Papua New Guinea

Department of Health

National Blood Policy

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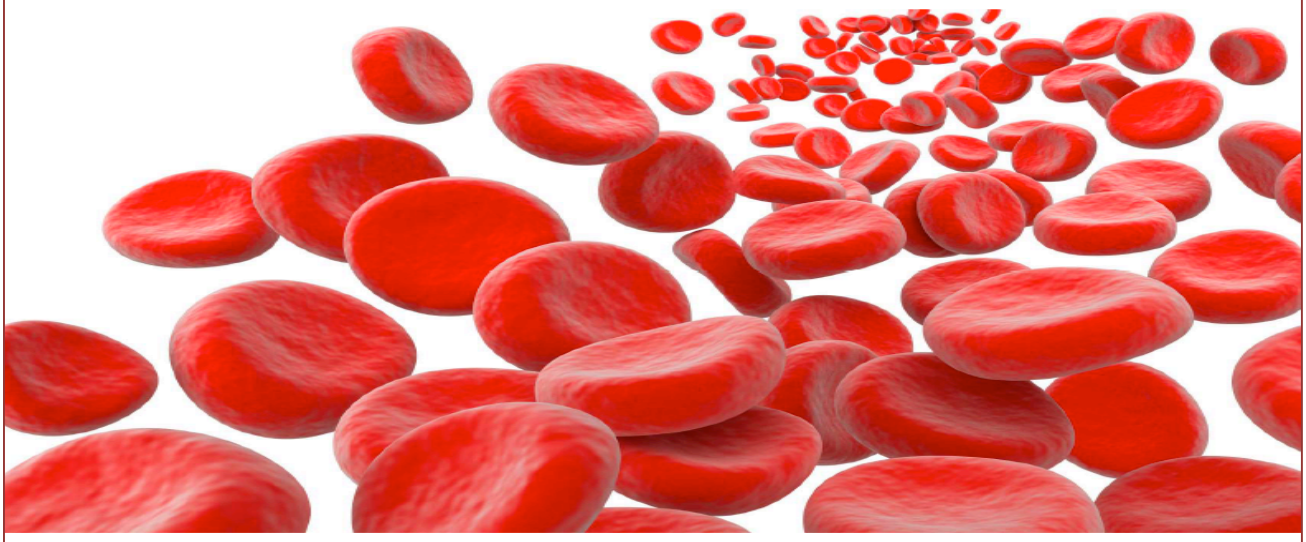

August, 2015

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Foreword

Blood Service is an integral and essential part of modern health care. Blood transfusion saves thousands of lives every year; improve life expectancy and the quality of life of patients suffering from life-threatening conditions. However, emergence of HIV/AIDS has drawn attention worldwide on the need for safe blood and blood products. It is imperative for the blood service to ensure that the blood and the blood products are safe before transfusion. Collection of blood only from low risk voluntary non-remunerated blood donors (VNRBD) is the most effective way of ensuring blood safety. In Papua New Guinea, although there are no paid blood donors, there is a problem of family/replacement donors where blood is donated only for use by a relative in hospitals. We should and we must move away from this family replacement practice, which is not inline with international best practice.

The Ministry of Health and HIV/AIDS and the National Department of Health of Papua New Guinea recognizes the importance of National Blood Service and the government is committed to support the full establishment of a Nationally Coordinated Blood Service that will ensure the availability of adequate and timely supplies of safe blood and products in a timely and cost effective manner for the patient population across the nation. The policy is complementing the National Health Plan 2011 – 2020, MTDG and PNG Vision 2050. Hence, the government is committed to support the National Blood Policy as well as the strategic plan and provide essential resources to implement the policy and strategic plans. The National Department of Health (NDoH) has the ultimate responsibility to provide effective leadership and governance in developing national blood system that is fully integrated into the health care system.

It is a paramount responsibility of the National Blood Service to implement the policy and strategic plan to achieve the goals and the objectives as outlined in the document. While maintaining an adequate supply of safe blood and blood products, the blood service must ensure that all donated blood are screened for other Transfusion Transmitted Infections (TTIs) in a quality assured manner. Good manufacturing practice for production of blood products should be in place including implementation of Quality Management System in all blood centres.

I am confident that successful implementation of this policy and strategies will certainly strengthen our health system further through provision of much needed safe blood and blood products across the nation.

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Honourable Michael Malabag
Minister for Health and HIV/AIDS

Acknowledgments

On behalf of the National Department of Health, I am pleased to present the National Blood Policy of Papua New Guinea. Although the blood service has been functioning following different guidelines, this is the first policy document of PNG National Blood Service. This document has been prepared with support from WHO that has gone through various consultative processes with partners and stakeholders prior to the finalization. The blood service has been running in the past without clear guidance and policy direction resulting in system failure and frequent shortage of blood and blood products. I am optimistic that implementation of this policy and strategies will certainly improve the blood service in the whole country that will support strengthening of health system.

While I congratulate the team who worked very hard to put this policy document together and make it a live document, I would like to acknowledge the following individuals for their special contributions to this document and the blood service of Papua New Guinea.

Honourable Sasa Zibe, MP; former Minister for Health and HIV/AIDS (2009), for his full support to move the blood service back to the National Department of Health.

Dr. Clement Malau; Former Health Secretary for his support in implementing the decision to move the blood service back NDoH and the members of the Senior Executive Management, past and present in the continued support in establishing the National Blood Service as a new program within the National Department of Health.

A special thank-you to the World Health Organization for their continued support in providing technical and funding support in providing experts to work in the initial drafting and consultations of this policy document.

I also acknowledge the contributions from members of the PNG Blood Service Advisory Committee under the leadership of Professor Glen Mola, the National Blood Service Managers, former and current and the NDoH Policy advisor for the effort put into making this document what it is today.

The National Department of Health (NDoH) remains committed to provide essential support and effective leadership to implement this blood policy effectively.

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Mr. Pascoe Kase
Secretary for Health

Executive Summary

National Blood Service is an integral and essential part of modern health care that contributes to saving thousands of lives every year, improve life expectancy and the quality of life of patients suffering from life-threatening conditions, and supports complex medical and surgical procedures. The blood service in PNG has remained fragmented as hospital based service and functioning without any policy and strategic direction.

Emergence of HIV/AIDS has drawn attention worldwide on the need for safe blood and blood products. It is imperative that this National Blood Policy should be in place to establish a nationally coordinated blood service as an integral part of the National Health Care System that will ensure provision of sufficient safe blood and blood products in a cost effective and timely manner achieving 100% blood collection from low risk voluntary non-remunerated blood donors (VNRBD) to meet the transfusion needs of all patients in Papua New Guinea.

The key strategies are:

- Establish a National Blood Programme
- Promote and achieve 100% voluntary blood donations
- Establish National Standards/Guidelines
- Implement quality management system
- Ensure availability of adequate and appropriately trained human resource
- Ensure availability of appropriate physical infrastructures and equipment
- Establish national and provincial donor data base
- Establish Blood Service Information System
- Promote appropriate clinical use of blood and blood products
- Constitute National Blood Advisory Committee
- Establish regulatory mechanism for private, churches and NGOs run blood banks.
- Promote collaboration and partnerships

This policy is not replacing any policy on blood service as there was none. However, this policy will establish national guidelines as per international best practice. Five year strategic activity plan has been developed that will be implemented systematically. The NDoH will take complete ownership of the blood programme and provide leadership and guidance including provision of resources. The National Blood Service Manager shall take the leading and coordination role to implement this policy including development of standards/guidelines, SOPs and production followed by staff training to ensure availability of competent human resources. This policy will address the issues around appropriate physical infrastructures and essential cold chain equipment for the blood service including implantation of quality system and appropriate clinical use of blood.

Evaluation and monitoring system will be in place to measure the programme performance using important variables/indicators including reporting system.

Based on the strategic action plan for the next five years, Kina 4 430 000 will be required to implement this policy and strategic plan (excluding HR and physical infrastructures).

CHAPTER ONE: BACKGROUND

National Blood Service is an integral and essential part of modern health care. Blood transfusion contributes to saving thousands of lives every year, improve life expectancy and the quality of life of patients suffering from life-threatening conditions, and supports complex medical and surgical procedures. Maintaining a supply of safe blood and blood products should be a priority in health programme. Achieving this great objective, the country needs to put in place policies, strategic plans, and structures to ensure the safety, quality, accessibility and timely availability of blood and blood products to meet the needs of all patients who require transfusion. The National Department of Health (NDoH) has the ultimate responsibility to provide effective leadership and governance in developing national blood system that is fully integrated into the health care system.

1.1 Intent of Policy

The National Blood Policy ensures the government's commitment and support to establish a nationally coordinated sustainable blood system that will ensure safety and adequacy of national blood supply sourcing from low risk voluntary non-remunerated blood donors. The document defines organizational structures, strategies, guidelines for all transfusion process and subsequent appropriate clinical use of blood and blood products. The document authorizes the National Blood Service to put regulatory mechanisms in place to monitor the blood banks that are operating in the private sector including NGOs and church run facilities. The document also promotes public private partnerships.

1.2 Historical Context

The Blood Transfusion Service in Papua New Guinea was established during 1960 by the Red Cross Society of Papua New Guinea. Basically, the service was established as hospital based blood bank starting from Port Moresby General Hospital. Historically PNG Red Cross had been managing the service until early 2004 with the funding support from NDoH. During early 2004, St. John Ambulance (NGO) was engaged to manage blood service through an MOU between National Department of Health and St. John Ambulance replacing PNG Red Cross.

The blood service was never developed as national programme and remained fragmented as hospital based blood service. Although the NDoH is the custodian of the national blood service, the department did not take the complete ownership of this entity in terms of management. The blood service had been operating for the last 50 years without an approved policy. Due to the absence of the policy blood service has been functioning without clear goals and objectives; there were no vision or mission. The leaderships for National Blood Service had been in frequent crisis in the past resulting mismanagement of the service and shortage of blood supplies at all levels. There was no organogram or a structure in place to determine the authority, functions and accountability mechanisms of the blood service. Hence the service remained fragmented and hospital based. There are 32 blood banks within the country that received none or very little support from Port Moresby.

Considering the situation and recognizing the importance of National Blood Service, NDoH decided to take back the management of NBS in March 2011. A post for blood service manager was created and the manager was appointed. The blood service now functions as an entity of the NDoH under the Executive Manager, Medical Standards. However, the service currently does not have an approved structure.

1.3 Audience

This policy is intended for all levels of blood service in the country from national, provincial, districts including private, NGOs and church run facilities. All cadres of health workers – medical, nursing, laboratory and administrative staffs that are involved in blood transfusion process will strictly follow the guidance provided in this policy document.

Implementers are also part of the audience and they are encouraged to take ownership of the policy to ensure its successful implementation. The document sets values, principles, goals and objectives for improving and ensuring an effective and fully functional national blood service that provides an adequate supply of safe quality blood and blood products for the people of Papua New Guinea.

1.4 Policy Development Process

The development process of this policy was done through various consultative processes with all stakeholders and development partners. In 2006, the World Health Organization provided technical assistance to prepare a first draft of the policy. The draft was presented to the members of the Blood Advisory Committee, Senior Specialists and stakeholders and a first working draft was compiled incorporating the comments from all concerned. Over the period some editions were done and a final draft was presented to NDoH in 2009 for finalization and endorsement. However, the draft was returned to the Manager of the National Blood Service to put it into the NDoH policy format, which has been completed with revisions and further consultations with stakeholders and development partners.

CHAPTER TWO: POLICY CONTEXT AND DIRECTIONS

2.1 Goal

The goal of the National Blood Policy is to establish the blood service as an integral part of the National Health Care System that will ensure provision of sufficient safe blood and blood products in a cost effective and timely manner achieving 100% blood collection from low risk voluntary non-remunerated blood donors (VNRBD) to meet the transfusion needs of all patients in Papua New Guinea irrespective of geographic location, gender, race and beliefs, including provision of guidance on the appropriate clinical use of blood and blood products.

2.2 Vision and Mission

The **Vision** - Blood Service to be an efficient and effective provider of safe blood and blood products that will fulfil national requirements meeting international standards.

The **Mission** - To save lives and improve health through the provision of safe blood and blood products that meet customer expectations.

2.3 Objectives

The **objectives** of the Blood Policy are to:

1. Establish a well organized nationally coordinated blood transfusion service that can provide adequate and timely supplies of safe blood and blood products to meet transfusion needs of the patient population by implementing the national strategy
2. Promote recruitment and retention of low risk voluntary non-remunerated blood donors and achieve 100% blood collection from VNRBD
3. Ensure that there are, national guidelines available and national standards applied in all aspects of blood transfusion service that includes;
   - 3.1 Donor selection, recruitment, collection, care, pre and post counselling and referrals
   - 3.2 Storage and transportation/distribution of blood and blood products
   - 3.3 Quality assured laboratory screening of donated blood, blood bank serology and compatibility testing, component preparation
   - 3.4 Administration of blood and blood products including investigation of adverse transfusion reactions and reporting (haemovigilance)
   - 3.5 All documentations and record keeping including traceability of blood units from donor to the recipients,
   - 3.6 Donor data base, national and provincial statistics
   - 3.7 Protection of staff health and safety
   - 3.8 Safe waste disposal
   - 3.9 Protecting the confidentiality of the donors and the recipients information
4. Implement quality management systems into all aspects of the blood transfusion process that includes donor recruitment, blood collection, processing, testing, storage, administration of blood to recipients, comprehensive documentation, training, information management, stock and inventory control and monitoring, calibration and maintenance of equipment, monitoring and evaluation.
5. Ensure availability of adequate numbers of appropriately trained staff for all aspects of the blood transfusion process including an evaluation mechanism of staff performance for retraining opportunities for all staff
6. Ensure that there is appropriate infrastructure in terms of physical facilities and equipment available
7. Establish national, provincial donor database including deferral database
8. Establish National, Provincial blood service information system, analyze the data for necessary interventions
9. Develop and adopt clinical use of blood guidelines for use in all hospitals
10. Establish National Blood Service Advisory Committee and Hospital Transfusion Committee within each hospital that will;

10.1 Promote appropriate clinical use of blood
10.2 Provide technical advice in developing new treatment protocols including transplants
10.3 Review and approve operational research
11 Establish effective regulatory mechanisms for blood banks operating at private hospitals including churches and NGOs
12. Promote Public Private partnerships

2.4 Guiding principles of the policy

The following are the guiding principles of the policy implementation. These principles underpin the efficient management of blood service that will ensure the availability of safe blood and blood products for the patient population and their appropriate clinical use.

- **Leadership and Ownership**-where the State takes responsibility for the overall policy coordination and implementation at all levels
- **Equitable Access**-Blood service is an integral part of the health system and to have access to safe blood and blood products is a fundamental right of any citizen
- **Safety and Quality**-ensuring the safety of all staff and blood donors is maintained at all times and also ensuring the production of quality and safe blood and blood products inline with acceptable international standards' best manufacturing practice.
- **Evidence Based Practice**-Decisions based on scientific, medical and epidemiological evidence
- **Consideration of economic, ethical and social dimensions-**where all decisions made and activities implemented should be relevant and appropriate and in no way seem to create conflict in any circumstances
- **International best practices-**where all the blood programs and activities are maintained through applying minimum standards relevant to and acceptable by international standards
- **Efficiency and cost effectiveness**-where allocated funds and other resources are applied to achieve expected results
- **Public Private Partnership** –ensuring an active participation by relevant stakeholders in both public and private sector
- **Transparency**-where all activities undertaken by the NBS in providing the service is done in a open transparent manner
- **Confidentiality**- NBS will strive to protect donor and patient confidentiality in all aspects of practice
- **Effective Communication-**where all materials and messages used to promote blood awareness is done in simple languages for everyone to understand

2.5 Consistency with Core Government and Other Related Policies

This Policy applies to the provision of health care in Papua New Guinea as provided by the NDoH, health agencies, institutions, and other private and non-governmental organizations in the country including church run hospitals who deal with blood and blood products.

The document is inked with KRA 1-5, and 8 of the National Health Plan 2011 – 2020 and MTDG. This Policy should be read within the context of the legislation and policy documents which form the basis of this policy.

Legislation

- Papua New Guinea Constitution 1973
- Public Health Act 1973
- Public Hospital Act 1994
- The Organic Law on Provincial and Local Level Government 1995
- The Health Administration Act 1997
- PNG Occupational and Health Safety Act 2011
- Provincial Health Authority Act 2008
- Medical Registrations Act, 1980
- National Health Administration Act 1997
- HIV/AIDS Management and Prevention Act 2003

Policies

- PNG Vision 2050
- PNG Strategic Development Plan 2011-2030
- Medium Term Development Plan 2011-2015
- Private Public Partnership Policy
- National Health Plan 2011-2020
- National Health Services Standards 2011
- Health Human Resource Policy 2014
- Free Primary Health Care & Subsidized Specialist Care Policy 2014
- National Medicines Policy 2014

CHAPTER THREE: POLICIES AND STRATEGIES

Current Situation, analysis of issues and policy response

3.1 Nationally Coordinated Blood Service was never established

The blood service was never developed as national programme and remained fragmented as hospital based blood service. The blood service had been operating for the last 50 years without an approved policy. Due to the absence of the policy the blood service has been functioning without clear goals and objectives; there were no vision or mission. The leaderships for National Blood Service had been in frequent crisis in the past resulting system failure and shortage of blood supplies at all levels. There has never been an Organogram or a structure in place to determine the authority, functions and accountability mechanisms of the blood service. Hence the service remained fragmented and hospital based. There are 32 blood banks within the country that received none or very little support from Port Moresby.

In order to establish a well organized nationally coordinated blood service, it is imperative that NDoH takes the full ownerships of the programme and have a policy in place with clear policy and strategic direction for the attainment of the goals and objectives of the blood service. NDoH has commenced this process in March 2011 when it decided to take back the management of the National Blood Service back to the department.

Policy Response:

Policy Statement – Shall Establish a National Blood Programme

Strategy 1: Establish a well organized nationally coordinated blood service

3.1.1 The National Department of Health (NDoH) shall formally designate a service, the National Blood Service (NBS) of Papua New Guinea, to be responsible for the provision of adequate safe blood and blood products and to liaise with clinical services for the appropriate clinical use of blood.

3.1.2 The NBS shall be fully integrated into the health care services of PNG, under the National Department of Health (NDoH). There shall be close links with Pathology Service, Central Public Health Laboratory, Institute of Medical Research and Training Institutions for health workers.

3.1.3 There shall be full commitment and support from government for the NBS and the provision of adequate resources for the implementation of the national blood policy and plan.

3.1.4 There shall be a clear organizational structure at all levels, which includes all hospital blood services in PNG with a clearly defined reporting structure showing the interrelationship between technical operations, support services and quality management (see proposed structure – appendix 1 & 2)

3.1.5 The NBS shall be under the direction of an appropriately qualified National Manager, who shall be responsible and accountable nationally for ensuring that all blood service operations are carried out properly, and competently and according to the National Strategic Policy and Plan.

3.1.6 The National Blood Service Manager shall provide effective leadership and governance for the development of sustainable blood programme.

3.1.7 There must be defined roles and responsibilities and clear lines of reporting to the department of health.

3.1.8 The NBS shall coordinate all activities concerned with blood donor recruitment, blood collection, testing, processing, storage, transportation and issue of blood to physicians for transfusion.

3.1.9 There shall be appropriate systems to ensure the financial sustainability of the NBS through the allocation of an appropriate and adequate budget.

3.2 Donor Recruitment and Retention – Family Replacement versus Voluntary Blood Donors

Essentially, blood centres are greatly relying on family replacement blood donors which are not recommended according to the international best practice. Blood service needs to move away from family replacement donors that should be replaced by 100% voluntary

non-remunerated blood donors. Recruitment and retention of voluntary blood donors from low risk population has always been a major challenge. The public is usually not aware of the voluntarily blood donation. Most individuals present to the blood banks for donating blood are family replacement donors. In the past, there were no active advocacy mechanisms in place to disseminate the information on the importance and benefits of voluntary blood donation. Adequate supply of safe blood can only be attained from the low risk population through strong advocacy and successful national blood program. Focus of the policy and strategic plan should be to reach 100% voluntary blood donation by the year 2020.

Policy Response:

Policy Statement – Shall Promote and Achieve 100% Voluntary Blood Donations from Voluntary Non-remunerated blood donors by 2020

Strategy 2: ***Promote recruitment and retention of low risk voluntary non-remunerated donors and achieve 100% blood collection from VNRBD.***

3.2.1 National Blood Service shall develop posters, simple information pamphlets on blood donations highlighting the importance of blood donations, donors information on who is eligible to donate, and simple disease specific information on TTIs (eg HIV, Hepatitis B and C, Syphilis and Malaria).

3.2.2 Produce certificates or tokens of appreciation of the noble acts of blood donors, particularly regular donors (1, 5, 10, 20, 25 donations and above).

3.2.3 Conduct national campaigns including the Celebration of World Blood Donor Day every year to increase public awareness of the need for blood and the importance of voluntary blood donations.

3.2.4 A full time donor service manager shall be assigned the responsibility of voluntary blood donor recruitment and retention programme. All other blood centres that collect blood shall have an assigned full time person for recruitment and retention of blood donors.

3.2.5 All blood donor recruiters shall be trained and a network shall be established for communication between provincial and national donor recruiters.

3.2.6 The donor recruiters at all level shall promote voluntary blood donations involving the partners and community at their respective areas.

3.2.7 There must be a vehicle available for donor recruitment, for staff to conduct mobiles, and for donor recruiters to conduct outreach into the communities.

3.2.8 Physicians and blood bank staff shall communicate to patients, relatives and the community that directed donations (family replacement) are not the safest blood for patients, while encouraging people to become regular blood donors to establish a blood "bank"

3.3 National Standards/Guidelines on various process of blood transfusion

The operations of the blood service have been based on various standards/guidelines without formal endorsement by the concerned authority. Prevalence of HIV is a great concern for blood safety. Prevalence of HIV and other transfusion transmittable infections such as hepatitis B makes it imperative that selection of blood donors are done carefully

followed by quality assured laboratory screening of donated blood for TTI markers. It is a paramount importance that all guidelines are updated covering every aspects of blood transfusion process according to the international best practice, formalized through approval process and put into practice. However, these guidelines and SOPs need to be printed and distributed to all blood centres for use. Prior to the distribution, it is essential that all users be trained is gradual manner to have a full understanding of the guidelines and SOPs and their subsequent use for quality output.

Policy Response:
Policy Statement – Shall Establish National Standards on all aspect of blood service

Strategy 3: Develop and ensure that there are national standards/guidelines available and applied in all aspect of blood transfusion service

The national standards shall be developed by the National Blood Service in consultation with the National Blood Advisory Committee. The standards should be consistent with international best practices, where feasible. The proposed standards shall be submitted to the government for approval as "national standards". In many cases the guidelines may be SOPs for the activities. This process is an essential part of quality management. The national guideline and SOPs shall be printed in sufficient quantities and users shall be made familiarized on the interpretation and use of the documents.

The National Standards and guidelines shall cover the following areas of blood transfusion process:

3.3.1 Pre-screening of donors
All potential donors must be pre-screened and undergo pre-donation counselling. The pre-screening of donors must include: assessment of the donor's health for protecting the donor's safety e.g. questions about medical history, medications, pregnancy, and assessment of weight, blood pressure and haemoglobin. Pre-donation counselling involves describing to the donor the process of donating blood, the rare risks to them, the potential risks to recipients if there are infectious agents in the blood, therefore the need to ask questions about sexual behaviour and to test the donor or donation. (This is an example of a guideline)

3.3.2 Acceptability of potential donors
For every question asked of the potential donor and every test done there must be criteria to determine whether the potential donor is acceptable to donate. For example – ask age must have minimum and maximum age limits e.g. 16 and 60 years old. Weight must be over 50 kg for 450 ml collections and over 45 kg for 350 ml collections, haemoglobin must be greater than 12 gm/dl, minimum time interval between donations - 4 months for females and 3 months for males, acceptable blood pressure range between 90-120 mmHg for systolic and 50-90 mmHg for diastolic, persons taking specific medications are not acceptable. (The medications that should exclude a donor from donating should be spelled out in the standards). All criteria should be based on best practices and/or scientific data.

3.3.3 Blood collection

Standards should be set for cleansing the phlebotomy site, specifying the agent, means of application and length of contact (bacteria in skin plugs are a major source of contamination of blood units and cause of serious reactions in recipients). SOPs should be developed on the volume to be collected, the type of closed bag system to be used, to ensure that units be mixed during collection (to prevent clotting), the maximum time that a donations should take and the need to check the labelling of units, specimen tubes and the number on the donor card.

3.3.4 Care, notification and counselling of donors

There must be guidelines on the care of donors, indications of what to do when a donor has an adverse reaction such as fainting and post-donation bleeds. All donor reactions should be recorded, collated and analysed with the national statistics. Donors with positive test results should be contacted and counselled regarding the meaning of the result, protective actions to prevent spreading an infection to others and helped to find appropriate treatment or care. If trained counsellors are not available at the blood services, donors should be referred to counselling services in the vicinity. In the midterm a system of look back and trace back should be implemented.

3.3.5 Quality assured laboratory screening and testing of donations

It is mandatory that all blood centres shall perform laboratory screening of donated blood in a quality assured manner for the following Transfusion Transmittable Infections (TTI) markers prior to the release of blood and blood products for transfusion;

- HIV 1 and 2, Surface antigen of hepatitis B and C and Syphilis

Only blood that test negative for the above can be used for transfusion.

In addition, each blood units must be tested for;

-ABO blood group and where appropriate Rh factor
-In response to request for blood, a full cross match for compatibility with patient sample including antiglobulin test
-Future plans must include antibody screening with 3 red cell panels to start off with.

All test kits used for testing must be evaluated and validated by the Central Public Health Laboratories (CPHL) and take into consideration both the needs of Port Moresby General Hospital and other large referral hospitals, and the needs of medium and small provincial and district hospitals. The evaluation needs to consider the robustness of the tests under different conditions, staff levels, staff competence, equipment, workload, kit size – some are very wasteful of reagents for small batches, assay time (often need results urgently) and flexibility.

Guidelines need to be in place for performing the tests. In this case the guidelines will refer to SOPs to be followed. National testing algorithms must be defined, which include the type of tests to be performed and the specification of confirmatory tests.

Quality control must be included with testing protocols and periodic quality assurance should be conducted. Provincial services should, on a regular basis, receive test panels

from the national blood services laboratory in Port Moresby. The results can help in an evaluation of the test, testers, appropriateness of the test for the conditions.

National blood services laboratory should participate in International quality assurance programs annually.

Prevalence studies should be performed on viruses that are transfusion transmitted and for which there are tests. In the short term prevalence studies for HCV should be performed. In the long term the prevalence of HTLV II and I should be assessed. Whether or not testing for these viruses are included in the standards should be based on risk benefit analyses that are specific for the conditions in PNG.

3.3.6 Component Preparation

The sterility of all components should be maintained during processing by the use of closed systems, aseptic methods and sterile, pyrogen free disposable bags. If the integrity of the closed system is compromised during processing, products stored at $4^{o}C \pm 2^{o}C$ must be transfused within 24 hours, others must be transfused as soon as possible to a maximum of 6 hours.

3.3.7 Administration of blood

There must be guidelines for issue of blood, ensuring that all units collected from the blood bank are tagged appropriately for the specific patient, that the blood group of the unit matches that of the patient and that there is a visual inspection of the blood (to detect any deterioration, clotting, contamination or haemolysis). The person picking up the unit from the blood bank must sign a register (and time). The blood must be administered to the patient within 2 hours of leaving the blood bank fridge. The (empty) blood bag should be returned to the blood bank when transfusion is completed or disposed into the bio-hazard waste-bin. Any units not used should only be returned to stock if it can be shown that they have not been allowed to warm above $10^{o}C$.

3.3.8 Recording and investigating adverse transfusion reactions

All transfusions reactions must be reported using the appropriate forms recommended by the National Blood Service and sent to the national office.

Physicians and nurses administering blood should be trained to observe patients during and immediately after transfusions, how to identify the signs and symptoms to be reported, and which reactions should be investigated by the laboratory. It should be a standard that transfusion reaction reports are sent to the laboratory along with the empty bag following transfusion.

3.3.9 Documentation and record keeping so that a unit of blood can be traced from donor to recipient

A standard documentation system shall be developed by the National Manager that will;

- Provide donors identification details, contact information, blood groups, previous donation history with donation numbers linked to laboratory test results including cross match and whether permanently or temporarily deferred.

- Ensure that the link between reactive test results and donor's names are kept confidential
- Provide patient information that includes blood group and all donation numbers of units transfused (including those that were incompatible and not transfused – this information will help in the future to identify patients who are likely to have unusual antibodies which pose a risk for the patients who received multiple transfusion). Patient medical records should contain the unit/donation number and when transfused.

- Record whether there was any adverse reaction in the patient during or shortly after the transfusion. If a patient later is found to be HIV reactive and a recipient of a blood transfusion, a trace back shall be conducted to determine whether the donor has subsequently sero-converted.

3.3.10 Statistics that should be submitted to national office and their analysis

The national blood service manager shall identify a standard set of statistics that need to be submitted quarterly for monitoring and evaluation of the blood programme and individual blood centres.

3.3.11 Storage and distribution/transport of blood units

Guidelines and SOPs shall be developed covering the aspects of blood storage and distribution/transportation etc as follow.

- Whole blood collected in CPDA-1 must be stored at 4ºC ± 2ºC for a maximum of 35 days. The platelet units must be stored with continuous gentle agitation at 22ºC ± 2ºC for a maximum of 5 days from collection. All units must be stored in a quarantined fridge (or if not possible) a separate clearly marked area of the blood fridge, until testing is complete. All test negative units should then be moved to inventory for cross matching as needed.
- All test positive units and spoiled or out-dated blood must be moved to a separate area, clearly marked as "bio-hazardous waste".
- Identify the type of packing required for transporting blood units back from mobile collection sites, and from one location health facility to another including air freight, identify time limits and temperature range based on the intended use of blood units; e.g. whether whole blood or blood products. Also identify frequency and means of monitoring the temperature.
- Blood or blood components must be transfused within 2 hours of being taken out of a temperature controlled fridge. Quality of products, particularly platelets, should be periodically monitored.

3.3.12 Importing and use of whole blood and blood products

- Whole blood and products of whole blood specified as components such as red cell concentrates, fresh frozen plasma, cryoprecipitate, and platelet concentrates shall not be imported and used unless request is made by the NBS to the NDoH under specific conditions if and when necessary. A standard guideline shall be developed to protect this process.

- Plasma derivatives and other serological products manufactured from human plasma such as albumin and immunoglobulins shall be procured under the same process as the other medicines included in the Medical and Dental Catalogue.

3.3.1.3 Protecting the confidentiality of donor and recipient information – professional and ethical principles

Guidelines shall be developed to protect the confidentiality of medical records and donor records, particularly the results of testing, all testing not just HIV. Donor names should not appear on blood collection bags or samples, or in laboratory testing records – only the donation number. Relevant information about the results should be recorded on donor cards by an authorized senior member of staff. This is particularly important because the infected unit has to be discarded. The individual donor record should be clearly marked 'Permanently Deferred' without stating the reason. This will require a secure place for records at each blood service.

The safety of recipients and blood donors shall be given the utmost consideration at all times. The donation and transfusion process shall not in any way be discriminatory, whether by race or religion.

3.3.14 Protection of staff health and safety

Guidelines for protecting health and safety of workers in laboratories shall be developed following recommendations from international organizations including WHO. One person at each blood centre shall be designated as "Safety Officer" who will implement safety procedure and supervise.

3.3.15 Safe waste disposal

Safe waste disposal is one of the most important aspects of laboratory practice. Guideline/SOP shall be developed on how infectious and potentially infectious waste should be disposed of – preferably by incineration, if facilities are available, or if not, all potentially infectious waste must be decontaminated by autoclaving or chemical means. There must also be standards for the disposal of sharps (used needles, lancets etc.). Separate standards may have to be drawn up for the conditions at mobile collection sites.

3.4 Quality Management System

There is no quality system in place for blood service and also no established quality standard and checklist available up until now. In order to safeguard the quality and safety of blood and blood products, it is imperative to develop an appropriate standards and checklist incorporating key elements of the quality system.

Policy Response:
Policy Statement – Shall Implement Quality Management System

Strategy 4: Establish and implement quality management systems into all aspects of the blood transfusion process.

Implementation of quality management system into all aspects of the blood process that includes donor recruitment, blood collection, processing, testing, storage, administration of blood to recipients, comprehensive documentation, training, stock and inventory control and monitoring, calibration and maintenance of equipment, monitoring and evaluation - shall be mandatory for all blood centres. The key elements of a quality system shall include - organizational management, standards, documentation, training and assessment. Management commitment and support shall be provided for the development, implementation and monitoring of a national quality system in order to ensure continuous quality improvement. All staff should understand the importance of quality and the consequences of failure in the quality system.

In order to implement quality management system, one national quality officer at the National Blood Service in Port Moresby shall be trained and assigned the specific responsibility to implement and coordinate the quality management of all blood centres. The manager shall develop the SOPs for all activities involved in the blood donor recruitment, collection, processing, testing, cross matching, labelling, documentation, administration of blood and recording adverse transfusion reactions, as well as error management, occupational health and safety, and waste disposal.

The national SOPs should be a national resource for all hospitals in the country that collect and/or transfuse blood. One person at each blood centre shall be assigned the responsibility for quality management at that centre's blood service and they will be trained on the element of quality system and implementation mechanism.

An external expert shall be invited periodically visit/inspect the blood service for independent review and recommendations for improvement.

3.5 Human resource

The blood service has been struggling due to shortage of adequate trained staff. Evaluation mechanism of staff performance is non-existent. It is evident that, there is a great need of refresher training for all categories of health workers working for blood service. Most health professionals engaged with blood service did not receive any refresher training on the blood service disciplines for many years. During last few years the blood service was able to conduct few refresher-training courses through WHO funding support which is inadequate.

Staff shortage must be addressed and training must be prioritized in order to improve staff performance and improve service delivery. Staff training will also improve ethical behaviour and conduct of the staff. However, funding is the biggest hindrance to implement training programmes that are so essential.

Policy Statement – Adequate and appropriately trained human resources shall be made available

Strategy 5: Ensure availability of adequate numbers of appropriately trained staff for all aspects of blood transfusion process including an evaluation mechanism of staff performance for retraining opportunities for all staffs

The following action shall be undertaken to address the HR issues.

- The roles and responsibilities of staff at all levels within the organization shall be clearly defined in job descriptions.
- A staffing plan shall be developed – calculating the number and qualifications of staff needed in the blood centres for outreach, recruitment, pre and post donation screening and counselling, collection, and associated administrative and housekeeping tasks, laboratory testing and processing including quality and safety.
- The plan shall be submitted to the National Department of Health for approval followed by commencing hiring process.
- All newly recruits shall be provided with training before undertaking the responsibilities followed by biannual national refresher training for up-grading skills.

3.6 Physical Infrastructures and equipment

Most donor recruitment and bleeding centres are housed in rundown buildings. The space is inadequate and the beds and equipment are too old. The cold chain facilities are inadequate in most blood centres; some are too old and need to be replaced. Most blood centres lack proper design, ventilations and air-conditioning. The workspace in the laboratory is inadequate where blood bank serology tests are performed that is so critical. Improper working condition is hindering the quality output as well as staffs and patients safety.

Policy Statement – Appropriate physical infrastructure and necessary equipment shall be made available

Strategy 6: Ensure that that there is appropriate infrastructure in terms of physical facilities and equipment available

- In order to establish an appropriate and adequate physical infrastructure for all blood centres in the country, assessments shall be carried out in collaboration with Health Facility Branch and provide necessary recommendations to the authority.
- A standard model will be developed that that will allow adequate space for donor counselling, comfortable area for blood donation and refreshment, secure areas for document storage, room for computer and administration including adequate, clean and safe laboratory space. The model should provide scope of adequate ventilation as well as air-conditioning system.
- An assessment shall also include requirement of new equipment and replacement of old equipment including cold chain facilities. Report will be submitted to NDoH for funding support.

3.7 National Donor Database

There is no national blood donor database. Each individual blood bank is somehow keeping their donor data in small donor cards that are filed manually. Retrieving data from manual system is not efficient on the national scale when there is a situation of severe incompatibility in a health facility and donors are needed. Having a national as well as provincial donor database will assist in providing very vital information in the event of a natural disaster when large quantities of blood may be needed including requirement for rare blood types and blood with presence of low frequency antibodies.

Policy Statement – Donor database shall be established

Strategy 7: Establish national, provincial donor data-base including donor deferral database

- The NBS shall develop a standard set of donor information to be contained on each donor record, which includes whether or not the donor is temporarily or permanently deferred. Donor cards shall be made which allocate a unique number to each donor.
- A password protected computerized system shall be developed for national and provincial level using a simple programme that allows input of donor information at multiple sites and is linked nationally. The system will allow easy retrieval of donor information when needed including the donors that were permanently deferred.
- IT and necessary equipment shall be procured and provided.

3.8 Blood Service Information System

The blood service has been without any information system in place. The data collections are done manually which is extremely difficult and time consuming. Some blood centres are reluctant to provide data. There is no computerized system for data collection, entry and analysis even at national level let alone provincial level. Data collection and subsequent analysis is extremely important to monitor the trend and make necessary intervention for expected outcome. Hence, information system should be established at all levels that will provide necessary information including reporting to WHO Global Data Base.

Policy Statement – Shall Establish Blood Service Information System

Strategy 8. Establish National, Provincial blood service information system, analyze the data for necessary interventions

- A computerized Information System for national level blood service shall be established that will capture all necessary information. Data shall be collected quarterly form all blood centres and entered into the information system.
- Data shall be analyzed to monitor and evaluate the programme performance against variables as indicated under chapter five. The analysis of the statistics will be extremely important for quality improvements at provincial as well as national level blood service.

- A similar system will be established at all provincial level and other blood centres.
- All staffs involved in data collection, management, analysis and reporting shall be trained.
- IT and necessary equipment shall be provided.

3.9 Clinical use of blood and blood product

Currently, PNG does not have an official guideline on appropriate clinical use of blood and blood products. Correct use of blood can save lives, improve health and expand life expectancy. However, there are risks of transmission of infectious agents such as HIV, hepatitis B and C, syphilis etc by blood and blood products. ABO incompatibility and transfusions reactions and other transfusion related complications also pose a risk to the patients. In order to minimise the risks, there should be a clear national guidelines on the rational and appropriate use of blood and blood products that will help to avoid unnecessary risks of infections that may be caused by transfusion and other transfusion related Complications. Guidelines must also cover appropriate management and handling of blood to avoid wastages

Policy Statement – Guidelines for Appropriate Clinical Use of Blood and Blood Products shall be developed and adopted

Strategy 9: Develop and adopt guidelines for clinical use of blood and blood products for use in all hospitals

- The National Blood Service Manager in consultation with National Blood Service Technical Advisory Committee shall develop national guideline for appropriate clinical use of blood and blood products for Papua New Guinea.
- The guideline shall be approved and adopted.
- The guideline shall emphasize on the following;
    - Prevention, early diagnosis and effective treatment of conditions that could result in the need for transfusion
    - Use of good surgical and anaesthetic techniques, pharmaceuticals and medical devices to reduce blood loss
    - Availability and use of simple alternatives for volume replacement including intravenous replacement fluids (crystalloids and colloids)
    - Appropriate prescribing of blood and blood products in accordance with the national guidelines
    - Safe administration of blood and blood products
    - Need for administration of malarial prophylactic drugs in transfusion recipients in PNG
    - Follow up of patients during and post transfusion
    - Establishment of a haemovigilance system
- The guideline will be introduced to physicians in each hospital through seminar or workshops.

3.10 Blood Service Advisory Committees

Currently there is one Blood Service Advisory Committee that is non-functional. There is no clear Terms of Reference (ToR) for the committee. Except for Port Moresby General Hospital, none of provincial hospitals have a hospital transfusion committee. The national technical blood advisory committee and the hospital transfusion committees are very important bodies that can provide a tremendous technical support and advice to the national blood service especially in promoting appropriate clinical use of blood, developing treatment protocols and in the review and approval process of operational research.

Policy Statement – National Blood Service Advisory Committee and Hospital Transfusion Committees shall be constituted

Strategy 10: Establish a functional National Blood Service Advisory Committee and Hospital Transfusion Committee within each hospital that will;

A National Blood Service Advisory Committee (NBSAC) shall be established at the national level followed by hospital transfusion committees in each of the larger hospitals to help implement the national blood policy and strategies. The main functions of the NBSAC are as follows;

- Support implementation of the national policy and strategic plan.
- Provide technical advice in developing new treatment protocols including transplants of stem cells and bone marrow in Papua New Guinea in future.
- Review and approve any operational research that will be conducted involving blood donors and any blood products.
- Support haemovigilance

The principal functions of the hospital transfusion committee is to:

- Monitor the safety, adequacy and reliability of the supply of blood, blood products and alternatives to transfusion
- Develop systems and procedures for the implementation of the national guidelines on the clinical use of blood within the hospital, including the development of a hospital blood ordering schedule.
- Promote the effective implementation of the national guidelines through the education and training of all clinical and blood bank staff involved in the transfusion process.
- Monitor the usage of blood and blood products within the hospital
- Monitor the implementation of the national guidelines in the hospital and take appropriate action to overcome any factors hindering their effective implementation
- Review incidents of severe adverse reactions or errors associated with transfusion, identify any corrective action required and refer them to the National Blood Service Advisory Committee.

3.11 Regulatory mechanisms for private sector

The National Blood Service has the sole responsibility of operating and coordinating and all blood banks within Papua New Guinea. Currently there are no regulatory mechanisms

in place to monitor the blood banks that are operating in the private sector including churches and NGOs run facilities. It is an assumption that they are following the existing international guidelines for best blood banking practice.

It is essential this policy document spells out clearly that, all the blood banks that are operation in the private sector including NGOs and church run facilities must comply with this policy and subsequently follow the national guidelines set out by the NBS. Each individual blood bank activities will be monitored and regulated the National Blood Service.

Policy Statement – Blood banks operating at private hospitals including churches and NGOs shall be regulated

Strategy 11: Establish effective regulatory mechanisms for blood banks operating at private hospitals including churches and NGOs.

The following policy and regulatory mechanisms shall apply to monitor and regulate the blood banks operating at private hospitals including churches and NGOs.

- All private hospitals including churches and NGOs facilities must follow the national policy and guidelines pertaining to transfusion of blood and blood products
- Blood service systems must be centralised in any one place and coordinated by NBS for collection and screening of blood to avoid parallel systems operating in a given location. Blood should only be released to other facilities upon request only. Other health facilities can assist in donor recruitment and advocacy and referral of potential donors to the central blood service for blood collection and screening.
- The blood and blood products must be provided free of charges to the patients who need transfusion. However, blood banks at private hospitals including churches and NGOs facilities may charge a minimum fee for the consumables and services pertaining to the transfusion.
- The National Blood Service shall act as the regulatory body for all the blood centres in the country including banks operating at private hospitals as well as churches and NGOs run health facilities.
- The National Blood Service shall regulate all blood centres through a programme of regular inspections by a competent supervisory team using a quality standard checklist and provide performance appraisal to the NDoH and the respective blood centres. The blood centres are obliged to provide full cooperation during the audits.
- The blood centres are obliged to provide all data pertaining blood transfusion that are required by the National Blood Service Information System.
- The National Blood Service shall provide report and recommendations to NDoH on the performance of all blood centres including private, churches and NGOs run blood banks. The recommendations will include disciplinary measures for non-compliance with national policy and guidelines.

3.12 Collaboration and partnerships

Importance of partnerships and collaboration between public and private sector has been grossly neglected over the years in the area of blood service. There are potentials that private sector, civil societies, churches, NGOs, educational institutions and communities etc. can make huge contribution and impact in recruiting much needed voluntary non-remunerated blood donors. This partnership gap should be narrowed down by developing an effective public private partnership strategy and mechanism.

Policy Statement – Shall promote public private partnerships

Strategy 12: Establish effective strategy and mechanisms for public private `collaboration and partnerships

- The National Blood Service supported by NDoH shall promote collaboration and partnerships with national and international development partners including private sector, civil societies, churches, NOGs, educational institutions and communities etc, to strengthen the blood service especially in the area of voluntary blood donor recruitment.
- Public Relation Officers shall be recruited and engaged effectively under the guidance of the National Blood Service Manager
- The National Blood Service shall ensure that external funding provided is used in accordance with agreed project proposal and provide timely report to NDoH and donor partners.

3.2 Resource, staffing and service implications

The successful implementation of this policy will depend greatly on a clearly defined organizational structure, adequate funding, adequate and skilled human resources, improved infrastructures and more advocacies on the part of relevant stakeholders. In order to support the operation and implementation of this National Blood policy, the NDoH shall;

-ensure government commitment and support to establish the National Blood Service as an integral part of the health care delivery system
-take complete ownership of the blood programme and provide effective leadership
-provide adequate financial resources
-provide adequate and trained human resource
-improve physical infrastructures at all levels
-provide adequate cold chain facilities
-provide essential transportation
-Any other support that may be necessary

The end result of successful implementation of this policy will establish a National Blood Service that will ensure provision of sufficient safe blood and blood products in a cost effective and timely manner achieving 100% blood donations from voluntary non-remunerated blood donors that will save thousands of lives. Quality system will be established that will ensure the safety and quality of blood and blood products. Monitoring and evaluation system will in place that will contribute in continuous improvement process.

Failing to implement the policy will result in system failure and the shortage of safe blood and blood products will continue adding more misery and sufferings to the patients who are in need of blood transfusions.

CHAPTER FOUR: IMPLEMENTATION PLAN

The implementation of this policy will be guided by the Corporate Plan of the Department, National Health Plan 2011 – 2020 and the Vision 2050 with required support from NDoH. A five year strategic plan shall be developed inline with the strategies and objectives of the plan. Necessary funding support will be made available from NDoH as per the strategic activity plan. All hospitals that run a blood service shall provide adequate resources to comply with this policy.

4.1 Implementation Approach

The Manager of the National Blood Service supported by NDoH shall take the leading and coordination role to implement this policy. Implementation of the policy will be guided, supported and coordinated from the national level to the Provincial Health Authority level, individual hospitals and health facilities including private, NGOs and church run hospitals. Copies of all developed guidelines including the policy will be widely distributed to all levels for guidance and subsequent use by the decision makers and health professionals. Necessary training workshops will be conducted for the blood service staffs as required to ensure complete understanding of the guidelines and their application.

4.2 Role Delineation

As specified in the National Health Services Standards (NHSS), each blood bank facilities in every health facility, commencing from Port Moresby General Hospital shall be equipped with the relevant equipment and trained staff as per the National Health Service Standard to be able to provide required safe blood and blood products in a cost effective and timely manner.

Each private, Church and NGO run hospitals shall be bond by this policy, strategy and developed guidelines/standards to ensure optimum support in quality patient care.

4.3 Maintaining Quality and Proficiency

In order to ensure that all blood centres remain proficient and maintain quality and standards in all aspects of blood service and process, it shall be a requirement that all blood centres implement Quality Management System and participate in External Quality Assurance (EQA) Programme organized by the National Blood Service. All blood centres

shall score 85% in EQA panels; any blood centres or individuals scoring below 85% shall be given refresher training as part of the continuous improvement process and the maintenance of quality and standards at all times.

Implementation of quality management system shall be achieved through training of senior staff throughout the country on designing and managing an efficient quality management systems and reporting back to the national office.

In addition, periodic supervisory visits by the National Manager, Deputy Manager, Quality/Safety Officer and Donor Recruitment Officer shall be conducted to blood centres throughout the year. Refresher training programme on various blood service disciplines shall be maintained through the support from NDoH and partner agencies such as WHO and Red Cross etc.

CHAPTER FIVE: MONITORING AND EVALUATION

5.1 Program Performance Measure

Performance of the blood programme and the individual blood centres shall be monitored and evaluated by collecting quarterly statistics and subsequent analysis. The performance shall be measured using the important variables/indicators as follow;

- Number of blood donors screened and rejected
- Number of total blood units collected
- Percentage of blood donations from voluntary non-remunerated blood donors (should increase to 100%)
- Percentage of blood donations from family replacement blood donors (should decrease to 0%)
- Number of blood units discarded due to the presence of Transfusion Transmitted Infection (TTI) markers
- Number of blood units discarded due to expiry
- Number of transfusion reactions
- Number of blood units cross-matched but not used
- Number and type of blood products used
- Number of blood centres have reached the target of 100% blood donations from voluntary non-remunerated blood donors
- Number of blood centres have reached the sufficient level of blood stock that is required as per WHO recommendation
- Number of blood centres reported reagents and blood bag shortages
- Number of blood centres equipped with adequate cold chain facilities

- Number of blood centres provided with transport facilities for mobile collection
- Number of blood centres housed in appropriate physical infrastructures
- Number of blood centres implemented Quality Management System

5.2 Reporting and Accountability Mechanism

As per the organizational structure, the reporting mechanism will be as follows.

- At the national level, the National Blood Service is accountable to the Minister for Health, the Secretary for Health manages administratively.
- There shall be a Patron for community advocacy and assistance because of the life saving nature of this service.
- The National Blood Service structure will be part of the National Health Service Standards of the Department of Health.
- At the national level, reporting on policy implementation shall be reported to the Secretary for Health through the Senior Executive Management, NDoH.
- The National Blood Service will oversee the countrywide implementation of the policy with support from the SEM at the national level who will prepare the report.
- The provincial laboratory OIC and blood service Nursing Officer to implement the policy at the provincial health facilities with management support from the CEO of the hospitals and the PHAs, DMS and Hospital Transfusion Committee.
- Laboratory OICs and blood service Nursing Officers at provincial level shall report jointly to the Manager, National Blood Service with copy to the CEO and DMS.
- The National Blood Technical Advisory Committee will provide advice to the National Blood Service.
- The Provincial Hospital Transfusion Committees will coordinate, advise and oversee the policy implementation at the provincial levels including performance monitoring and reporting.
- All private, church and NGO run blood banks shall directly report to the Manager, National Blood Service.

5.3 Review of the policy document and Strategic plan

Over the period, it is expected that changes will occur as policy and strategies are applied. Therefore;

- The National Blood Policy shall be reviewed after 10 years and depending on the status of improvement and challenges, policy document shall be updated accordingly.
- The Strategic plan shall be reviewed and prepared in every 5 years.

ANNEX 1:
ABBREVIATIONS

CEO	**Chief Executive Officer**
CPDA	**Citrate Phosphate Dextrose Adenine**
CPHL	**Central Public Health Laboratory**
DMS	**Director of Medical Service**
EQA	**External Quality Assessment**
FFP	**Fresh Frozen Plasma**
HbsAg	**Hepatitis B surface antigen**
HCV	**Hepatitis C Virus**
HIV/AIDS	**Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome**
HTLV	**Human T-lymphocytic Virus**
IMR	**Institute of Medical Research**
Kg	**kilo Gram**
KRA	**Key Result Area**
MTDG	**Medium Term Development Goal**
NBS	**National Blood Service**
NBSTAC	**National Blood Service Technical Advisory Committee**
NDoH	**National Department of Health**
NGO	**Non-Governmental Organization**
OIC	**Officer In-Charge**
PHA	**Provincial Health Authority**
PNG	**Papua New Guinea**
PNGBS	**Papua New Guinea Blood Service**
PNGRC	**Papua New Guinea Red Cross**
SEM	**Senior Executive Management**
SMHS	**School of Medicine and Health Science**
SOP	**Standard Operating Procedure**
ToR	**Terms of Reference**
TTI	**Transfusion Transmissible Infections**
VCT	**Voluntary Counselling and Testing**
VNRBD	**Voluntary Non-remunerated Blood Donor**
WHO	**World Health Organization**

ANNEX 2:
DEFINITIONS

Blood-the red fluid in the body that is responsible for the main transportation of substances. For the purpose of this document, blood refers to human blood.
Whole blood-un-separated blood collected into an approved bag containing anticoagulant and preservatives
Blood Advisory Committee-a national committee that is responsible for providing guidance and support to the NDoH and the NBS Manager in the implementation of the National Blood Policy and other relevant documents
Blood bank/centre- a place where blood is collected from donors and stored for screening.
Blood component-constituents of blood separated from the whole blood
Blood donor- a person who donates blood.
Blood donor recruiter-a person who recruits blood donors
Blood Guidelines-set of standard procedures and processes that defines the acceptable handling and uses of blood in a clinical setting and must be acceptable by international best practice.
Blood product-any therapeutic product made from human blood
Blood Transfusion-the administering of blood and blood components to a person.
Haemovigilance system- the process of monitoring and evaluating the process of blood collections to transfusion and taking remedial measures to avoid and or correct errors.
Hospital Transfusion Committee- a committee based in the hospital that is responsible for implementing the Blood Policy and Guidelines for appropriates use of blood and monitoring of blood usage and wastage.
Plasma-the aqueous part of blood
Plasma derivative-human plasma proteins prepared under pharmaceutical manufacturing conditions eg. Albumin, coagulations factors concentrates and immunoglobulin.
Standard Operating Procedures- acceptable processes that defines the manner in which a certain test or operation is carried out and must be inline with standard best practice.
Transfusion Reaction-an adverse clinical reaction that occurs after a blood transfusion
Transfusion Transmissible Infections-infections that has the possibility to be transmitted through blood transfusion. Includes HIV, Syphilis, Hepatitis B and C and Malaria.

ANNEX 3:

A: MEMBERS OF THE TECHNICAL ADVISORY COMMITTEE

The Blood Service Technical Advisory Committee shall comprise of the following:

A representative from the National Department of Health
The Chief Clinician
The Chief Surgeon
The Chief Obstetrician & Gynaecologist
The Chief Pathologist
A Blood Transfusion Expert
A representative from the School of Medicine and Health Sciences
A nursing representative
A member from the Church Group
Member of the Civil Society/Community
The Manager NBS (ex officio)

B: MEMBERS OF THE HOSPITAL TRANSFUSION COMMITTEE

Should be multidisciplinary and involve all departments in the hospital that are providing and prescribing blood.
Include

- a representative from the hospital management
- senior representatives from specialties that prescribe blood
- a responsible officer from the blood bank
- a representative from the blood transfusion service
- a senior pharmacist
- a senior nurse

The membership of the HTC is primary clinical but on occasions may involve other personnel such as the finance officer or a lawyer.