



**GOVERNMENT OF SIERRA LEONE
MINISTRY OF HEALTH AND SANITATION**

**NATIONAL STRATEGIC PLAN
FOR BLOOD SAFETY (REVISED)**

(2011 – 2014)

SEPTEMBER 2010

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ACRONYMS

BDRO	Blood Donor Recruitment Officer
DHMT	District Health Management Team
DMO	District medical officer
FRD	Family Replacement Donations
GOSL	Government of Sierra Leone
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HRHD	Human Resources for Health Development
MF	Ministry of Finance
MOHS	Ministry of Health and Sanitation
NBTC	National Blood Transfusion Centre
IEC	Information, Education and Communication
QMS	Quality Management System
NQAP	National Quality Assurance Programme
EQAS	External Quality Assessment
NBTS	National Blood Transfusion Services
PHU	Peripheral Health Unit
RBTC	Regional Blood Transfusion Centres
SLRCS	Sierra Leone Red Cross Society
SOPs	Standard Operating Procedures
SWOT	Strength, Weaknesses, Opportunity, Threats
TTIs	Transfusion transmissible infections
VNRBD	Voluntary Non-Remunerated Blood Donors

1.0 COUNTRY PROFILE

Sierra Leone is situated on the West Coast of Africa bordered to the North by the Republic of Guinea, to the East and south by Liberia and to the West by the Atlantic Ocean. It has an estimated population of 5.6 million people. It is divided into four administrative regions (North the largest, South, East and Western Area) and 14 districts with Freetown as its capital.

Since the mid 1980's Sierra Leone has undergone five military coups and a brutal armed conflict that lasted 10 years. An estimated 20,000 people were killed and thousands more injured or maimed; and over 2 million people were displaced including many skilled personnel who were exiled. Most of the infrastructure, including health facilities, was damaged or left unattended. The government is now focussed on rebuilding the infrastructure.

2.0 HEALTH PROFILE

Communicable diseases are the major contributors to the disease burden in the country. According to available data from the MOHS, Malaria, acute respiratory infections and Malnutrition are the main causes of morbidity in the general population over 5 years of age.

Maternal and child mortality continue to be unacceptably high. The government is currently focussing attention in reversing this trend by making health services accessible through the implementation of the FHSI.

The official sources indicate that the national sero-prevalence of HIV among adult population is 1.53 percent. And it does not differ significantly between males (1.5%) and females (1.6%). The highest prevalence among women is found within the age group of 20-24 year (2.0%) whereas the males between 35-39 years have the highest prevalence (3.5%). Prevalence in urban areas is higher 2.1% as compared to 1.3% in rural areas.

2.1 Organization and Management of the Health System

The management of health system is organized in a three-tier system:

The Central, the district and the community level:

- **Central level:** the central level is responsible for policy, strategic planning and formulation of guidelines; resources mobilization; supervision, monitoring and evaluation of health services. There are two main departments under the MOHS: the technical department under the Chief Medical Officer and the administrative department under the Permanent Secretary
- **District level:** the country is divided into 14 health districts. The District Health Management Team (DHMT), under the leadership of the District Medical Officer (DMO) is responsible for the implementation, monitoring and supervision of the health programmes in the district. The medical officer in charge of each hospital acts as chairman of the hospital management committee.
- **Community level:** the community level which includes peripheral health units (PHUs) and community health centres are responsible for provision of primary health care.

The MOHS has restructured and decentralised by granting autonomy to the districts, through the creation of District Health Boards with the hospitals operating under the Hospital Management Committees. There is increasing collaboration between Government and the private sector, including the private-for-profit. This is particularly important in the Western Area, which includes the capital city where there is concentration of private clinics. The government has put in place regulatory mechanisms to ensure that private health institutions conform to acceptable standards of practice.

2.2 Health Care Delivery System

The MOHS is still the major provider, delivering about 50% of health care services. The rest is being provided by NGOs and the private sector, which includes mission health services, the private-for-profit institutions and the traditional healers.

Sierra Leone has a total of 35 hospitals (7 tertiary and 28 secondary) managed either by the Government, NGOs or religious institutions. However, all but four of the tertiary care and almost one third of the secondary care institutions are concentrated in the Western Area. There is however a weak referral system between PHUs and the secondary and tertiary health care levels with recent efforts focused at addressing the issue.

3.0 SITUATION ANALYSIS

3.1 Organization and Management

Blood transfusion in Sierra Leone is mostly hospital based. The BTS Manager has been appointed and the blood policy launched in February 2006 is partially implemented. The National Blood Advisory Committee has been created and members appointed mainly from the MOHS and SLRCS but rarely meets. Specific budget line for blood transfusion activities has been approved but due to long and complicated administrative procedures the disbursement of funds is difficult. Some financial resources are also being provided by the Global Fund and WHO has provided equipment, vehicles and other supplies. The Blood Programme has initiated a cost recovery system and charges are Le 10,000 and Le 5,000 per unit of blood issued to the private and public sector hospitals respectively.

3.2 Human Resources

Presently the NBTS has a total of 17 staff members including the manager, 4 donor recruiters, 7 laboratory technicians and assistant technicians, 2 nurses, 1 data collection officer, and 2 drivers. Apart from the 3 regional donor recruiters and one nurse phlebotomist, the rest of the staff is located in the Western Area. The donor recruiters, data collection officer and drivers are employed on contract by the GFTAM.

3.3 Procurement

There is a central system for procurement of goods, in the Ministry of Health. All equipment, reagents and consumables for the NBTS are centrally procured. There are however weaknesses in quantification, specification and distribution systems resulting in stock-out of reagents and occasional purchase of inappropriate equipment.

3.4 Quality Management

Quality management is a broad term which encompasses both quality assurance and quality improvement, describing a program of evaluating the quality of services/care using a variety of

methodologies and techniques. The national quality management programme is yet to be fully implemented.

3.5 Blood Supply

The blood donation in Sierra Leone has increased from 10,306 units in 2004 to 14,155 units in 2006. Although there is an increase in annual donations, this is still very far from the recommended donation rate of 10 to 20 per 1000 population compared to 2.9 per 1000 in the country in 2006 (the average in African countries was 5.6 per 1,000 in 2004).

Ninety percent of blood donated is from family replacement donors and only 10% from voluntary blood donors. Blood collection is carried out in 25 hospitals among which 18 government hospitals, 1 military, 6 missionary and 1 private. To improve the current situation, 4 donor recruiters, one for the central level and 3 for the Regions have been recruited under the Global Funds. Sierra Leone Red Cross Society provides support to the Blood Programme by promoting voluntary blood donation.

3.6 Testing

Since 2005, with the support of Global Fund, the National Blood Programme is ensuring 100% screening of blood for the four major Transfusion Transmitted Infections (TTI's) using rapid assays.

HIV prevalence among blood donors has been decreasing in the last three years, from 4.09% in 2007 to 2.5% in 2010 though this is still higher than in general population (1.53%). During the same period, Hepatitis B Virus prevalence has increased from 6.04% to 4.82% and Hepatitis C Virus from 0.9% in 2007 to 1.25% in 2010. ABO and Rh grouping is being done on all donated blood, but in most districts compatibility testing is not performed before transfusion due to lack of a consistent supply of electricity.

3.7 Blood Processing, Storage and Distribution

Due to the non availability of equipment blood components are not prepared. With support from WHO and GFTAM all district hospitals now have cold storage facilities and cooler boxes for transportation of blood. The regional blood centres have also been provided, through WHO, extra storage capacity to facilitate them store enough blood for distribution to district hospitals.

3.8 Blood Utilisation

The Guidelines for the Appropriate Use of Blood was finalized in February 2006, and 28 doctors and 140 nurses have been trained on the guidelines. Hospital transfusion committees are yet to be established and whole blood is the only product transfused since component preparation has not started. Available data shows that the number of units transfused has grown from 14,274 in 2006 to 24,021 in 2009.

4.0 SWOT ANALYSIS

The SWOT analysis summarizes and evaluates the strengths, weaknesses, opportunities and threats/obstacles of the actual and future implementation of the blood transfusion activities in Sierra Leone.

The analysis is divided into two parts: the analysis of internal factors of the Sierra Leone Blood Transfusion Programme (strengths, weaknesses) and external factors (opportunities and threats/obstacles). This analysis is summarised below in tables 1 and 2:

Table 1: Internal Factors

INTERNAL FACTORS	
WEAKNESSES	STRENGTHS
No legislation for blood transfusion practices	Blood Policy adopted in 2005
Blood policy not yet implemented	Blood Transfusion Programme Manager appointed by MOHS
BTSs are presently hospital based	There is a specific budget for BTS and a cost recovery system
Lack of administrative and financial staff	Existing financial support from the Global Fund
Shortage of technical staff	
Inadequate budget allocation and difficulties in accessing allocated funds	NGO's running 6 major hospitals also support blood transfusion activities in these hospitals
Space allocated to the NBTS at central level is inadequate	Technical support provided by WHO
No dedicated space and staff for blood transfusion at regional and district level	SLRCS promoting voluntary blood donations
Frequent and prolonged power cuts at central level	4 blood donor recruiters supported by Global Fund
Lack of power and water supply at district and regional level	Guidelines on clinical use of blood available
Occasional stock outs of consumables and reagents	With the support of Global Funds 100% screening of blood in 4 major TTIs is being done
Very few VNRBD (10% of the total donation)	National Health Policy recognizes the provision of safe blood as a priority
Non availability of donor recruiters at district level	
No Quality management system in place	
Lack of equipment for component preparation	
Lack of trained personnel to carry out maintenance of equipment.	
Lack of blood stocks for emergencies	
Testing equipment at national and regional level not available	
Compatibility testing in districts not performed due to lack of electricity	

Table 2: External Factors

EXTERNAL FACTORS	
OPPORTUNITIES	THREATS
Funding and material support from WHO and GFTAM	Inadequate allocation of funds
Sierra Leone Red Cross Society is located in all districts	Delay in disbursement of funds
The implementation of FHSI has provided opportunity to focus on blood safety	Communication facilities not always adequate at district level
	Lack of water and power supply
	Increased commercialism in blood donation

5.0 PLANS FOR IMPROVEMENT

The Sierra Leone plan is to establish centrally coordinated National Blood Transfusion Service with its headquarters in Freetown and 3 regional blood centres in Bo, Kenema and Makeni.

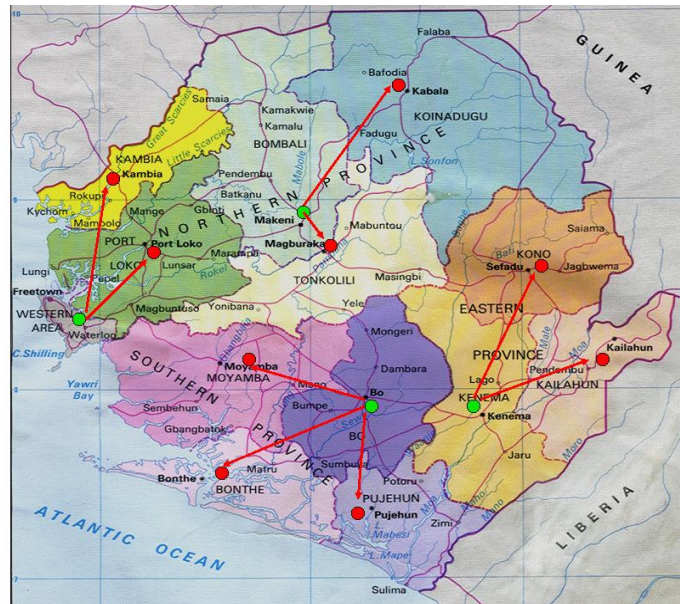


Figure 1: Network of RBTCs in Sierra Leone.

The headquarters in Freetown will be responsible for supplying screened blood to the major hospitals in the Western Area, Port Loko and Kambia districts (Connaught Referral Hospital, PCM Referral Hospital, Ola During Children's Referral Hospital, Rokupa hospital, Kingharman Road hospital, Lumley hospital, Emergency hospital, Choithram memorial hospital, Brookfield's hospital, Netland hospital, Marie Stopes hospital, Blue shield hospital, West End hospital, UMC hospital, Kambia district hospital, Port Loko district hospital, Lungi hospital).

The Bo blood transfusion centre will supply screened blood to major hospitals in Bo, Moyamba, Bonthe and Pujehun districts (Bo regional hospital, Mattru mission hospital, Bonthe district hospital, Pujehun district hospital, Gondama referral hospital, Moyamba district hospital and Serabu mission hospital).

The Kenema blood transfusion centre will distribute screened blood to major hospitals in Kenema, Kailahun and Kono districts (Kenema regional hospital, Kono district hospital, Kailahun district hospital, Panguma mission hospital, Nixon Memorial hospital and Dr Banyan hospital).

And the Makeni blood transfusion centre will supply screened blood to major hospitals in Bombali, Tonkolili and Koinadugu districts (Makeni referral hospital, Tonkolili district hospital, Koinadugu district hospital, Kamakwe mission hospital, St John of God hospital, Holy Spirit hospital and Magbenteh hospital).

The NBTs and the RBTCs working in collaboration with partners and NGOs will be responsible for blood donor recruitment, blood collection, screening and distribution of blood nationwide. The implementation of the Blood Transfusion policy will be done according to the strategic plan as stated in figure 2 and tables below.

6.0 STRATEGIC DIRECTIONS

Introduction

The NBTS Strategic Plan is now mid-way through its implementation. The mid-term review of the plan has shown that while there have been some achievements in its implementation a lot still needs to be done. In particular, the NBTS needs to be organized into a nationally coordinated programme with strong management structures and appropriate human resources if it is to deliver on expected results.

The number of blood units collected annually has increased by 10,000 units since 2007 though total collection is still well below the demand that continues to grow with the introduction of FHSI. The percentage of blood donations from VNRBD has remained static at 10% while the over-reliance on FRD continues to accentuate scarcity and promote commercialization of donations.

Even though data indicates that 100% of the donations are screened for the prescribed infectious agents many hospitals reported at least two stock-outs every year of screening kits sometimes lasting one to two weeks. In addition there has been no system to ensure accuracy of test results. Some of the technical processes raise serious concerns regarding blood safety.

The review identified the following gaps;

- ❖ The NBTS has not assessed the blood supply needs of the country and can not therefore set blood collection targets to meet the needs.
- ❖ Due to the lack of specific and dedicated NBTS staff a lot of the training done has been directed at hospital based staff. While this addresses the downstream issues of the blood pipeline the more critical adequacy, safety and quality upstream issues have not received the required attention.
- ❖ The weak management structures have resulted in feeble efforts at coordination and nationwide standardisation of services.
- ❖ The lack of a comprehensive QMS limits the ability to vouch for the quality of test results.
- ❖ Lack of national IEC materials and uniform information has led to the diversity of messages about blood to the general population.

The objectives and strategies have been revised to address the gaps identified in the review and to consolidate the positive gains made while the mission statement has been retained.

There are six main strategic initiatives driving the revised plan;

- ❖ Establishment of a centrally coordinated national blood programme
- ❖ Phasing out of the hospital based blood transfusion system
- ❖ Increasing blood collections from VNRBD
- ❖ Ensure quality assured testing and safety of blood for transfusion
- ❖ Rationalize the use of blood to improve efficacy and minimize wastage

Already 418 blood donor promoters have been trained throughout the country to support the four regional blood donor recruiters. Over 60 community based blood donor organizations have been

established and GFTAM continues to provide resources for donor mobilization and blood collections. The plan seeks to harness these resources and channel them towards increased blood collections from low risk VNRBD.

Mission statement

The government of SL shall ensure the establishment of a National Blood Transfusion Service based on voluntary blood donation from low risk population and that every citizen in need has access to safe blood

7.0 OBJECTIVES AND STRATEGIC INTERVENTIONS

7.1 Goal

To implement a nationally coordinated blood transfusion programme and ensure accessibility to safe blood and blood products for all patients in need nation-wide.

7.2 Objectives

- Establish a comprehensive nationally coordinated blood service by 2012
- To provide adequately trained staff to the NBTS by 2012
- Increase blood collections from low risk VNRBD by 50% in year one and two and by 100% in year three and four from the current 24,000 to attain over 45,000 by 2014
- Develop targeted donor mobilization and education IEC messages by 2014
- To provide quality assured testing of 100% of all donations for TTIs by 2011
- Establish comprehensive QMS by 2014
- To promote appropriate use of blood among clinicians through the provision of transfusion guidelines and continuing education programmes by 2014.

7.3 Interventions

The following interventions will be undertaken in the next four years of the revised strategic plan:

- 7.3.1 Establish a nationally coordinated blood service with strong management and coordination capacity to develop and oversee the blood programme.
- 7.3.2 Increase blood collection from VNRBD to 45,000 units by 2014
- 7.3.3 Ensure quality testing of 100% of donations for all TTIs (HIV, HBV, HCV and syphilis) starting 2011
- 7.3.4 Institute QMS throughout all the blood pipeline
- 7.3.5 Prepare and distribute blood products to hospitals and ensure rational use of blood

Objective 1: Establish a comprehensive nationally coordinated blood service by 2012

A nationally coordinated blood service with good management structures is key to a safe and adequate blood supply and ensures uniformity of services while promoting cost-effectiveness and quality.

The NBTS is still operating from cramped premises in Freetown which also serve as the NBTC. The blood services are largely dependant on hospital blood banks and the transition to a national service has been slow. If the service is to grow it needs to be fast-tracked into a coordinated national service that is able to provide leadership and guidance in the management of the country's blood supply.

Strategic Interventions

- Create a management structure for the NBTS by 2011
- Provide bigger premises for NBTS by 2011
- Operationalise RBTCs to safely collect, test, store and distribute blood by 2011
- Establish two sub-centres at Kono and Kailahun by 2011
- Provide adequate funding to NBTS
- Enact legislation for the NBTS

Objective 2: To provide adequately trained staff to the NBTS by 2012

In a hospital based blood bank system the staff belongs to the hospital rather than the NBTS thus limiting the capacity of the service to develop the capacity of staff to meet the needs of the service. This has been the case thus far and can also be seen from the staff development that has been skewed towards hospital blood banking to the detriment of the core functions of the NBTS. It is important and necessary that permanent staff be deployed to the NBTS and be capacitated to provide services as they gain appropriate experience.

Strategic Interventions

- Ensure availability of well trained staff

Objective 3: Increase blood collections from low risk VNRBD by 50% in year one and two and by 100% in year three and four from the current 2400 to attain over 45,000 by 2014

The national Blood Policy requires that blood be sourced only from VNRBD who have been shown to be safer than other types of donors. The country still relies on FRD for over 90% of its blood supply. The reliance on FRD normally leads to blood scarcity and problems of paid donations as evidenced here as well as being unsafe. The NBTS needs to make a conscious decision and a sustained effort to collect blood from low risk VNRBD to attain a target of over 90% by 2014.

Strategic Interventions

- Raise voluntary collections per centre per week to 200 units by 2011
- Develop blood donor database

- Increase voluntary blood collections from 2400 in 2010 to more than 45,000 in 2014

Objective 4: Develop targeted donor mobilization and education IEC messages by 2014

The successful mobilization of blood donors requires the employment of both marketing and public relations approaches. One of the marketing strategies is the development of relevant and targeted messages for both donor motivation and education. The skills required for both of these approaches are normally outside the scope of a medical establishment such as a blood service. For the plan, therefore, to deliver on this objective external technical support will be required.

Strategic Interventions

- Conduct KAPB survey in 2012
- Develop communication strategy in 2013
- Develop and disseminate targeted messages in 2014

Objective 5: To test 100% of all donations for viral TTIs using EIA from 2011

The NBTS reports that 100% of the donations are tested for the prescribed infectious markers. There is however no system for assuring the quality of testing. It was also observed during the review that frequent stock out of test kits may allow some units to pass unscreened. In many hospitals blood was not cross-matched before transfusion and blood typing was done by slide method.

The NBTS will change the protocol for infectious disease screening to EIA and also introduce stringent quality control measures in all its processes.

Strategic Interventions

- Procure necessary equipment and reagents
- Review testing protocols

Objective 6: Establish comprehensive QMS in all blood safety activities by 2014

The key elements of QMS in blood safety consist of the following;

- ❖ National strategy for blood screening
- ❖ National strategy for blood typing
- ❖ Centralised system for data collection and analysis
- ❖ National standards for blood transfusion services
- ❖ Presence of a designated QA Manager to oversee and implement the system
- ❖ National EQAS for blood typing and TTIs

- ❖ Regular training of staff

The plan has incorporated these key elements in the various objectives including this section.

Strategic Interventions

- Develop NQAP
- Ensure (BCIS) functional management information system

Objective 7: Promote appropriate use of blood among clinicians by 2014

Almost 100% of transfusions are given as whole blood. There are still challenges in providing small volume transfusions to children and blood products are unavailable. The NBTS will provide blood products and put in a system for hemovigilance.

Strategic Interventions

- Revise guidelines by 2011
- Establish HTC in central and regional hospitals by 2012
- Establish HTC in all district hospitals by 2014
- Establish hemovigilance system in central and regional hospitals by 2013

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Table 3: Logical framework with Strategic objectives, expected results and indicators.

STRATEGIC OBJECTIVE	EXPECTED RESULTS	INDICATORS
1. To establish a comprehensive nationally coordinated Blood Service.	1.1 Clearly defined NBTS management structure in place	Organogram with filled positions and job descriptions
	1.2 Adequate facilities for NBTS headquarters and NBTC	
	1.3 All RBTCs operational	No. of RBTCs renovated No. of equipment procured and installed
	1.4 Kono and Kailahun sub-centres operational	
	1.5 Adequate funding for NBTS	Budget allocation document available Quarterly financial reports available
	1.6 Blood Transfusion Act operational	Date of commencement of Act
2. To provide adequately trained staff to the NBTS by 2012	2.1 NBTS has full complement of trained staff	No. of staff posted to NBTS No. of staff trained
3. To increase blood collections from low risk VNRBD by 50% in year 1 and 2 and by 100% in year 3 and 4 from the current 2400 to attain over 45,000 by 2014	3.1 National and Regional blood needs established	Assessment report available No. of units collected per session
	3.2. Blood donor database in place	No. of regular blood donors in database.
	3.3. Blood collection targets met	No. of blood units collected per year
4. To develop targeted donor mobilization and education IEC materials by 2012	4.1 KAPB survey conducted	KAPB Survey Report
	4.2 Communication strategy developed	Communication strategy
	4.3 Targeted messages developed	No. of targeted messages
5. To test 100% of all donations for TTIs by 2011	5.1 Reagents stock-outs eliminated Functional equipment	No. of reagents stock-outs No. of days equipment not functional
	5.2 EIA testing protocol introduced	No. of units screened using EIA
6. To establish comprehensive QMS by 2014	6.1 Discrepant test results reduced to <1%	No. of samples retested % of discrepant test results
	6.2. Functional BCIS installed	

7. To promote appropriate use of blood among clinicians by 2014	7.1. Transfusion guidelines reviewed and in use	No. of clinicians using Transfusion guideline				
	7.2 HTC created and functional	No. of hospitals with functional HTC				
	7.3 Hemovigilance system in place	No. of hemovigilance reports				
Strategies	Activities	Responsible	Timeframe			
			11	12	13	14
Objective 1: Establish a comprehensive nationally coordinated blood service by 2012						
Create a management structure for the NBTS	Deploy technical and administrative staff	MOHS				
	Appoint the Advisory committee	CMO				
Provide more spacious premises for the NBTS	Identify premises for renovation	MOHS				
	Provide technical drawings	MOHS				
	Call bids for renovation	MOHS, WHO				
Operationalise RBTCs to safely collect, test, store and distribute blood	Complete renovations of RBTCs	MOHS, WHO				
	Procure and install equipment at centres	MOHS, WHO				
	Post technical and nursing staff to centres	MOHS				
Establish two sub-centres at Kono and Kailahun	Procure equipment	MOHS				
	Post two technicians to the centres	MOHS				
Provide adequate funding to NBTS	Increase budgetary allocation to NBTS	MOHS				

	Solicit partner support for capital investment	MOHS				
Enact legislation for the NBTS	Draft the Bill	MOHS, AG				
	Send Bill to parliament	Cabinet Office				
Objective 2: To provide adequately trained staff to the NBTS by 2012						
Ensure availability of well trained staff	Post required staff to the NBTS	MOHS				
	Train 8 phlebotomists in blood collection	NBTS				
	Train 8 laboratory technicians in mass grouping and EIA	NBTS				
	Train 4 NBTS nurses in donor selection	NBTS				
	Train two senior staff in management	MOHS, WHO				
	Train 4 technicians in blood products preparation	NBTS, WHO				
	Train 4 technicians in quality management systems	NBTS, WHO				
	Train 12 hospital technicians in compatibility testing and investigation of transfusion reactions	NBTS				
Objective 3: Increase blood collection from low risk VNRBD by 50% in year 1 and 2 and by 100% in year 3 and 4 from current 2400 to attain over 45,000 by 2014						
Raise collections per centre	Assess national and regional blood needs	NBTS				
	Set targets for each blood donor recruiter	NBTS				
	Increase collection targets from 15 to 40 units per session	NBTS				
	Increase sessions from 1 per month to 5 per week	NBTS				

	Provide 4 double cabins vehicles for blood collection	WHO	■			
Develop blood donor database	Develop tools for donor data capture	NBTS	■			
	Develop regional donor panels	NBTS	■	■		
	Develop national and regional donor databases	NBTS	■	■		
	Develop donor recall system	NBTS		■	■	
Increase blood collections to meet target	Collect 3600 units from VNRBD	NBTS, GFTAM	■			
	Collect 5400 units from VNRBD	NBTS, GFTAM		■		
	Collect 16,200 units from VNRBD	NBTS, GFTAM			■	
	Collect 48,600 units from VNRBD	NBTS, GFTAM				■
Objective 4: Develop targeted donor mobilisation and education IEC messages by 2014						
Conduct KAPB Survey	Engage a consultant to undertake the survey	WHO		■		
Develop communication strategy	Engage consultant to develop the strategy	WHO			■	
Develop and disseminate targeted messages	Engage consultant to develop messages	WHO				■
	Disseminate messages	NBTS				■
Objective 5: To test 100% of all donations for TTIs from 2011						
Procure necessary equipment, reagents and supplies	Procure 4 EIA equipment, 4 water baths, 4 incubators, 4 centrifuges 4 microscopes and 4 distillers	WHO	■			
	Procure HIV, HBV, HCV and syphilis tests 30,000 in Y1, 35,000 in Y2, 40,000 in Y3 and 50,000 in Y5	MOHS, GFTAM	■	■	■	■

	Procure blood bags and vacuutainers 30,000 in Y1, 35,000 in Y2, 40,000 in Y3 and 50,000 in Y4	MOHS, GFTAM				
Review testing protocols	Screen blood for TTI by EIA and agglutination for syphilis					
	Introduce blood typing by microplate technique					
	Introduce blood typing by tube method in all hospitals					
	Introduce routine cross-match of blood in all hospitals					
Objective 6: Establish comprehensive QMS by 2014						
Develop NQAP	Appoint National QA Manager and Regional QA officers	NBTS				
	Standardise equipment and tests in all centres	NBTS				
	Develop national SOPs	NBTS				
	Develop QA Policy and Manual	NBTS, WHO				
	Develop National Standards for Blood Services	NBTS, WHO				
	Start implementing QA Policy	NBTS				
Establish BCIS	Review paper tools for data capture	NBTS				
	Develop access based system for data storage	NBTS, MOHS				
	Procure and install blood bank data software	MOHS, WHO				
	Train staff on use of software	NBTS, VENDORS				
Objective 7: Promote appropriate use of blood and blood products by clinicians by 2014						
Revise blood use guidelines	Hold five day workshop to revise guidelines	NBTS				

Establish HTC in central and regional hospitals	Sensitise hospital administration	NBTS				
	Appoint members of HTC	NBTS				
	Train HTC members	NBTS				
	Hold monthly meetings of HTC	NBTS				
Establish HTC in all district hospitals	Sensitise hospital administration					
	Appoint and train HTC members					
	Hold monthly HTC meetings					
Establish hemovigilance system in central and regional hospitals	Develop hemovigilance reporting tool	NBTS				
	Appoint and train hemovigilance officer in each hospital	NBTS, Med Supt.				
	Train hospital laboratory technicians to investigate transfusion reactions	NBTS				

8.0 FINANCING THE PLAN

The establishment of a National Blood Transfusion Service is a capital intensive undertaking especially in the initial years of putting up infrastructure and procuring equipment. In addition staff need long training both in formal settings and through seminars and on job training. This is because many aspects and skills needed to manage a service are not covered in many formal training curriculum. This is the reason behind the need for having permanent staff dedicated to the NBTS to learn on the job and gain valuable experience as they mature in the service.

The current four year plan whose main goal is to establish a nationally coordinated service that will provide over 45,000 quality assured units from VNRBD by 2014 will cost 10,077 million Leones over the four years. This will be financed through MOHS routine budget expected at 3600 million Leones if current budgetary estimates are maintained, GFTAM has budgeted for blood safety a further 4400 million Leones over the next two years under Round 9 and WHO has mobilised 1600 million Leones mainly for renovations of regional centres, equipment and vehicles.

The gap amounting to 772 million Leones mainly for IEC technical assistance and training will be met from funds mobilised through development partners.

Table 5: Cost estimates (2011-2014)

STRATEGIES					COST ESTIMATES (MILLIONS LEONES)	TOTAL	SOURCE	GAP
	11	12	13	14				
Create management structure for the NBTS	-	-	-	-	-	MOHS		
Provide more spacious premises for the NBTS	300	-	-	-	300	WHO		
Operationalise RBTCs to safely collect, test, store and distribute blood	850	-	-	-	850	WHO		
Establish two sub-centres at Kono and Kailahun	160	-	-	-	160	WHO		
Provide adequate funding to the NBTS	-	-	-	-	-	MOHS ¹		
Enact legislation for the NBTS	-	200	-	-	200	MOHS		
TOTAL	1310	200			1510			
Ensure availability of well trained staff	16	74	50	30	170	MOHS ²	64	
TOTAL	16	74	50	30	170		64³	
Raise collections per centre	-	-	-	-	-			
Develop blood donor database	30	12	-	-	42	MOHS		
Increase blood collections to meet targets	54	81	243	729	1107	MOHS, GFTAM		
TOTAL	84	93	243	729	1149			
Conduct KAPB survey	-	80	-	-	80		80	
Develop communication strategy	-	-	80	-	80		80	
Develop and disseminate targeted messages	-	-	-	40	40		80	
TOTAL		80	80	40	200		200⁴	

Procure necessary reagents and supplies	1400	1400	1600	2000	6400	MOHS, GFTAM	
Review testing protocols	12	-	-	-	12		
TOTAL	1412	1400	1600	2000	6412		
Develop NQAP	-	30	58	50	138	MOHS	108
Establish BCIS	-	-	200	200	400		400
TOTAL		30	258	250	538		508⁵
Revise blood use guidelines	50	-	-	-	50	MOHS	
Establish HTC at central and regional hospitals	4	8	-	-	12	MOHS	
Establish HTC at all district hospitals	-	-	10	10	20	MOHS	
Establish hemovigilance system in central and regional hospitals	-	12	4	-	16	MOHS	
TOTAL	54	20	14	10	98		
GRAND TOTAL	2876	1897	2245	3059	10077		772

Notes

Advocacy for budgetary increase and donor support¹

Excludes P/E²

Gap is for training TA³

Gap is for TA to conduct survey, develop communication strategy and develop messages⁴

Gap is for TA to develop QA Policy and manual⁵

ANNUAL OPERATIONAL PLAN 2011

The main interventions in 2011 will be

1. Establishing an organizational and management structure for a national blood programme with clear responsibilities and lines of authority and deployment of appropriate staff.
2. Development of infrastructure to include the renovations of the three regional blood centres at Makeni, Bo and Kenema, the identification and renovation of more spacious premises to house the NBTS headquarters and the National Blood Centre, and the procurement of equipment and vehicles.
3. Procurement of EIA kits for TTI screening and other reagents and supplies.
4. Instituting a system for increasing blood collection from voluntary non-remunerated blood donors with a target of 24000 blood units in 2011.
5. Laying the ground work for the development of a comprehensive NQAP through the deployment and development of focal staff and documents.

Several activities will be undertaken to achieve these interventions as outlined in the table below;

The cost of the plan at 2876 million Leones excludes personnel and service management costs which is assumed are already catered for under the MOHS budget. The plan will be funded mainly through the annual MOHS budget (912 million Leone), anticipated GFTAM allocations under Round 9 (1200 million Leones) and WHO funding for renovations, equipment purchase and vehicles for blood collection. It is envisaged that the small funding gap of 70 million Leones will be absorbed through budgetary adjustments, cost recovery and expected contributions from NGOs, such as IRC, that are supporting blood safety activities in some districts.

Table 6:

Implementation Log-frame with costs for 2011

Expected Results	Strategies	Activities	Responsible	Timeframe				Cost (Le Millions)	Source	Gap
				Q1	Q2	Q3	Q4			
Coordinated national blood service with clear management structure to regional level	Create Management Structure	Deploy technical and administrative staff	MOHS					-		
		Appoint Advisory Committee	CMO					-		
	Provide more spacious premises for NBTS	Identify premises for renovation	MOHS					-		
		Provide technical drawings	Architect					-		
		Call for bids for renovation	MOHS, WHO					300	WHO	
	Operationalise RBTC to collect, test, store and distribute blood	Complete renovation of RBTCs	MOHS, WHO					450	WHO	
		Procure and install equipment at centers	MOHS, WHO					400	WHO	
		Post technical and nursing staff to centers	MOHS					-		
	Establish two sub-centres at Kono and Kailahum	Procure equipment for the centers	MOHS, WHO					160	WHO	
		Post two technicians to the centers	MOHS					-		
	Enact NBTS legislation	Provide technical input to draft the Bill	NBTS					-		

Expected Results	Strategies	Activities	Responsible	Timeframe				Cost (Le Millions)	Source	Gap
				Q1	Q2	Q3	Q4			
NBTS has full trained staff complement	Ensure availability of well trained staff	Post required staff to the NBTS	MOHS					-		
		Train 8 phlebotomists in blood collection	NBTS					4		4
		Train 8 technicians in mass grouping and EIA	NBTS					8		8
		Train 4 NBTS nurses in donor selection	NBTS					4		4
Annual blood collection targets met	Raise blood collections per centre	Assess national and regional blood needs	NBTS					-		
		Set targets for each donor recruiter	NBTS					-		
		Increase collection targets from 15 to 40 units per session	NBTS					-		
		Increase sessions from 1 per month to 5 per week	NBTS					-		
		Provide 4 double cabin vehicles for blood mobiles	WHO							
	Develop blood donor database	Develop tools for donor data capture	NBTS					30		
		Develop regional donor panels	NBTS					-		

Expected Results	Strategies	Activities	Responsible	Timeframe				Cost (Le Millions)	Source	Gap
				Q1	Q2	Q3	Q4			
	Establish HTC in central and regional hospitals	Sensitise Connaught and PCM hospital administration	NBTS							
		Appoint HTC members	NBTS							
		Orientate HTC members	NBTS				4		4	
		Hold monthly HTC meetings	NBTS							
							2876		70	

Notes:

The MOHS allocates 912 million Leones

WHO has budgeted for procurement of equipment and vehicles and renovations

GFTAM has budgeted for donor mobilization and test kits

