attendance, as described below under perceived impact.

Fees and exemptions

According to the national user fee policy, a patient visiting a dispensary or health centre should have paid KES 10 or 20 (2007 US$0.15 or 0.29), respectively, for all services received, except those exempted from all charges (under-fives, patients with malaria, HIV/AIDS, TB or sexually transmitted infections (STIs), and maternal and child health and delivery clients). In-charges were asked what they charged for a list of tracer cases based on these categories (Table 5).

No single facility complied with the policy across all cases. The only category which was reportedly always charged appropriately was deliveries. The poorest adherence was for patients with STIs (3/30), and adults with malaria (5/30). The frequency of overcharging was supported by exit interview data, with clients reportedly paying a median of KES 5 per child (range KES 0–45), and KES 10 per adult (range KES 0–150).

Interviewees said that DFF had not changed charging practices, with the exception of one dispensary, where the in-charge claimed to have reduced fees from KES 20 to KES 10 per consultation.

Some health workers said they did not adhere to the policy because DFF funds were insufficient for running the facilities; as exempted patients formed the bulk of their clients, not charging them would have a major impact on revenue. Others blamed non-adherence on a lack of clarity in the communication of the policy:

> *''. . .no formal communication was done by the Ministry, it was just announced over the radio that we waive the under-fives and such kind of thing. So when a government officer comes here to ask me why I am charging the under-fives and [I respond] you know an announcement over the radio is not the policy of the government, that is an announcement of KBC (Kenya*

Table 5 Number of facilities adhering to user fee policy[a,b]

Category	District		Type of facility		TOTAL ($n=30$)
	Kwale ($n=15$)	Tana River ($n=15$)	Dispensaries ($n=21$)	Health centres ($n=9$)	
Child with malaria	13	9	13	9	22
Adult with malaria	2	3	2	3	5
Child with pneumonia	12	8	13	7	20
Adult with pneumonia	13	10	16	7	23
Adult with tuberculosis	10	12	16	6	22
Adult with gonorrhoea	1	2	2	1	3
Woman at first antenatal visit	15	13	20	8	28
Mother requiring delivery	15	15	21	9	30
All cases	0	0	0	0	0

[a]Based on reports of in-charges.
[b]These figures do not include lab charges, as it was not clear from the user fee policy whether lab services should be free for exempted patients.

Table 6 Community members' knowledge of HFCs

	District		Type of facility		Total ($n=292$)
	Kwale ($n=142$)	Tana River ($n=150$)	Dispensary ($n=202$)	Health centre ($n=90$)	
Ever heard of HFC, *n* (%)	48 (34)	87 (58)	101 (50)	34 (38)	135 (46)
Know HFC chairman[a], *n* (%)	13 (9)	35 (23)	39 (19)	9 (10)	48 (16)
Know any HFC member[a], *n* (%)	25 (18)	50 (33)	56 (28)	19 (21)	75 (26)

[a]Not necessarily by name.

Broadcasting Corporation). (Laughter) So right away, we do not have a written real documentary directive that [we] don't charge under-fives.'' (Health worker)

Some DHMT members said they would allow HFCs to charge higher fees or levy fees on exempted groups if the facility was in need, on condition that the community agreed.

Community engagement and accountability

As noted above, HFCs were generally functioning well and were perceived to have become more active with the introduction of DFF. HFC members felt they provided an important link between the facility and the community. One health worker noted that this relationship was enhanced by the employment of community members as support staff.

However, just under half of exit interviewees (46%) were aware of the existence of their HFC, only 26% reported knowing a committee member and only 16% said they knew the chairman (Table 6). There were also some examples of breakdowns in trust between the HFC and the broader community. In one case, HFC members complained that community members were suspicious over their handling of facility funds.

''...The treasurer resigned...he was fed up with the rumours that money was being 'eaten'...'' (Health worker)

Members of another HFC reported being accused by the community of developing negative attitudes towards them by virtue of being in the committee. At the same time, HFC members felt the community did not understand the DFF rules and therefore made inappropriate demands:

''...once they heard the facility was receiving some money, the community wanted us to make contributions to projects...they do not understand that the money is used within guidelines...'' (HFC member)

Twenty-seven of the 30 facilities surveyed had a blackboard, clearly visible to clients in 25 facilities. Facility staff were supposed to complete the blackboard table with monthly data on health and utilization (e.g. number vaccinated, underweight, births and deaths, etc.), and accounts (income, expenditure, cash in hand, cash in bank).

We defined blackboards as 'complete' if all columns were filled up to the month before last. Of the 24 blackboards where these data were collected,[4] only three had 'complete' information on health and utilization; 18 facilities had partial information, and three none. No facility had complete financial information: six had partial information, while the other 18 were blank. Reasons given for incomplete information included lack of time due to the administrative burden on staff, and the fear that filling in financial data would increase the risk of theft:

''...we found that the financial information is a bit sensitive...we advise them not to fill as they can put themselves at risk...the community has a crime problem... They can come and slaughter the in-charge...'' (District manager)

Only 39% of exit interviewees said they had ever read the information on the blackboard, and when asked what the

boards displayed, only 21% and 18% were able to mention the presence of utilization and financial data, respectively.

Views on the usefulness of the boards were mixed. Some HFC and DHMT members said they led to greater transparency in the way funds were utilized and this was beneficial to the community. Members from two HFCs said they now found they got fewer questions from the community about finances as this information was displayed on the boards. However, some interviewees felt the boards were not relevant to the local community.

> *''These are valuable for donors and for the educated but not for the local community who are mostly illiterate: they wouldn't know its significance.''* (District manager)

Perceived impact on quality of care and utilization

Interviewees felt that DFF had a significant positive impact on both quality of care and utilization, mainly through influencing health worker motivation and facility expenditure as described above. For example, the ability to employ more support staff reportedly led to improved safety and cleanliness, and reduced waiting times and staff fatigue. Greater access to and decision-making over DFF funds were said to have contributed to maintaining non-drug supplies at adequate levels, and to have indirectly led to improved drug stocks.[5] The use of DFF funds to renovate buildings, create space for specific services such as laboratory and pharmacy, fence compounds, install security gates, and purchase doors, cabinets, cupboards and locks, was said to have improved storage of drugs, stationery and equipment, and provided more comfortable working conditions for staff and waiting bays for patients. Overall, the environment was felt to have become safer and more attractive for both clients and staff.

Utilization was also felt to have risen due to the increase in outreach services, facilitated by the provision of fuel and allowances. Indeed all facilities except one reported outreach services in the previous quarter. Outreach was felt by both DHMT staff and health workers to be important in increasing coverage of services such as immunization and antenatal care, enabling health education and increasing awareness of and demand for services among those living far from facilities. In Kwale, health facilities had reportedly extended their opening hours since the introduction of DFF, also increasing utilization. It had become more common to open on weekends and there were more frequently staff on call overnight.

The range of factors perceived to have linked DFF to improved quality of care and utilization, and the centrality of staff motivation as both an influence and outcome, were illustrated by one health manager:

> *''. . .if you have a devastated facility even getting clients there might be difficult. Keeping it clean will also be difficult and infection prevention would be difficult if you only maybe do everything from one table: you keep your injections there, tablets there; you have no cupboards to lock some of your drugs, etc. It's very difficult to operate in such a situation. But at least when the building is painted it looks neat and clean. The staff are motivated and the community feels like they want to come and everything then moves well.''* (District manager)

Discussion

This study has demonstrated that direct funding can be implemented successfully at health centres and dispensaries, providing a mechanism to transfer funds to the periphery of the health system. HFCs, comprising a fair mix of community representatives, were active and able to manage the funds reasonably well. DFF was perceived to have had a highly positive impact by the great majority of the respondents. Utilization of facilities was thought to have increased, especially through the expanded outreach programmes, thus improving access to health services. Although this resulted in a heavy workload for staff, there were no complaints as the increased workload was offset by the improved working environment through availability of supplies and improved infrastructure, the ability to hire more support staff and the provision of allowances.

DFF contributed a large share of the facilities' cash income, though user fees were also important, especially at health centre level. However, compared with the full costs of running health centres and dispensaries, DFF represents only a small proportion. Wang'ombe and Mugo estimated the average annual recurrent costs of dispensaries in Coast Province to be US$21 920 (range US$19 311–27 123), with those of health centres US$228 222 (range US$41 779–347 715) (Wang'ombe and Mugo 2006),[6] meaning that average DFF income would be equivalent to only 12.8% of total recurrent costs in dispensaries (range 10.3–14.5%) and 2.1% (range 1.4–11.3%) in health centres. This implies that relatively small increases in funding may have a significant impact on performance when the additional funds are managed at this peripheral level.

The main limitation of this study was the lack of baseline data due to the timing of the study and the inadequacies and recent changes in the routine HMIS. As a result, it was not possible to validate the positive perceptions of DFF impact that we documented with quantitative data on utilization and quality of care. However, we have reasonable confidence in the validity of these perceptions due to the in-depth nature of the qualitative interviews conducted, and the careful documentation of the set-up, implementation and process outcomes (Figure 2) which would have been required to achieve such results. Nonetheless, it is possible that respondents may have wanted to present DFF in a positive light in order to encourage the continued flow of funds. In addition, in providing their views on DFF impact, respondents may have attributed to DFF beneficial outcomes resulting from other elements of the DANIDA-funded health systems strengthening programme in Coast Province, such as a separate facility renovation project or the attempts to strengthen the drug supply system.

A number of problems with DFF implementation were highlighted. First, HFC training was inadequate, particularly in the area of financial management, and relevant guidelines at facility level were completely lacking. Secondly, facilities were not adhering to the national user fees policy. Many continued to levy charges above the prescribed fees and failed to exempt patients such as the under-fives and those with malaria. These charges contravened the national policy but were considered 'official' at the facility level, where they were often agreed with the HFC, and sometimes with the DHMT. However, the over-

charging reported should be considered a minimum as in-charges may have been unwilling to disclose fully deviation from the national policy, or may have been charging additional informal fees for their personal gain.

Although the operations of HFCs were reported to have improved since DFF introduction, only a minority of exit interviewees were well informed about their activities. No major cases of fraud were reported, but the acknowledgment by HFC members that the community knew very little about DFF also raises concerns about transparency. On the other hand, it is possible that the low education level of the community and lack of interest in health facility matters led to challenges in communicating relevant information.

The use of blackboards to present utilization and financial information to patients and the community in general is innovative. However, the utility of that information for community members is unclear, since almost half the exit interviewees were not literate in Kiswahili, and the boards were rarely completely filled, especially for the financial information. It was unclear how community members should interpret some of the HMIS data. For instance, does an increase in outpatient cases represent a success because utilization increased, or a failure because disease incidence is higher? The financial information was also limited to bank account totals with no information on how facility funds had been spent.

Some similar successes and challenges have been documented during the direct funding of schools to facilitate provision of free primary education, implemented nationwide in Kenya and other African countries (Ayako 2006; Nyamute 2006). The funds were transferred directly to school bank accounts, and were managed by local committees, made up of school staff and parents, whose roles included allocating funds within the government guidelines and awarding tenders for school supplies. As with DFF, evaluations of these programmes also reported that the direct financing was well received, but problems were identified with inadequate training of school heads, leading to weaknesses in financial management skills, some conflict between school staff and local committee members, and a general failure to sensitize the wider community to their role. Additional problems documented in the education sector, but not in health, included slow disbursement of funds, poor monitoring leading to misallocation of resources and embezzlement, and political interference. The fact that these types of problems were not widely reported in the health sector DFF may reflect the strong support and supervision provided in Coast and the smaller scale of the province-wide pilot.

The merits of DFF should be considered in relation to alternative mechanisms for financing peripheral health facilities, such as increasing central allocations to the district level, raising user fees, and introducing community-based health insurance and performance-based financing initiatives. Traditionally, health centres and dispensaries have been mainly financed through central allocations to the district. However, Public Expenditure Tracking Studies have demonstrated the difficulties in monitoring such flows, and ensuring that they are not delayed for bureaucratic reasons, diverted to other priorities or leaked from the system (Lindelow *et al.* 2006; Ministry of Health 2007). User fees have been widely used internationally, and continue to be an important source of facility revenue in Kenya. However, there is increasing consensus that they have a significantly negative impact on utilization, especially by the poor (James *et al.* 2006; Lagarde and Palmer 2006; Meessen *et al.* 2007; Lagarde and Palmer 2008). Exemption policies to facilitate access for poorer groups are seldom well-implemented (Meessen *et al.* 2006). Community-based health insurance presents an alternative funding mechanism with the potential to provide some financial protection by reducing out-of-pocket spending. However, to date it has generally operated on a small scale, disadvantaged populations have been less able to enrol in such schemes and there is little or no evidence that schemes have an effect on the quality of care or the efficiency with which care is produced (Ekman 2004; Carrin *et al.* 2005).

DFF funds were allocated across facilities based only on facility type and reported utilization. An alternative approach would be to make funding levels dependent on performance on key indicators, such as coverage of vaccinations or supervised deliveries. Evidence on such performance-based financing mechanisms in health in low- and middle-income countries is still weak, though some recent projects in Rwanda and the Democratic Republic of Congo have shown encouraging results on quality and coverage of selected services and improved health worker performance (Meessen *et al.* 2007; Johannes *et al.* 2008). Concerns with performance-based financing include the administrative and financial burden and the potential for fraudulent performance reports. In addition there is a risk of perverse incentives such as encouraging supplier-induced demand; diverting health workers from unmonitored but equally important activities; compromising of quality in order to maximize output; and focusing on easier-to-reach populations (Eichler 2006; Meessen *et al.* 2007; Save the Children UK 2008). The Kenya DFF experience indicates that even without performance targets, an increase in funding at peripheral levels may have a positive impact on utilization and quality. Little is known, however, about the relative cost-effectiveness of these financing options, highlighting the importance of large-scale rigorous studies in future.

Policy implications

These positive findings from this provincial-level pilot indicate that scale up of the current system is warranted, and that the level of funding per facility could also be increased, as absorptive capacity was high and HFCs had constructive ideas on how extra funds could be utilized. Indeed, the Kenyan Government plans to roll out DFF throughout the country in 2010. One would expect the findings from this pilot to be generalizable to other areas of Kenya, as Coast is one of the poorest provinces and contains a mixture of relatively accessible and inaccessible districts, and a wide variety of population groups. However, Coast has benefited from DANIDA health systems support since 2000 and could therefore be considered atypical in some respects. For example, the drug delivery system was strengthened, infrastructure was improved and facility management heavily supported by the DANIDA-funded Facility Management Nurses (Gethi and Wainaina 2007). It is clear that the support and supervision provided by the Facility Management Nurse, District Health Accountant and particularly

the Provincial Facility Grant Accountants were crucial in ensuring that funds were spent according to plans, problems were resolved quickly and accounting procedures followed. To replicate the successes in Coast, similar support will be required in other provinces. Furthermore, the pilot in Coast Province was on a relatively small scale, and funds were easily transferred from DANIDA into individual facility accounts. Nationwide implementation will face a more significant set of legal and bureaucratic challenges in establishing financial flow and accountability mechanisms that are acceptable to the MoH and the Treasury, and are compatible with existing financial regulations.

In addition, there is scope to strengthen three areas of DFF implementation and operations.

Training and documentation. The successful implementation of DFF requires a simple, clear manual for HFC members and health workers. This could reduce confusion about DFF operation and so increase trust between key actors. We suggest that it should cover HFC roles, procedures for elections, operations of DFF including accounting for funds, rules on how funds can be used and information that should be provided for community members. In addition, there should be comprehensive training of HFC members and health workers focusing on key elements of DFF operation. This should be done both before the first tranche of funds is disbursed and repeated periodically to refresh the skills of past trainees and introduce new health workers and HFC members to DFF.

Community engagement. Our results point to the need to clarify what the broader community needs to know regarding DFF, and to decide on appropriate mechanisms of communication. While the blackboards have some potential, the information currently displayed is relatively difficult for community members to interpret and use. Their utility could be improved by displaying information more relevant to community needs, such as the names and villages of residence of the HFC members, a simple description of HFC roles, facility income per quarter (DFF, user fees and others) and facility expenditure per quarter by line item.

User fees. It was expected that DFF would increase adherence to the user fee policy, but overcharging remained common, representing a missed opportunity to improve equity of access. The following steps are therefore proposed to improve adherence. First, the policy should be clarified by the provision of a clear MoH document listing all the applicable fees, which should be displayed at all health facilities. Secondly, adherence to the policy should be made a key part of DFF training, including evidence on the deterrent effects of fees, especially to the poorest, and the ineffectiveness of waiver schemes. Finally, the receipt of DFF funds should be made conditional on user fees adherence. It should also be noted that DFF could provide a mechanism for compensating facilities for lost revenue in the event that a decision to abolish user fees completely is made in Kenya.

Greater debate is needed on two areas, both relating to DFF expenditure rules.

Degree of HFC autonomy over allocation of funds. A key question is whether HFCs should be given a free reign within basic rules as in Kwale or provided with a predetermined budget plan as in Tana River. Greater regulation could be argued to undermine autonomy and community involvement, but could also simplify decision making and potentially improve community relations. It could also be argued that although HFCs are close to the facility and the community, they lack the public health training required to make unfettered judgements between competing priorities.

Drug purchase. Drug stockouts have been argued to be a major constraint, with a negative impact on utilization and quality of care. Currently, drugs can be purchased using user fee revenue but not DFF, partly reflecting the fact that DANIDA was supporting other initiatives to improve drug availability in Coast Province. This has led to demands from some HFCs to allow DFF funds to be spent on drugs. This issue requires careful debate. On the positive side, allowing DFF spending on drugs could have a positive impact on quality of care and utilization, and remove a temptation to overcharge user fees. On the other hand, allowing more local drug purchase could lead to inappropriate and poor quality drug procurement, and potentially undermine efforts to strengthen drug delivery systems.

Finally, this study provides important lessons for the planned scale-up of DFF in Kenya and for similar initiatives elsewhere. However, in view of the lack of quantitative impact data, further research is clearly warranted, to assess impact, costs and value for money, and to facilitate comparison with other funding mechanisms for health centres and dispensaries. Such studies should at a minimum have baseline and follow-up data, preferably a control group, and ideally a randomized design. They should be suitably powered to obtain statistically robust findings and include qualitative data to facilitate the interpretation of results. This must go alongside the strengthening of routine HMIS, to facilitate on-going monitoring and evaluation and to ensure that future studies can rely on these data for historical trends in key outcomes such as utilization and user fee revenue.

Endnotes

[1] The resource allocation criteria are based on poverty levels, new AIDS cases, number of women of reproductive age, number of government facilities, number of under-fives and area (sq km).

[2] Excluding five dispensaries in Kwale that had been involved in another recent study.

[3] Tana River's District Health Accountant had left and his role was being covered by the Facility Management Nurse.

[4] Not recorded for one facility.

[5] Although DFF could not be used to purchase drugs, interviewees reported that DFF could lead indirectly to improved drug stocks because it reduced competing demands for user fee revenue, which could then be channelled towards drug procurement.

[6] Wang'ombe and Mugo's costs have been converted to 2007 US$ using the Kenyan GDP deflator, and the average US$/KES exchange rate for 2007. The recurrent costs include all personnel, training, transport, utilities, drugs and other medical and non-medical supplies and services.

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