Estimating the Impact of Maternal Health Services on Maternal Mortality in Uganda

March 1, 2004

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INTRODUCTION

The Government of Uganda recognizes that its population is its most valuable asset and is an integral component of the development process. The development goals are therefore geared towards the improvement of the quality of life of its population. Indeed, improving the quality of life is one of the four pillars of the Poverty Eradication Plan of the Government of Uganda. High fertility, maternal and infant morbidity and mortality, however, hamper the attainment of these goals.

Currently in Uganda, the maternal mortality ratio (MMR) is recorded at 505:100,000 live births, the infant mortality rate (IMR) is 88:1,000 live births, the total fertility rate (TFR) is 6.9 births, and the contraceptive prevalence rate (CPR) is 23%. The major cases of maternal morbidity and mortality are preventable. One of the major strategies for reducing infant and maternal mortality and fertility is ensuring access to quality integrated Reproductive Health services, *(Five Year Health Sector Strategic Plan 2000-2005 and UDHS 2000/2001).*

Because of its commitment to addressing these issues, the Ministry of Health for Uganda requested an application of the Safe Motherhood model. Collaboration was established with the Population Secretariat, of the Ministry of Finance, Planning and Economic Development. Technical and financial assistance were sought from the Futures Group/USAID in execution of this undertaking.

The Safe Motherhood (SM) model is a tool developed by Futures Group/POLICY Project that can be used to improve the understanding of how changes in maternal health services can avoid maternal deaths.[3] Some of the questions the model can ask are:

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- Where should effort be focused to yield the greatest reduction in maternal mortality?
- How much would it cost to reach a certain level of maternal mortality?
- How much of a reduction in maternal mortality is feasible in the next few years?
- What can be learned from the past performance of a similar country?

The SM model estimates the impact of various scores from the Maternal and Neonatal Program Effort Index (MNPI) on the MMR.[4] The MNPI is an index consisting of 81 different program features for maternal and neonatal health services that have been evaluated by reproductive health experts in each of 55 countries. The SM model uses the current scores for an individual country to represent the current situation of the delivery of the 81 health services. A simulation model was then developed to show how changes in the MNPI item scores would affect the MMR.

After the model was initially developed, further development was requested so that the costs of implementing interventions were included. Information on the program cost at the national or district-level is critical to the success of any safe motherhood program. This information can be used:

- To assist in the definition of essential packages or clusters of interventions that are appropriate to the local setting and respond to local needs;
- To support the development of operationally feasible and sustainable plans for implementing the local packages of interventions;
- To assist in the development of plans for financing the interventions and;
- To help in determining a rational scheme of deploying personnel, equipment and other inputs required in implementing the package.

The Safe Motherhood Model links the cost of attaining higher MNPI scores, and thus lower maternal mortality rates, via the World Health Organization's Mother-Baby

[3] See Bulatao and Ross (2003) for a complete description of the methodology underlying the model.
[4] See Ross et al. (2001) for a thorough discussion of the MNPI.

Costing Package (MBP).[5] The WHO Safe Motherhood program developed the MBP in 1994 to help countries identify nationally appropriate packages of essential interventions to reduce maternal and newborn mortality and morbidity. The MBP is used to estimate the cost of implementing a set of maternal and newborn health interventions at the district level. The MBP has two separate workbooks, one that examines current standards of practice and expenditures, and another that illustrates a 'standard' or 'ideal' level of care and expenditures.

The two models – the SM and MBP models - are linked by assuming that current expenditure levels result in the current MNPI score, and that the 'ideal' level of expenditure would result in a perfect MNPI score of 100. Any increase in expenditures towards the ideal budget results in a proportional increase in the relevant MNPI score, and thus to a reduction in the MMR.

DATA COLLECTION

A task force was formed to gather the necessary data in Uganda. Its tasks were to collect information required to apply the SM model, including:

1. District-level standards of care for a variety of interventions
2. National maternal and newborn clinical management guidelines
3. National salary cost information
4. National drug and supply costs
5. Demographic and infrastructure information
6. Epidemiological information, including incidence data
7. Family planning prevalence and method mix information

Initially, it was envisaged that all the data would be collected using the central level records. Because Uganda operates a decentralized system of service delivery, however, it was necessary to collect data at the district and lower level units.

[5] Available at http://www.who.int/reproductive-health/economics/intro.html.

The study was a cross sectional one that considered many aspects that would reduce maternal mortality ratios in Uganda. It involved data collection from 6 districts, review of relevant documents at the Ministry headquarters, World Health Organization reports, and interviews with key informants. Records in the sampled health facilities were analyzed to produce service data.

The sample was designed to utilize the available resources optimally. The districts and health facilities were selected on a regional basis, including church/non governmental organization (NGO) health facilities. District, Regional referral and National referral hospitals were included in the sample. All facilities other than church facilities are publicly owned.

The questionnaires and data consolidation forms used are those developed by the WHO. They were pre-tested in Luwero, and then fine-tuned and applied to the other districts with some adaptations. In the place of health posts, the team visited Health Centre IIIs (HC III), which have approximately the same level of service delivery. They also visited Health Centre IVs (HC IV), which have the same level of service delivery as health centers as presented in the MBP. Hospitals sampled were either district, regional, NGO or referral which provide same levels of services as those indicated in the model.

The data were collected from the districts of Luwero, Masindi, Kamuli, Mbale, Kisoro and Arua. The team visited Bishop Asiili HC III (Catholic Faith founded), Luwero HC IV and Kiwoko hospital (Anglican Faith founded) in Luwero district; Lwanjusi HC III, Busiu HC IV and Bududa Hospital in Mbale district; Balawoli HC III, Nankandulo HC IV and Kamuli Mission Hospital (Catholic faith founded) in Kamuli District; Muramba HC III, Chahafi HC IV and Mutorele hospital (Catholic faith founded) in Kisoro District; Ikoba HC III, Bwijanga HC IV and Masindi Hospital in Masindi District; Oli HC III, Adumi HC IV and Arua Regional Referral Hospital in Arua district.

The field interviews were conducted with health workers from Health Centre IIIs, Health Centre IVs and the district hospitals. The areas of interest were those that had a direct bearing on the services needed by pregnant mothers, beginning with antenatal care and

continuing through delivery to postpartum care. The consultants held interviews with the Directors of Health Services of the said districts, Medical Superintendents and the staff of the departments that deal directly with pregnant mothers.

Other sources of data include:

National maternal and newborn clinical management guidelines:
The Reproductive Health Division 5-year strategic framework (2000-2004), the National Policy Guidelines and service standards for reproductive health services, May 2001 were used.

National salary cost information:
Circular Standing Instruction No 2 of 2002 and salary structure for 2002/03 Financial years from the Ministry of Public Service were used. It contains salary scales of all Government workers.

National drug and supply costs:
The prices quoted by the Joint Medical Stores (JMS) catalogue and Price Indicator 2003, a church-owned drug store in Kampala, has been used in the model. The prices in the National Medical Store were lower than those of the JMS. The prices in the Private For Profit sub-sector (PFP) were also higher than those of JMS. However, prices of JMS are most indicative of the drug prices in Uganda.

Demographic and infrastructure information:
This was obtained from the National Demographic Health Survey 2001/2 (UDHS) and the recent Uganda Population and Housing Census (2002) results. The infrastructure information was extracted from the Health Sector Infrastructure Plan, and the MoH Health Facility Inventory 2003.

Epidemiological information and incidence data: This was largely obtained from the National Referral Hospital, Mulago.

Family planning and method mix information: These data were obtained from the National Demographic Health Survey 2001/2 (UDHS) and was supplemented by information from the health facilities visited. More information was obtained from the Reproductive Health Division of Ministry of Health.

As part of the data validation exercise and model development, a one-day workshop was convened to disseminate the Safe Motherhood Model and a newly created integrated costing component. The design and development of the model, the country data collected, preliminary analysis, policy implications and the way forward were shared at the workshop. Furthermore the workshop explored the possibility of using the model at the national and district levels for resource allocation, planning and advocacy. The participants were drawn from key stake holders (donors and government officials) namely: Ministry of Health, Population Secretariat, United States Agency for International Development (USAID), Department for International Development (DfiD), Danish Development Agency (DANIDA), World Health Organization, UNICEF, Ministry of Finance, Planning and Economic Development, Ministry of Local Government, District Directors of Health Services, District Population Officers and Private Provider Organizations. The consultants, the Head of Reproductive Health in the Ministry of Health, the Director of the Policy Project Uganda and the Director of the Population Secretariat facilitated the workshop. The model was appreciated as a very rational and practical approach to planning and resource allocation. In addition, at this workshop, a select group of country experts was identified and given the task to work on ideal standards for the country in another half day workshop.

There are some limitations of the data collection methodology, including:

- Insecurity in some parts of the country, especially the North Eastern districts, led the team to shift earlier plans, and go to Kamuli district instead of Lira district.
- Lack of supplies at some facilities limits the service provision by service levels.
- Allocating time spent on each aspect of service is not an easy task because of the integrated service delivery in health facilities.
- Absence of national data on particular aspects of interventions such as management of syphilis and other STDs, severe anemia, incomplete abortion,

eclampsia, post partum hemorrhage, obstructed labor and puerperal sepsis in pregnancy led to the use of data from Mulago Hospital, the National Referral hospital as a proxy.

DISCUSSION OF MBP FINDINGS

Number of clients

Results presented in Figure 1 indicate that antenatal care is the intervention with the largest number of clients, almost 682,000 per year. This is followed by women undergoing normal delivery care (422,000), while interventions for both family planning and postpartum care service about 300,000 women per year. The lowest numbers of clients are associated with interventions that are infrequent, such as eclampsia (12,600) and obstructed labour (40,000).

Interestingly, Figure 2 shows that hospitals are being utilized for routine care quite frequently, despite the large numbers of Health Centre IIIs (789) and IVs (159) as compared to hospitals (105). Hospitals are providing the most normal delivery care, compared to Health Centre III and IV, and are providing more antenatal care and family planning services than Health Centre IV. This can be explained by the low levels of functionality of Health Centre IIIs and IVs in providing basic health services.

Direct cost per client

Overall, direct costs per client for antenatal care are similar across the three facility levels, as shown in Figure 3, ranging between $6 and $7 for most series. However, the direct cost per client for abortion complications is highest at the hospital level ($103.96), compared to the Health Centre IV ($7.48) and Health Centre III ($3.56), as most abortion complications are referred to and managed at hospitals. Other interventions which are more expensive at the hospital level (severe anaemia, eclampsia, haemorrhage, etc) are more expensive because patients are stabilized at the lower levels, and then referred to hospital. The direct cost per client for STD management does not vary much among the

service delivery levels, as Uganda uses the syndromic management approach which is fairly uniform across levels. However, the cost management of syphilis varies by 200% between the health centers and hospital because of availability of syphilis lab tests. This has implications in budgeting for laboratory services, which are considered less here.

Total cost by intervention

The highest total cost by facility level is, of course, at the hospital level, with over $24 million in expenditures. Health Centre IIIs expend the next greatest amount, at about $5.8 million, and Health Centre IVs expend about $3.8 million, for a total expenditure across all three levels of about $33.8 million. Figure 4 shows the total expenditure by intervention, that is, expenditure including direct, recurrent, and capital costs. The greatest amount is spent on those interventions where the cost per client is quite high, such as treatment of abortion complications and haemorrhage. Antenatal care, however, is in third place, with total expenditures of over $6 million.

Total cost by input

By far the greatest expenditure for total cost by input is for drugs, at approximately $14.5 million across all levels of service delivery, as seen in Figure 5. Personnel and consumable supplies each account for about $5 million, while fixed expenses such as facilities, support salaries, and maintenance and utility account for the next level of expenses, at about $1.5-2 million each.

THE SAFE MOTHERHOOD MODEL

When the MBP is linked to the Safe Motherhood model, the amount of current total expenditures as measured by the data collection effort, including support functions such as policy, monitoring, general training, and health promotion, is about $35 million, roughly the amount that the Uganda national health budget shows. As noted before, the SM model assumes that the current level of expenditure is directly related to the current level of the MNPI scores, which, along with various socioeconomic variables, in turn predicts the current MMR of 505.

The next step was to incorporate various 'ideal' standards of care to calculate what would be an 'ideal' level of expenditure for the Uganda Safe Motherhood Programme, and to examine what the impact of increasing expenditures to that level would be. Some of the increased standards of care that the Working Party for Ideal Standards of Care decided upon are:

Antenatal care: The current practice is that the mothers (92%) attend antenatal care one to four times per pregnancy for all health facility levels. However, there is a need to improve the level of services to attain the recommended WHO (ideal) standards. In order to attain the desired standards, all women should have 4 or more visits of at least 20 minutes each, with multivitamins, iron/folate supplements, two tetanus injections, and various lab test. This will involve increasing the health facilities, health facility staff and staff remuneration. The resource implications of attaining these standards for each level of health facility can be calculated automatically by the model.

Anaemia: Currently, almost all of health centres III and IV do not perform haemoglobin tests or manage severe cases of anaemia. Health centres should be able to perform haemoglobin tests and manage less severe cases, where Hb>7g/dl. Women should also be treated presumptively for malaria and hookworm.

Abortion complications: About half of the cases should be handled at the health centre level, and health centres should be able to perform both Dilation and Curettage (D&C) and Manual Vacuum Aspirations (MVA).

Eclampsia: Health centres should be able to stabilize cases, and then all should receive emergency transport accompanied by a midwife.

Family planning: Here, the standard of care did not need much improvement, but it was assumed that the ideal expenditure would result in a CPR that would eliminate all unwanted pregnancies.

Haemorrhage: Health centres should be able to treat for shock and then use emergency transport for referral.

Normal delivery: Again, the standard of care here did not require much change, but the ideal percentage of attended deliveries increased from 37% to 100%.

Obstructed labour: The only addition to the current standard of care was emergency transport and communications.

Postpartum care: Women should receive 2 visits, one after 7 days and the other after 6 weeks.

Sepsis: Emergency transport in 10% of the cases.

STD treatments: Partners are to be treated.

There were other infrastructure and related issues that the Working Party emphasized, such as that Health Centre IVs should become fully operational, including having lighting and power sources, operating theatres, complete equipment and consumables, running water, transport and communication facilities, and other sanitation issues such as placenta pits and women's latrines and bathrooms.

When these changes were input into the MBP, this resulted in an overall expenditure level of about $73 million, a resource gap of about $39 million. The SM model suggests that, if the program were fully funded, the MMR in Uganda would decline from its current level of 505 to 86 (see Figure 6). Lowering the MMR beyond this would need interventions related to socio-economic factors (largely female secondary education and income per capita). This implies that the health sector could mobilize more resources and look at various combinations of alternative interventions related to policy and access in order to reduce the current level of MMR.

The last two figures tell an interesting story about how to effectively allocate resources. Figure 7 reflects what the result would be of increasing each line item of the Safe Motherhood program by 50%, resulting in an overall increase of 50%, to a level of about $52 million. Figure 8 shows the result of increasing each of the line items halfway to their 'ideal' level, which is sometimes greater than the amount in Figure 7 (such as for antenatal care), and sometimes is less (as in treatment for haemorrhage). This increase results in an overall expenditure level similar to that of Figure 7, of about $54 million. Interestingly, however, the impact of the two allocations is quite different. In Figure 7, the model calculates that the MMR is reduced to 106, while the MMR is reduced to only 247 in Figure 8. Thus the allocation among line items has an important impact on the overall MMR.

POLICY IMPLICATIONS AND APPLICABILITY OF THE MODEL

The health sector could use the model to prioritize a series of interventions that produce the greatest impact on MMR. For example increase in family planning has greater impact on MMR than an increase in funding of antenatal care (ANC). When family planning is fully funded, MMR could be reduced by 106 points, while fully funding ANC would reduce MMR by only 34 points. Further optimal funding, where 90% of births are attended by skilled attendants, would reduce MMR by 11 points.

The model could inform the planning process at various levels on priority interventions especially at District and Hospital levels. Policy makers could use the model to decide on what level of MMR is achievable at particular levels of funding given other inputs in the Safe Motherhood program. Cross-country level comparisons can be worked out when the model is applied to different countries, to generate inter-country lessons, which can then be shared.

The model is useful as an evaluation and monitoring tool especially for working out the expected level of MMR given a certain level of inputs and settings, under various program combinations.

In particular, the model can be used as an instrument to lobby for resources and specified interventions especially to government and donor agencies given that the expected impact can be estimated.

NEXT STEPS

A number of next steps are possible, both for Uganda specifically and in general. Uganda plans to introduce the model to all the districts and hospitals throughout the country on a step-by-step basis. It plans to bring together a series of groups of district staff to be introduced to the model with guidance from the national teams.

The model is also going to be used by the health sector at the national level in calculating the required resource inputs to achieve an MMR of 365/100,000, which is the level targeted by 2004/5 in the current Health Sector Strategic Plan (HSSP). Furthermore it is anticipated that the model will inform the costing exercise of the second phase of the HSSP for the period 2005/6-2010/11.

Finally, at a more global level, countries that have collected country-specific data and are working on the model could constitute an inter-country working party and further fine-tune the model and the process of its application.

Figure 1

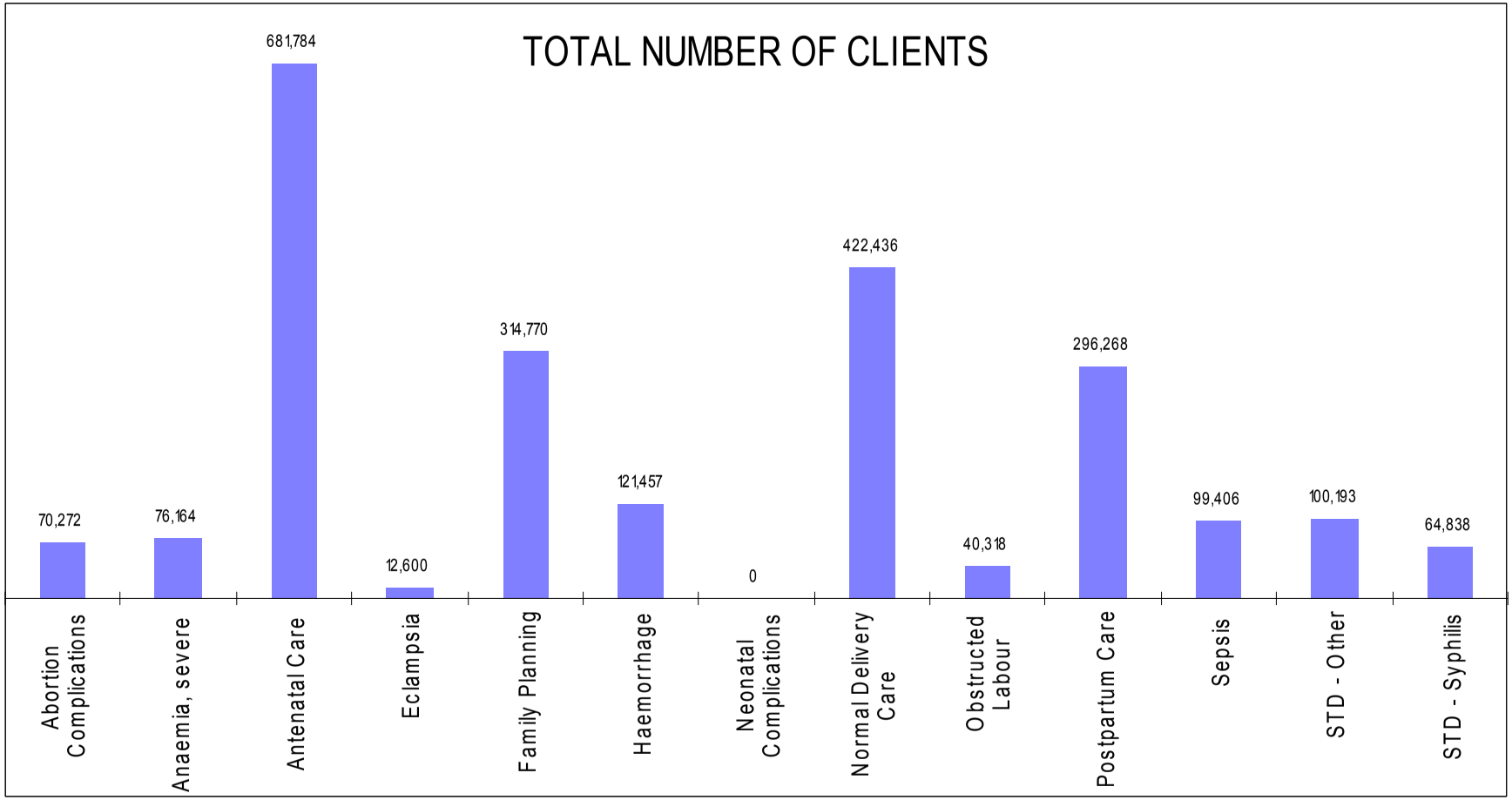

TOTAL NUMBER OF CLIENTS
70,272
76,164
681,784
12,600
314,770
121,457
0
422,436
40,318
296,268
99,406
100,193
64,838
Abortion Complications
Anaemia, severe
Antenatal Care
Eclampsia
Family Planning
Haemorrhage
Neonatal Complications
Normal Delivery Care
Obstructed Labour
Postpartum Care
Sepsis
STD - Other
STD - Syphilis

Figure 2

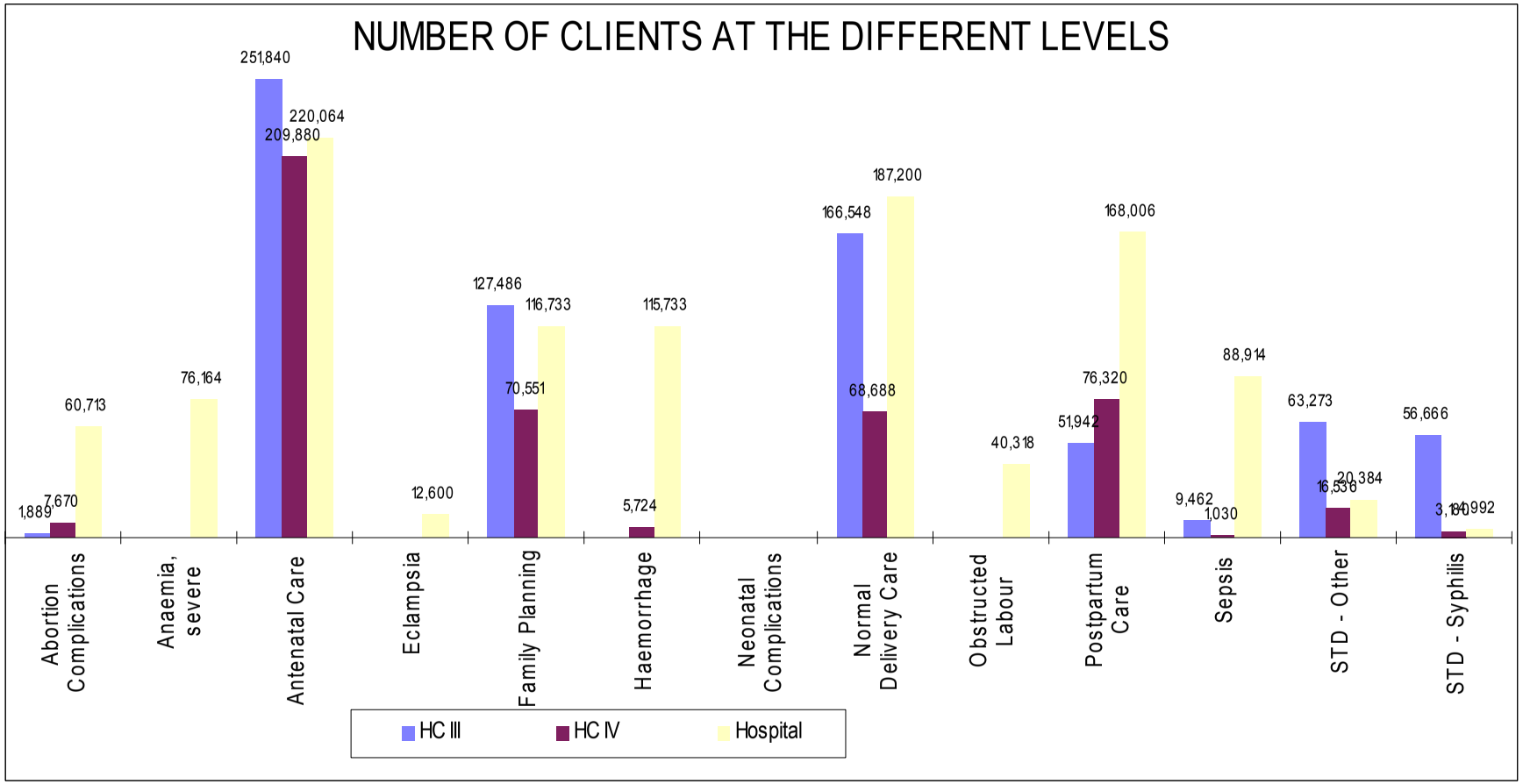

NUMBER OF CLIENTS AT THE DIFFERENT LEVELS
1,889
7,670
60,713
76,164
251,840
209,880
220,064
12,600
127,486
70,551
116,733
5,724
115,733
166,548
68,688
187,200
40,318
51,942
76,320
168,006
9,462
1030
88,914
63,273
16,536
20,384
56,666
3,180
10992
Abortion Complications
Anaemia, severe
Antenatal Care
Eclampsia
Family Planning
Haemorrhage
Neonatal Complications
Normal Delivery Care
Obstructed Labour
Postpartum Care
Sepsis
STD - Other
STD - Syphilis
HC III
HC IV
Hospital

Figure 3

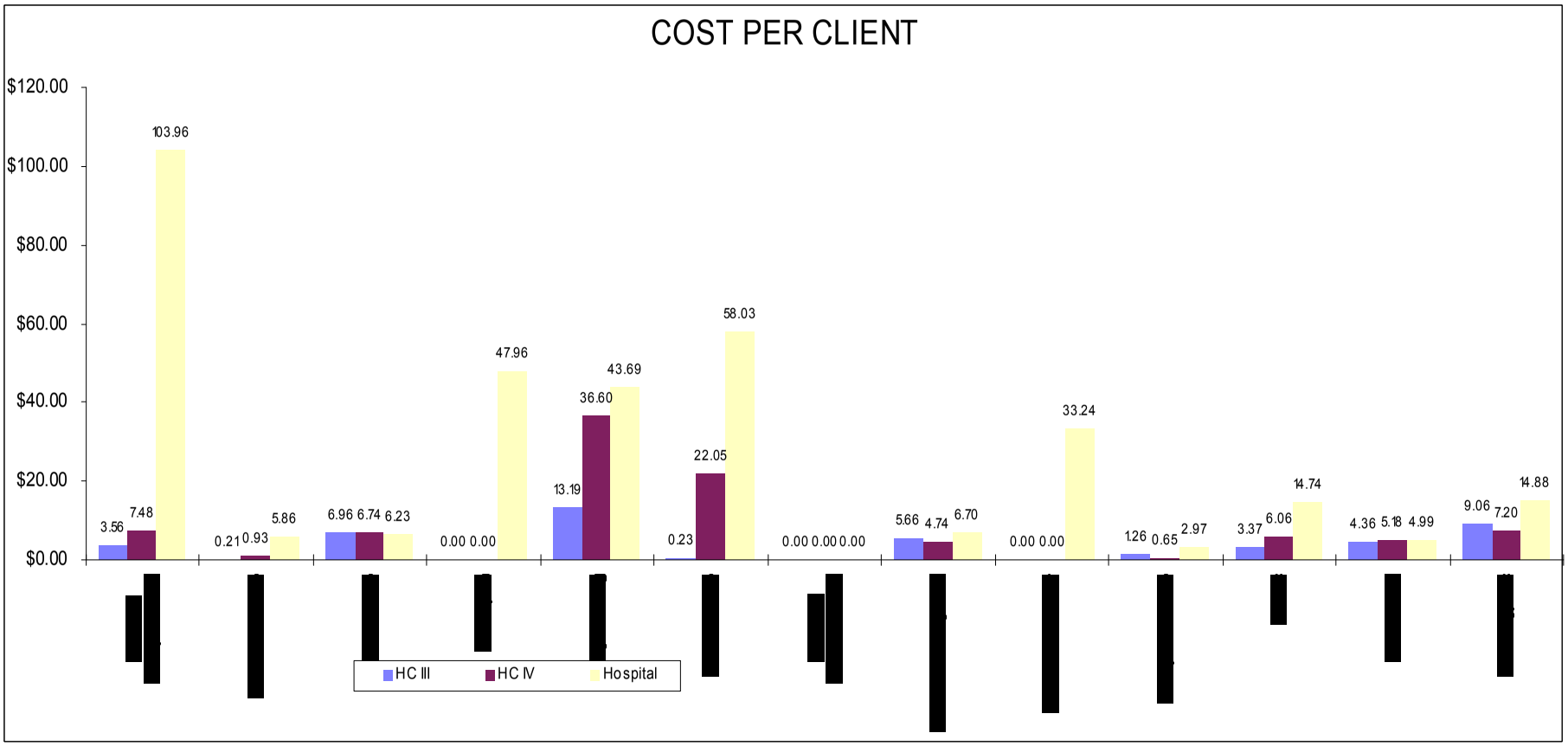

COST PER CLIENT
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
3.56
7.48
103.96
0.21
0.93
5.86
6.96
6.74
6.23
0.00
0.00
47.96
13.19
36.60
43.69
0.23
22.05
58.03
0.00
0.00
0.00
5.66
4.74
6.70
0.00
0.00
33.24
1.26
0.65
2.97
3.37
6.06
14.74
4.36
5.18
4.99
9.06
7.20
14.88
HC III
HC IV
Hospital

Figure 4

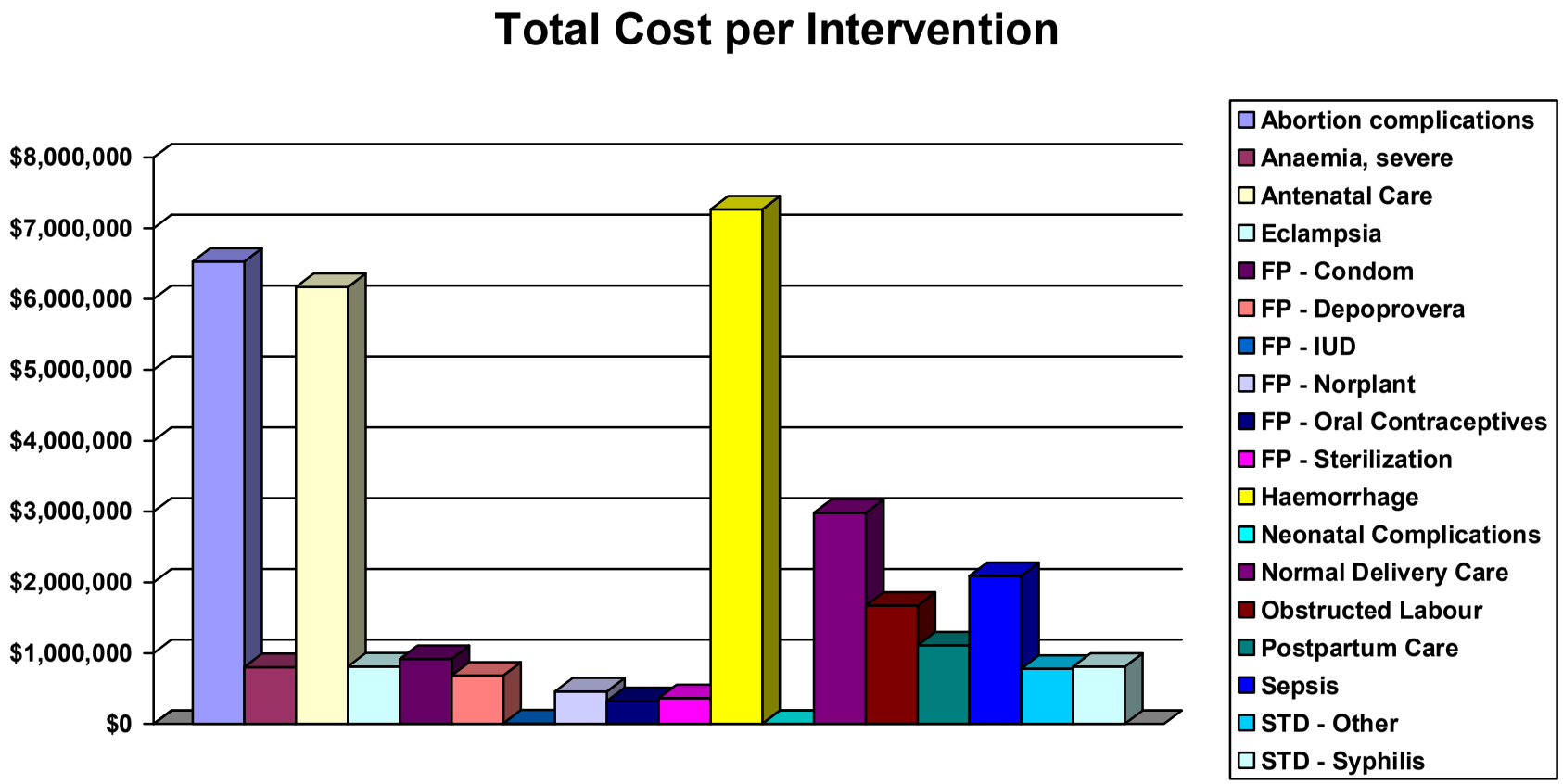

Total Cost per Intervention
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
Abortion complications
Anaemia, severe
Antenatal Care
Eclampsia
FP - Condom
FP - Depoprovera
FP - IUD
FP - Norplant
FP - Oral Contraceptives
FP - Sterilization
Haemorrhage
Neonatal Complications
Normal Delivery Care
Obstructed Labour
Postpartum Care
Sepsis
STD - Other
STD - Syphilis

Figure 5

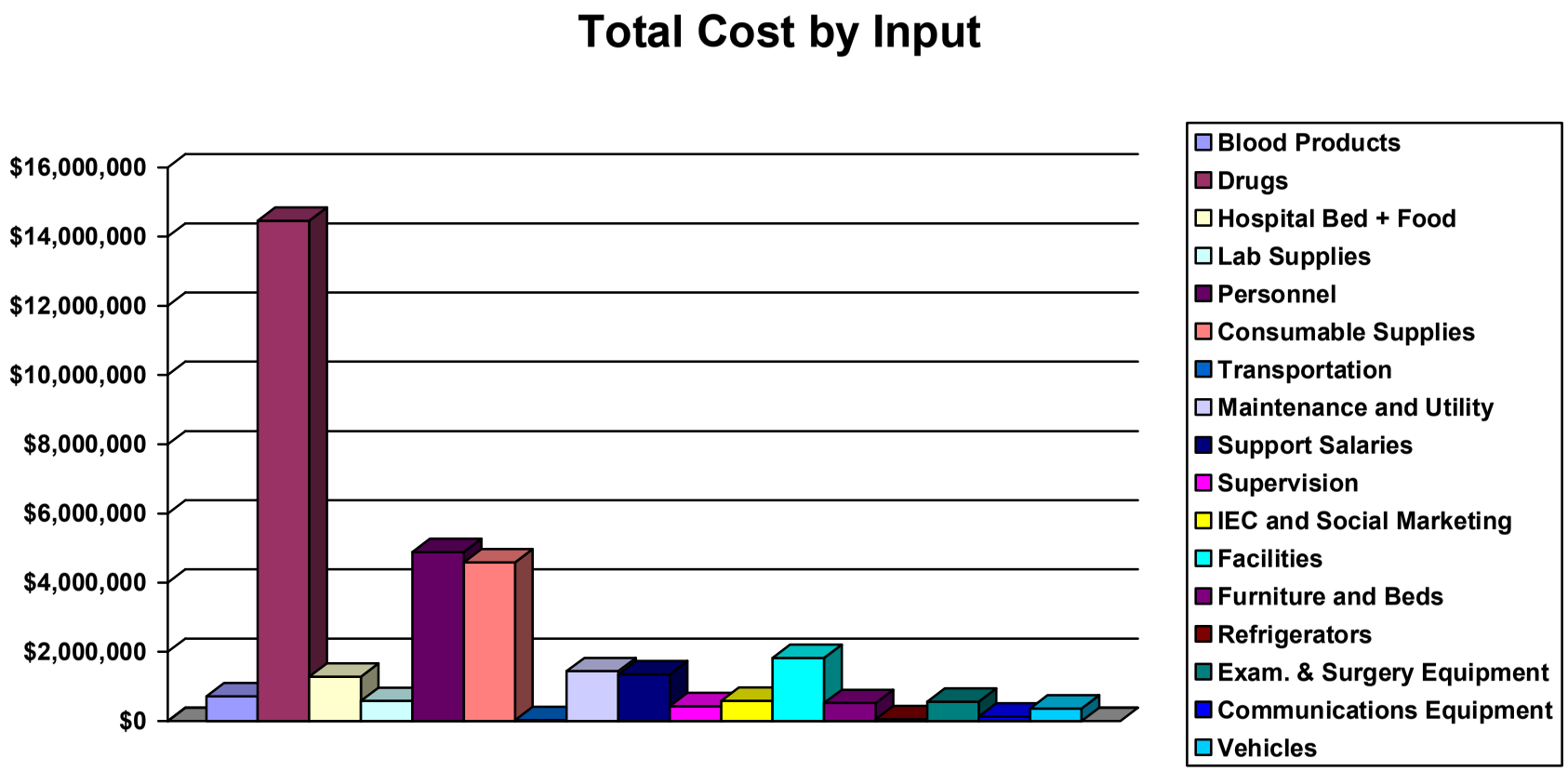

Total Cost by Input
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
Blood Products
Drugs
Hospital Bed + Food
Lab Supplies
Personnel
Consumable Supplies
Transportation
Maintenance and Utility
Support Salaries
Supervision
IEC and Social Marketing
Facilities
Furniture and Beds
Refrigerators
Exam. & Surgery Equipment
Communications Equipment
Vehicles

Figure 6

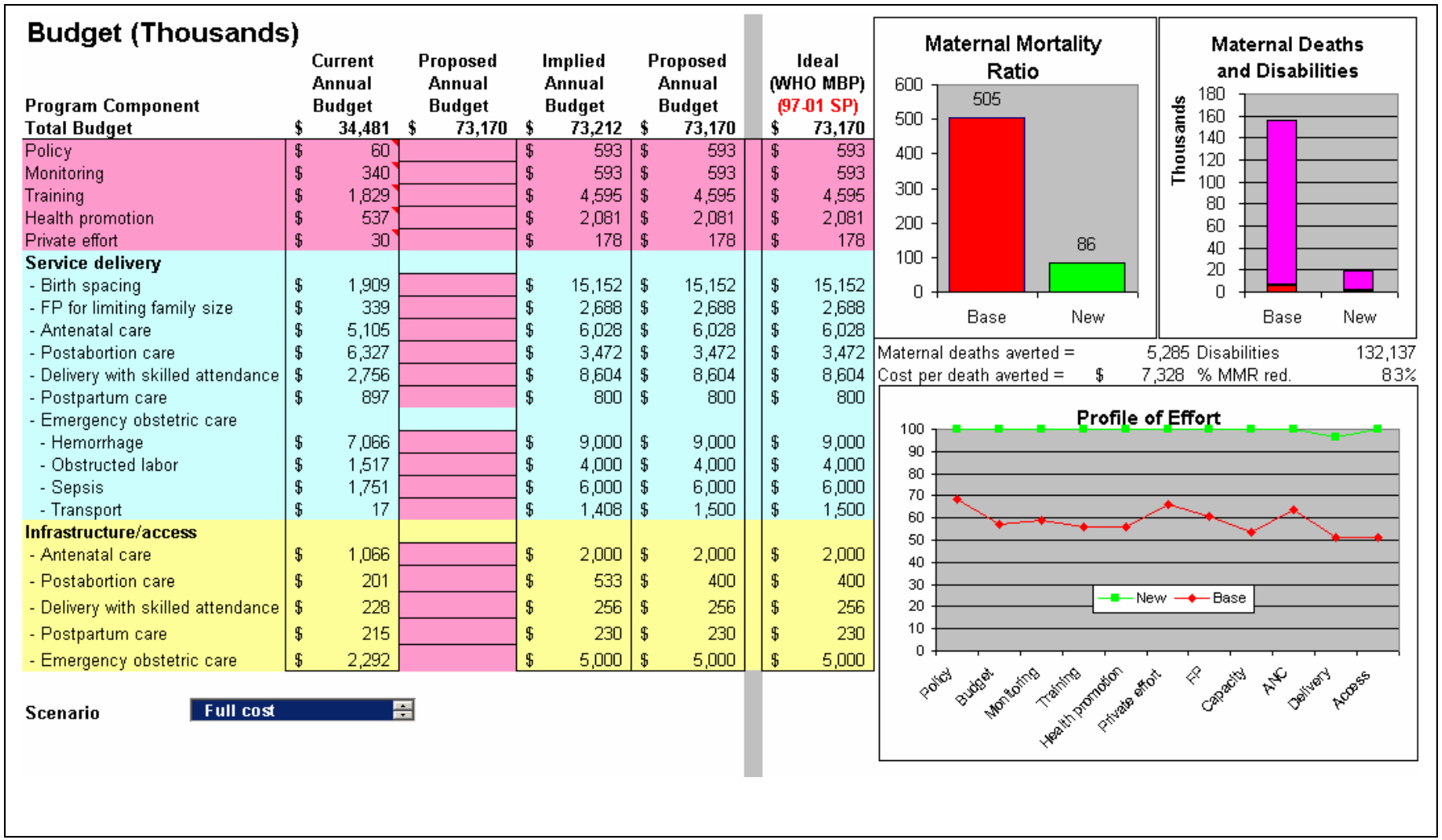
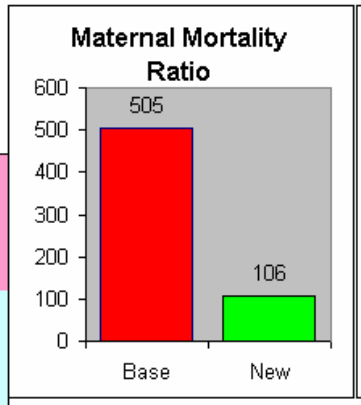

Budget (Thousands)
Program Component
Total Budget
Current Annual Budget
Proposed Annual Budget
Implied Annual Budget
Proposed Annual Budget
Ideal (WHO MBP) (97-01 SP)
$ 34,481
$ 73,170
$ 73,212
$ 73,170
$ 73,170
Policy $ 60 $ 593 $ 593 $ 593
Monitoring $ 340 $ 593 $ 593 $ 593
Training $ 1,829 $ 4,595 $ 4,595 $ 4,595
Health promotion $ 537 $ 2,081 $ 2,081 $ 2,081
Private effort $ 30 $ 178 $ 178 $ 178
Service delivery
- Birth spacing $ 1,909 $ 15,152 $ 15,152 $ 15,152
- FP for limiting family size $ 339 $ 2,688 $ 2,688 $ 2,688
- Antenatal care $ 5,105 $ 6,028 $ 6,028 $ 6,028
- Postabortion care $ 6,327 $ 3,472 $ 3,472 $ 3,472
- Delivery with skilled attendance $ 2,756 $ 8,604 $ 8,604 $ 8,604
- Postpartum care $ 897 $ 800 $ 800 $ 800
- Emergency obstetric care
- Hemorrhage $ 7,066 $ 9,000 $ 9,000 $ 9,000
- Obstructed labor $ 1,517 $ 4,000 $ 4,000 $ 4,000
- Sepsis $ 1,751 $ 6,000 $ 6,000 $ 6,000
- Transport $ 17 $ 1,408 $ 1,500 $ 1,500
Infrastructure/access
- Antenatal care $ 1,066 $ 2,000 $ 2,000 $ 2,000
- Postabortion care $ 201 $ 533 $ 400 $ 400
- Delivery with skilled attendance $ 228 $ 256 $ 256 $ 256
- Postpartum care $ 215 $ 230 $ 230 $ 230
- Emergency obstetric care $ 2,292 $ 5,000 $ 5,000 $ 5,000
Scenario
Full cost
Maternal Mortality Ratio
600
500
400
300
200
100
0
505
86
Base
New
Maternal Deaths and Disabilities
Thousands
180
160
140
120
100
80
60
40
20
0
Base
New
Maternal deaths averted = 5,285 Disabilities 132,137
Cost per death averted = $ 7,328 % MMR red. 83%
Profile of Effort
100
90
80
70
60
50
40
30
20
10
0
New
Base
Policy
Budget
Monitoring
Training
Health promotion
Private effort
FP
Capacity
ANC
Delivery
Access

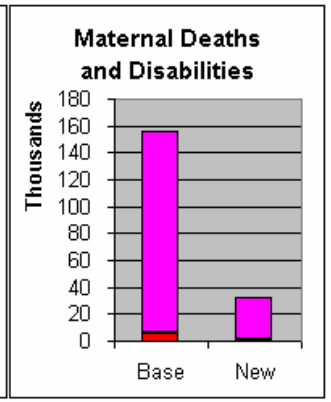
Figure 7

Budget (Thousands)

Program Component	Current Annual Budget	Proposed Annual Budget	Implied Annual Budget	Proposed Annual Budget	Ideal (WHO MBP) (97-01 SP)
Total Budget	$ 34,481	$ 51,721	$ 51,721	$ 51,721	$ 73,170
Policy	$ 60	$ 90	$ 90	$ 90	$ 593
Monitoring	$ 340	$ 510	$ 510	$ 510	$ 593
Training	$ 1,829	$ 2,743	$ 2,743	$ 2,743	$ 4,595
Health promotion	$ 537	$ 806	$ 806	$ 806	$ 2,081
Private effort	$ 30	$ 45	$ 45	$ 45	$ 178
Service delivery					
- Birth spacing	$ 1,909	$ 2,863	$ 2,863	$ 2,863	$ 15,152
- FP for limiting family size	$ 339	$ 508	$ 508	$ 508	$ 2,688
- Antenatal care	$ 5,105	$ 7,657	$ 7,657	$ 7,657	$ 6,028
- Postabortion care	$ 6,327	$ 9,490	$ 9,490	$ 9,490	$ 3,472
- Delivery with skilled attendance	$ 2,756	$ 4,134	$ 4,134	$ 4,134	$ 8,604
- Postpartum care	$ 897	$ 1,346	$ 1,346	$ 1,346	$ 800
- Emergency obstetric care					
- Hemorrhage	$ 7,066	$ 10,599	$ 10,599	$ 10,599	$ 9,000
- Obstructed labor	$ 1,517	$ 2,276	$ 2,276	$ 2,276	$ 4,000
- Sepsis	$ 1,751	$ 2,626	$ 2,626	$ 2,626	$ 6,000
- Transport	$ 17	$ 25	$ 25	$ 25	$ 1,500
Infrastructure/access					
- Antenatal care	$ 1,066	$ 1,599	$ 1,599	$ 1,599	$ 2,000
- Postabortion care	$ 201	$ 302	$ 302	$ 302	$ 400
- Delivery with skilled attendance	$ 228	$ 343	$ 343	$ 343	$ 256
- Postpartum care	$ 215	$ 322	$ 322	$ 322	$ 230
- Emergency obstetric care	$ 2,292	$ 3,438	$ 3,438	$ 3,438	$ 5,000

Scenario: None





Maternal deaths averted = 4,779 Disabilities 119,485
Cost per death averted = $ 3,607 % MMR red. 79%

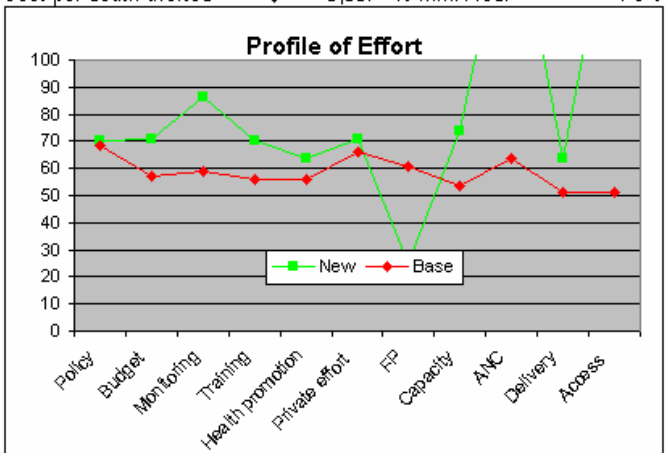
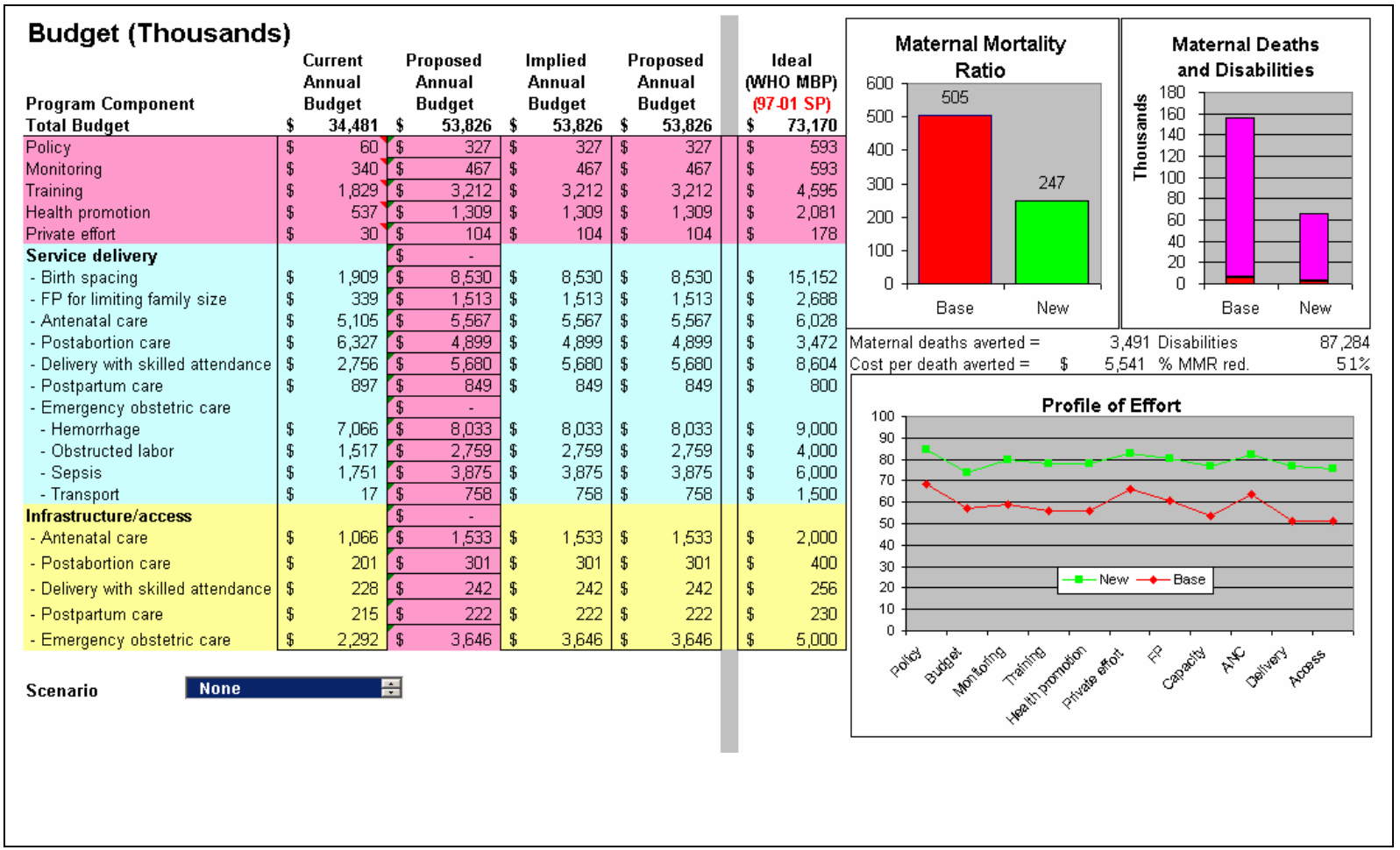


Figure 8


Budget (Thousands)
Program Component
Total Budget $ 34,481 $ 53,826 $ 53,826 $ 53,826 $ 73,170
Policy $ 60 $ 327 $ 327 $ 327 $ 593
Monitoring $ 340 $ 467 $ 467 $ 467 $ 593
Training $ 1,829 $ 3,212 $ 3,212 $ 3,212 $ 4,595
Health promotion $ 537 $ 1,309 $ 1,309 $ 1,309 $ 2,081
Private effort $ 30 $ 104 $ 104 $ 104 $ 178
Service delivery $ -
- Birth spacing $ 1,909 $ 8,530 $ 8,530 $ 8,530 $ 15,152
- FP for limiting family size $ 339 $ 1,513 $ 1,513 $ 1,513 $ 2,688
- Antenatal care $ 5,105 $ 5,567 $ 5,567 $ 5,567 $ 6,028
- Postabortion care $ 6,327 $ 4,899 $ 4,899 $ 4,899 $ 3,472
- Delivery with skilled attendance $ 2,756 $ 5,680 $ 5,680 $ 5,680 $ 8,604
- Postpartum care $ 897 $ 849 $ 849 $ 849 $ 800
- Emergency obstetric care $ -
- Hemorrhage $ 7,066 $ 8,033 $ 8,033 $ 8,033 $ 9,000
- Obstructed labor $ 1,517 $ 2,759 $ 2,759 $ 2,759 $ 4,000
- Sepsis $ 1,751 $ 3,875 $ 3,875 $ 3,875 $ 6,000
- Transport $ 17 $ 758 $ 758 $ 758 $ 1,500
Infrastructure/access $ -
- Antenatal care $ 1,066 $ 1,533 $ 1,533 $ 1,533 $ 2,000
- Postabortion care $ 201 $ 301 $ 301 $ 301 $ 400
- Delivery with skilled attendance $ 228 $ 242 $ 242 $ 242 $ 256
- Postpartum care $ 215 $ 222 $ 222 $ 222 $ 230
- Emergency obstetric care $ 2,292 $ 3,646 $ 3,646 $ 3,646 $ 5,000
Current Annual Budget
Proposed Annual Budget
Implied Annual Budget
Proposed Annual Budget
Ideal (WHO MBP) (97-01 SP)
Scenario
None
Maternal Mortality Ratio
600
500
400
300
200
100
0
505
247
Base
New
Maternal Deaths and Disabilities
Thousands
180
160
140
120
100
80
60
40
20
0
Base
New
Maternal deaths averted = 3,491 Disabilities 87,284
Cost per death averted = $ 5,541 % MMR red. 51%
Profile of Effort
100
90
80
70
60
50
40
30
20
10
0
New
Base
Policy
Budget
Monitoring
Training
Health promotion
Private effort
FP
Capacity
ANC
Delivery
Access