



Unclear unit costs of collection, limits availability of blood in health facilities

Overview

Blood is a vital health care resource used in a number of clinical services worldwide. According to the Uganda Blood Transfusion Services Strategic Plan (2010-2015), it is very key in prevention and treatment of anemia, reduction of mortality among women and children, prevention of HIV/AIDS, attendance to accidents and emergencies among others.

Over the years, budget allocations to blood provision have been increasing in both nominal and real terms. However, the change in targets is minimal and the country continues to suffer blood shortages with over 2,000 deaths annually over the years. A total of 10,000 lives have been lost due to anemia in the last four years (2014/15 to 2017/18). Some of the deaths are preventable given availability of blood and timely transfusions.

This policy brief highlights trends and linkage between annual budgetary allocations and safe blood provision targets in relation to amounts of units of blood collected, tested and issued to health facilities. The scope of the analysis covers 11 years from FY 2007/08 to FY 2017/18.

Introduction

The Uganda Blood Transfusion Services (UBTS) was established as an autonomous institution in 2003. It is mandated to make available safe and adequate quantities of blood and blood products to all hospitals and Health Center IVs for the management of patients who require transfusion services throughout the country.

The second core objective of the UBTS is *to increase the annual blood collection necessary*

Key Issues

- Units of blood collected are not commensurate to funds allocated to UBTS.
- The unit cost of blood production remains unclear to both UBTS and relevant stakeholders like Ministry of Finance, Planning and Economic Development (MFPED), and Ministry of Health (MoH). This has greatly constrained effective planning and budgeting.
- Only 2 million units of blood were collected and issued in the last 11 years against 3.6 million recommended by the World Health Organisation (WHO).

to meet the transfusion needs for all patients in the country.

Funding towards blood provision has steadily increased, cumulatively, the UBTS was allocated total of Ug shs 156billion in nominal and Ug shs 146billion in real terms in last the last 11 years (FY 2007/08-2017-18)¹. So 95% of the budget was released, while 93% was spent.

¹ Inclusive of donor allocations and National Medical Stores (NMS)



Trends in annual budgetary allocations against blood provision programme targets

It was established that an increase in budgetary allocations does not necessarily translate into a significant increase in set targets of subsequent financial years (FYs). Table I indicates that as funds increased, the number of blood units to be collected and issued (targets) dropped or remained the same save from FY 2008/09 and 2011/12. FY 2017/18 had the biggest drop of over 40,145 blood units, yet the budget increased by Ug shs 1.2bn over and above the allocation of the previous year (2016/17).

There was a Ug shs 6.1bn increase in the budget for FY 2013/14, however the target of the amount of blood collected and issued² remained the same as that of FY 2012/13. The same happened in FY 2014/15, 2015/16 and 2016/17 yet safe blood provision budgets increased by over Ug shs 783m, Ug shs 779m and Ug shs 4.8bn respectively. In consideration of inflation, the relationship between the two variables remained the same. A change in prices did not affect targets of FY 2014/15, 2015/16 and 2016/17.

Although headline inflation moved up to 24%, there was a notable increase of 48,000 units realized between 2010/11 to 2011/12 with an increase of Ug shs 2.16bn. This indicates that a positive or negative change in the budget did not trigger a significant change in planning and budgeting for blood provision targets. Detailed information regarding changes in budgets and targets is indicated in table 1.

Table 1: Trends in blood collection targets against budgetary allocations (Ug shs-Bn)

FY	Budget (GoU-UBTS)	NMS Budget	Donor Budget	Total Budget	Total in Budget in Real Terms (Inflation)	Change in Budget in Nominal Terms	Change in budget-Real Terms	Planned Units of Blood to be collected, tested and issued	Changes in Target	Units of blood collected, tested and issued	Variance between planned and achieved targets
2007/08	1.953	**	**	1.953	1.820	**	-0.133	150,000		132,226	-17,774
2008/09	2.291	**	**	2.291	2.010	0.34	-0.281	187,000	37,000	169,250	-17,750
2009/10	3.504	**	5.71	9.21	8.419	6.92	-0.791	187,000	0	171,620	-15,380
2010/11	3.346	**	7.39	10.739	10.084	1.53	-0.655	200,000	13,000	184,899	-15,101
2011/12	4.849	1.000	7.05	12.899	10.445	2.16	-2.454	248,897	48,897	203,819	-45,078
2012/13	3.721	2.544	5	11.265	10.668	-1.63	-0.597	242,000	-6,897	203,286	-38,714
2013/14	4.104	7.88	5.46	17.444	16.566	6.18	-0.878	242,000	0	210,505	-31,495
2014/15	6.807	7.88	3.54	18.227	17.713	0.78	-0.514	254,100	12,100	235,407	-18,693
2015/16	8.646	7.88	2.48	19.006	17.829	0.78	-1.177	266,805	12,705	247,711	-19,094
2016/17	8.935	14.88	0	23.815	22.531	4.81	-1.284	280,145	12,705	239,260	-40,885
2017/18	12.900	16	0	28.900	27.950	1.91	-0.846	240,000	-40,145	209,633	-30,367
Total	61.056	58.06	36.6	155.749	146.033		-9.611	2,497,947		2,207,616	

Source: Annual Budget Performance Reports, UBTS System Data, **IFMS, BMAU Reports. * Information not available

² It was established that the UBTS issues 100% of blood processed that passes all recommended tests to various health facilities.



The Value for Money Audit Report (March 2013) by the Office of the Auditor General indicated that UBTS continued to rely on the available blood collection teams to set targets. In FY2011/12, there were 20 teams and with a monthly target of 990 units per team, only 237,600 units were targeted for collection³.

In the same report, management noted that setting of targets was based on 10% increase of previous blood usage, and calculations based on hospital beds. Further analysis indicates that this is not followed. Set targets over the years do not add up to 10% increment based on use as noted by management. The country has been registering blood shortage across FYs.

Variances between planned targets and actual achievements were also registered with unspent balances of 5% on GoU released funds across years under review.

Linkage between allocations and blood provision programme targets

The actual unit cost of production/collection blood has remained unclear over the years. Apart from the testing algorithm which was costed at US\$ 29, the rest of the processes including collection remained unclearly defined and costed (*Annual Budget Monitoring Report FY2017/18*). This led to endless requests for supplementary funding towards blood collection.

The relationship between targets and budgets over the period under review indicate a weak link between the two variables. This leaves questions regarding planning and budgeting at the UBTS. According to the blood costing study 2017 done by UBTS, the cost of safe blood production was US\$ 33 in 1995. The same study noted that overall cost of production of one unit of whole blood at US\$ 39.35 per capita

(NMS supplies at US\$ 29 and collection at US\$ 10.35 dollars for collection) in 2015. This means the cost increased by only US\$ 6 in 20 years, yet according to Bank of Uganda (BoU) statistics, the dollar shot from Ug shs 965.86 in FY 1994/95, to Ug shs 3,404 in FY 2015/16.

In 2015/16, the Safe Blood Provision Programme under the UBTS was allocated Ug shs 19bn, 100% was released and 99% spent⁴. A total of 247,711 units were collected⁵. This means that the unit cost of production in real terms was Ug shs 71,975 (US\$ 20⁶)ⁱ and 76,702.29 (US\$ 21.3) in nominal terms.

Further analysis indicated that provisions to various budget lines have also been increasing. For example General Staff Salaries increased from Ug shs 1.1bn in 2007/08 to Ug shs 2.7bn in FY 2017/18. Fuel and lubricants increased from Ug shs 45m to Ug shs 904m, maintenance civil from Ug shs 5m to Ug shs 100m. Maintenance of equipment from Ug shs 57m in FY 2014/15 to Ug shs 100m in FY 2017/18. The GoU also contributed to construction of Moroto, Gulu and Mbarara Regional Blood Banks during the period under review.

These investments (both soft and hard ware), were made in anticipation of significant increments in blood provision targets over the years. These have been minimal as evidenced by limited or no changes in set targets.

Upon engagement with UBTS management during the FY 2017/18 annual monitoring by the Budget Monitoring and Accountability Unit (BMAU), on the above findings, the UBTS discredited the 2017

⁴ NMS spent Ug shs 11.3bn on blood processing, in excess of Ug shs 5.4bn. These funds were paid back to NMS in the subsequent FY (2016/17) forming part of their supplementary budget.

⁵ Including units collected from social responsibility campaigns.

⁶ At an exchange rate Ug shs 3,600.

³ A discrepancy between UBTS system data, and data from other sources like the Office of the Auditor General Report was noted.



Costing Study claiming that it was unrealistic. The UBTS administration noted that they were to undertake another study clearly defining the unit cost of blood collection and processing. By December 2018 (Mid 2018/19), no study had been commissioned.

A decline of 40,145 units of blood to be collected and issued in FY 2017/18 was noted (table 1), yet the programme was allocated Ug shs 29bn in nominal terms and Ug shs 28bn in real terms. These budgets were higher than the FY 2016/17 budgets of Ug shs 23.8bn and Ug shs 22.5bn respectively. This variance calls for establishment of a clear unit cost of blood collection.

Conclusion

A change in budgetary allocations (nominal or real terms) does not necessarily translate into a positive change in targets set as well as improvement in blood supplies in the country.

Changes in set targets have not been significant, on the other hand, there are variances between set targets and those achieved. This has partly contributed to blood shortages in the country. The cost of blood production, specifically the collection arm of the chain remains unclear leaving the link between the two variables weak.

Recommendations

- The UBTS should fast-track the Unit Costing Study on blood collection and processing to enable clear planning and budgeting.

- The Office of the Auditor General should audit UBTS' budget utilization with a view of establishing reasons behind inefficiencies in planning and budgeting at the entity.
- The UBTS should set and align their targets in relation to WHO guidelines (the units of blood collected should be equal to at least 1% of the population).

References

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