

**National Blood Policy  
&  
Strategic Framework 2008-2012  
For  
Blood Transfusion Services in Pakistan**

**National AIDS Control Programme**

**Ministry of Health,**

**Government of Pakistan**

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## Abbreviations & Terms

BTS	Blood Transfusion Services
EQAS	External Quality Assessment Services
GLP	Good Laboratory Practices
GMP	Good Manufacturing Practices
GTZ	German Technical Cooperation
HBTC	Hospital Blood Transfusion Committee
HSA	Health Services Academy
IBTS	Islamabad Blood Transfusion Authority
ICT	Information and communication Technology
ICT	Islamabad Capital Territory
IDTM	Academic Institute for International Development of Transfusion Medicine
KAP	Knowledge, Attitude, Practice
NBTC	National Blood Transfusion Committee
NC	National Coordinator
QA	Quality Assurance
QC	Quality Control
QMS	Quality Management System
SOPs	Standard Operating Procedures
SPC	Statistical Process Control
TTIs	Transfusion Transmitted Infections
VNRDs	Voluntary Non-Remunerated Donors
WHO	World Health Organization

## **Preamble**

Blood Transfusion is an essential part of modern health care. Used correctly, it can save life and improve health. This document was formulated in an effort to refresh and further harmonize the priorities for the 2008-12 as the last Strategic Framework Document for blood transfusion services in Pakistan formulated for the period 2003-07 has run out its course and needed to be revised.

The new NSF2008-12 document provides fundamental principals and identifies clear priority areas that need to be focused in a coordinated manner so that it can be implemented successfully with in a set time frame.

The overarching priorities regarding blood transfusion services that are addressed in this document included: equity; the development of leadership, planning and management capacity; quality of care and monitoring and evaluation.

This document will be revised periodically in the future and will be consolidated by incorporating suggestions, guidance and critique from the working specialists in the field of transfusion medicine.

The support provided by the Federal Ministry of Health played a key role in the successful completion of this task. The personal interest taken by the Federal Secretary of Health in the whole endeavor is highly acknowledged.

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## **Acknowledgements**

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Dr. Umar Farooq, Quality Assurance Officer and In-charge BT component and Dr. Sabeen Afzal needs a special mention for their valuable efforts with the editing of this document and for their diligence and hard work which made the finalization of this document possible.

# Executive Summary

## **a. Background**

The multifaceted concept of blood safety implies getting blood from healthy voluntary donors, ensuring proper storage of blood, screening donor blood to ensure that it is safe for transmissible infections, preparing blood components and avoiding irrational clinical use.

Considering the fact that provision of a safe unit of blood to an individual in need is a basic right, the Government of Pakistan has decided to launch a nationally organized and coordinated blood transfusion service that would meet the nation's routine and emergency requirements of blood. Development of a National Policy and Strategic Framework for Blood Transfusion Services (BTS) is a step in this direction.

## **b. Purpose and Guiding Principles**

The basic purpose of the exercise, to formulate a National Strategic Framework for the years 2008-2012 in the light of the National Blood Policy, is to enhance and build up the Blood Transfusion Services of the country. The document is envisioned to guide the wide range of partners who are or could be involved in the BTS strengthening efforts. Based on a series of nation wide consensus meetings and workshops, held in 2005 and 2007, the document provides fundamental principles and identifies clear priority areas, which need to be focused in a coordinated manner in order to ensure a successful outcome of implementation within a set time frame.

The participation of a wide range of partners in the formulation of the National Strategic Framework served the following key purposes:

1. Enhanced ownership
2. Facilitation of an expanded response
3. Increased resource mobilization

## **c. Areas and Goals of the National Strategic Framework:**

Based on the available information and given the observation that limited further actions have been initiated to realize the Strategic Areas identified in the original National Strategic Framework 2003-2007 document (Table 1), the eight priority areas along with the goals were revised through wide consultation with the stakeholders.

Table 1 – Strategic Areas of the 2003-2007 Strategic Framework document

**Strategic Areas of the National Strategic Framework 2003-2007**

Area I	Development, Organization, Management of BTS at national/regional levels and role of the public/private sectors
Goal	To establish quality National Blood transfusion Services in the Country based upon the most up to date Scientific and Practical Principles to ensure timely and adequate supplies of Safe Blood and Blood Components with maximum efficiency and minimum risk to the Donor and Recipient
Area II	Motivation, Recruitment and Retention of Blood Donors and Blood Collection/Storage
Goal	To ensure the adequate supply of safe blood through enhanced voluntary and regular non-remunerated donations and establish proper storage and transportation facilities based upon the most recent recommendations in order to promote its efficient use.
Area III	Capacity Building, Resource Mobilization and Financing
Goal	To enhance the capacity of the National Blood Transfusion Services in terms of the manpower, skills and infrastructure
Area IV	Screening of Transmissible Diseases and Bio-safety with special reference to infection control practices and management of infectious waste
Goal	To ensure reliable screening for TTI agents and maintain hazard-free environments in and out of the BTS
Area V	Equipment, consumables and Laboratory Reagents
Goal	to ensure blood safety through adequate and efficient supplies of laboratory equipment and materials
Area VI	Practising and promoting rational use of Blood and Blood Components/Plasma Expanders
Goal	To rationalize the use of blood and blood component therapy thereby reducing hazards of transfusion through their effective use
Area VII	Quality Management and Monitoring of the BTS
Goal	To ensure availability of sufficient supply of safe blood and blood components with maximum efficacy and minimum risk for both for donors and recipients
Area VII	National Guidelines and Standards
	Disaster management Plan for the National and Regional BTS
Goal	To ensure the adequate supply of Safe Blood at all levels and on all times.

For realistic and practical reasons of implementation it was decided to group the Strategic Areas into 4 major logical managerial clusters:

Cluster 1 – Organization, Structure and Management (governance)

Strategic Areas covered in this cluster deal with:

- a) The managerial and governing structure,
- b) Legal and regulatory affairs,
- c) Financing, budget and insurance issues.

Cluster 2 – Resources (human, education, facilities, consumables and equipment, quality system and quality management)

Strategic Areas covered in this cluster deal with:

- a) facilities and equipment
- b) personnel and education/training
- c) quality system and Quality Management
- d) data management and ICT

Cluster 3 – Core business (collection, processing and testing, storage and distribution, clinical use)

Strategic Areas covered in this cluster deal with:

- a) donor management including the community interface
- b) processing and storage (optimal use, cold chain)
- c) laboratory controls testing: mandatory Transfusion Transmitted Infections(TTIs) and ABO RhD, in process Quality Control
- d) Clinical interface and rational use; haemovigilance
- e) Logistics – collection and supply (cold chain)

Cluster 4 – Sustainability and improvement of processes (monitoring and evaluation, statistics, needs assessments, medium and long term planning)

Strategic Areas covered in this cluster deal with:

- a) Monitoring and evaluation, statistics and needs assessments
- b) Medium and long term planning
- c) research and development capacity building; continuous education (competence and awareness, CPD)

#### **d. Recommendations:**

The 2007 consensus workshop participants formulated a number of recommendations:

1. It is advisable to include an active identification mechanism for low risk groups in the community, as well as a structured plan for the development of the community interface through continuous social marketing – trust and confidence, commitment and community feeling of ‘ownership’.
2. It is advisable to stress the importance of the use of alternatives in particular in volume problems, as well as a structured plan for the development of the clinical interface and the concept of haemovigilance
3. It is advisable to bring in the element of cost calculation, economy of scale and evidence based operations as these are of importance for the creation of political, public and professional awareness.
4. Quality Management could only be implemented when there is a Quality System to be managed. Management is an intellectual process to assure that existing systems work as

expected. So, first the development of a Quality System (QS) based on Good Practices (governance, manufacturing, laboratory and clinical) should be ensured. Such QS/QMS should be based on the hybrid of ISO 9001/2000 standards and GMP principles, and consist of two major parts – the managerial parts describing the policies (What is it that we want to achieve) and the strategies (How would we like to see that happen), which includes the analysis and description of the various processes. Part two consists of the operational elements describing the procedures to follow (How it is actually done) including the job descriptions (JDs, performance of people), standard operating procedures (SOPs, consistence of procedure performance) and equipment operating procedures (EOPs, how to run and maintain equipment). The final operational element is the documentation of results and outcomes – the records and forms that allow proper monitoring and evaluation. The four elements should be integrally interrelated to allow traceability.

5. Based on the revised document with its identified and defined clusters of Strategic Areas a realistic and feasible plan of action has to be built with appropriate and clear indicators, time lines and milestones. The transition foreseen will require strong political commitment as well as full and sustained commitment of all stakeholders involved.

6. It is recommendable to initiate action by the creation of Task Forces of competent and committed people for each of the identified fields of attention within the clusters.

#### **e. Key Implementing Partners:**

The establishment and strengthening of the National Blood Transfusion Services is a challenging task that requires proportionate efforts on part of all national and international stakeholders. The Strategic Framework clearly envisions pooled expertise and resources from all the stakeholders, including the government, private sector, armed forces, and international development agencies. The following partners are required to play a proactive role for the purpose:

1. Ministries of Health, Education, Culture & Youth, Municipalities, Women Affairs, Religious Affairs, Law & Justice, Interior, Communication, Labor / Manpower and Industries
2. Provincial Health Departments and all other Departments
3. Armed Forces Institute of Transfusion (AFIT)
4. Private Sector Organizations such as Agha Khan University (AKU), Baqai University etc
5. Non-Governmental Organizations such as Fatmid Foundation, Hussaini Blood Bank, etc. International Organizations such as World Bank, WHO, USAID, International Federation of Red Cross and Red Crescent Societies, International Consortium for Blood Safety (ICBS) and other development/ donor organizations.

#### **6. Barriers**

1. Fragmentation and commercialism in Blood Transfusion Service

2. Sub-optimal Blood Transfusion Services at Federal/ Provincial levels
  3. Lack of supervisory control by Regulatory Authorities at Federal / Provincial levels to ensure compliance to National Standards and Guidelines
  4. Inadequate financial support to meet transfusion requirements of the community at all levels and constrained finances for the overall health sector
  5. Lack of identification of responsibilities for Blood Transfusion Service at National/ Provincial levels
  6. Lack of standardized curricula for in-service training of the manpower
  7. Grossly deficient quality control and lack of quality assurance for majority of consumables
  8. Absence of service structure for the BTS staff
- 7. Opportunities:**
1. Availability of a core group of technical experts within the Country
  2. Decision at Federal level to consolidate the current fragmented system into one National (Federal) system with provincial and regional centers serving hospitals
  3. Decision at Federal level to change the legal and regulatory framework, bringing the legislation under Federal law
  4. Availability of BTS in Punjab with a model administrative structure
  5. Availability of expertise and infrastructure at the Armed Force Institute of Transfusion (AFIT)
  6. Availability of National Standards and Guidelines (2000)
  7. Initiation of a new dynamism for the development of national transfusion services in the country
  8. Development of the National Strategic Planning Framework 2008-2012 for the BTS
  9. Presence of Programme Managers for Blood Transfusion Services in the Provinces, AJK and Northern Areas.
  10. Notification of National Blood Transfusion Committee and National Coordinator for Blood Transfusion Services

11. Present low prevalence of HIV and provision of funding under the enhanced HIV/AIDS programme for the prevention of transfusion transmitted HIV, Hepatitis B and C infection.
12. Interest of international funding agencies to support the development of a nationally coordinated blood transfusion service providing equitable access to safe blood
13. Availability of a young healthy population to act as voluntary non remunerated donors.
14. Available NGOs support for voluntary non-remunerated donors recruitment.

# **An Overview**

## **Blood Transfusion Services in Pakistan**

Blood transfusion is an essential part of modern health care. Used correctly, it can save life and improve health. The inappropriate use of blood and blood products, coupled with the transfusion of untested or improperly screened units increases the risk of TTIs to recipients. It also widens the gaps between supply and demands and contributes to shortages of blood and blood products for patients requiring transfusion.

The situation in Pakistan with regard to Blood Transfusion has remained far from satisfactory over the years. There is extreme fragmentation, rampant commercialism and exceptionally poor quality of transfusion practices in all but a few establishments throughout the country. The blood transfusion services (BTSs) in the country are mostly hospital based with 170 public and about 450 private blood banks. The annual estimated requirement of blood is approximately 1.5 million units with 40% demands being met by the public sector. Currently shortage amounts to as much as 40%. The problem is further compounded by inappropriate use of blood, with 80-85% of blood being used as whole blood.

Despite efforts to control the practice, around 15% of the blood is still donated by the professional donors while only 10% are voluntary unpaid donations and 75% are replacement (hidden payment) donations. The concept of Voluntary Non-remunerated Donors (VND) is almost non-existent due to the absence of blood donor motivation and retention strategies. The cultural and socio-economic factors are associated with the reluctance to give blood at all, especially without reward. The problem is compounded by the fact that there is no coordination between those who recruit and motivate blood donors and those who collect blood.

There is no system in place for proper motivation and mobilization (recruitment), record keeping and retention of the donors except for a few centers. The facilities of pre-donation information and appropriate counseling and support are generally not available and donor deferral systems do not exist. The small-scale blood donor programmes lack adequate human and financial resources to ensure broadening of the donor base and donor retention afterwards. Proper blood storage and transportation facilities are also not available in most of the public and private sector blood banks leading to wastage of a significant proportion of the collected blood.

In Pakistan, the resource limitation is not the only contributing factor towards the poor state of the Blood Transfusion Services. Lack of ownership and commitment on part of national and international partners and inability to perceive the far-reaching public health implications of a poor blood programme has been detrimental in the existing scenario. Relatively organized blood transfusion services are available only in Punjab, which has been able to maintain the inherited infrastructure through provincial allocations. AJK has made promising progress in this regard. However, the situation in remaining provinces, FATA and FANA is weak, where the provincial contributions are very meager and blood programme is limited to only screening for HIV and Hepatitis B out of the federal budgetary allocations through the National AID Control Programme.

# National Blood Policy

National Blood Policy for Pakistan shall meet the need of the community and health programme of Pakistan, for conservation of the donated blood.

The aim of this National blood policy shall be development of a National Blood Programme that strives to meet, in equitable fashion on non profit basis, all of the patient population throughout the country on a regular basis, at minimal cost, with minimal waste but with optimal safety and efficacy.

National blood policy shall also provide a strategic framework and directions for blood transfusion services under following priority Areas:

1. Development, Organization, Management of Blood Transfusion Services at national and regional levels
2. Define the role(s) of the Public / private Sectors.
3. Capacity Building, Resource Mobilization and Financing.
4. Procurement of equipment, consumables and laboratory regents.
5. Motivation, Recruitment and retention of Blood Donors and blood Collection / Storage and transportation.
6. Screening of blood and blood products for Transfusion Transmissible Diseases.
7. Ensure bio-safety with special reference to infection control practices and management of infectious waste.
8. Practicing and promoting rational use of blood and blood Products.
9. Quality management and monitoring of the blood transfusion Services.
10. National Guidelines and Standards for National and regional blood Transfusion Services and Disaster Management Plans at the National and regional levels.

The salient features of the National Blood Policy, based upon the recommendations of the World Health Organization and the International Federation of the Red Crescent and Red Cross Societies, are set out below:

## **Federal Health Ministry and the Provincial / Area Health Departments shall:**

- Establish Blood Transfusion Services on the pattern recommended by the National Blood Transfusion Committee.
- Establish service cadre for various services ranks at all levels.
- Ensure that adequate funding is available to maintain the standards of transfusion practice and quality management, as recommended by the National Blood Transfusion
- Establish reference centers for the Blood Transfusion Services for training, research and development at the Federal and Provincial Headquarters including AJK and FANA.
- Establish and institutionalize the Management Information system (MIS) for effective monitoring and evaluation of Blood Transfusion services.
- Educate, motivate, recruit and retain voluntary, non-remunerated blood donors.

- Develop technical guidelines and standard operating procedures (SOPs) for the blood transfusion services.
- Establish facilities for safe plasma fractionation.
- Ensure that all legislations and regulations are implemented and followed according to national recommendations.
- Resource mobilization from all possible sources.

### **National Blood Programme**

Within the framework of the National Blood Policy, the National Blood Programme shall:

1. Aim at collection of all blood and blood components only from voluntary, non-remunerated donors who meet the laid down national standards for blood donors in such a way that the health and well being of the donors, recipients and health workers are not compromised.
2. Be responsible for
  - a. Collection of whole blood, cellular components and plasma
  - b. Ensuring quality and yield of wanted plasma derivatives
  - c. Distribution of blood, blood components, and plasma derivatives of human origin.

### **Legislative and Regulatory Control**

The Federal and Provincial Blood Transfusion Authorities shall ensure the implementation of the approved laws, to ensure high quality services and availability of adequate safe blood and blood products, through monitoring of the blood banks according to the mandate given to the respective authorities under the Constitution.

### **National Blood Transfusion Committee**

The National Blood Transfusion Committee shall monitor the overall progress of the Blood Transfusion Services in the country, in accordance with the mandate given to this Committee.

# **National Strategic Framework 2008-12**

## **Purpose and Guiding Principles**

The basic purpose of the exercise, to formulate a National Strategic Framework for the years 2008-2012 in the light of National Blood Policy, is to enhance and build up the Blood Transfusion Services of the country. The document is envisioned to guide the wide range of partners who are or could be involved in the BTS strengthening efforts. Based on a series of nation wide consensus meetings and workshops, held in 2005 and 2007, the document provides fundamental principles and identifies clear priority areas, which need to be focused in a coordinated manner in order to ensure a successful outcome of implementation within a set time frame.

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## **Clusters**

For realistic and practical reasons of implementation it was decided to group the Strategic Areas into 4 major logical managerial clusters:

Cluster 1 – Organization, Structure and Management (governance)

Cluster 2 – Resources (human, education, facilities, consumables and equipment, quality system and quality management)

Cluster 3 – Core business (collection, processing and testing, storage and distribution, clinical use)

Cluster 4 – Sustainability and improvement of processes (monitoring and evaluation, statistics, needs assessments, medium and long term planning)

## **CLUSTER 1 Governance**

### **(Organization, Structure and Management of the Blood Transfusion Service)**

This cluster deals with the organization and structure as well as the management system of the Blood Transfusion Service, nationwide. Therefore it is important to identify that the final responsibility of this role rests with the Federal Government, instead of the individual Provincial Governments.

The main fields of attention are:

- a) The managerial and governing structure,
- b) Legal and regulatory affairs,
- c) Financing, budget and insurance issues (providing the basic infrastructure for a sustained blood supply system in the country).

In this cluster, there are 9 priority objectives that translate into 32 activities

#### **Objective 1 To establish organizational structures for national, provincial and district Blood Transfusion Services (BTS) including AJK, ICT, FATA and FANA**

Activities to achieve the Objective:

Activity 1.1 Appoint a full time National Coordinator for the Blood Transfusion Services, having relevant postgraduate qualifications/ experience in Hematology /Transfusion Medicine with vast managerial and administrative knowledge

Activity 1.2 Appoint full time Directors cum Provincial Programme Managers BTS (Medical Doctors with qualifications & experience in transfusion medicine/Hematology)

Activity 1.3 Establish complete management structures in all Provinces including AJK, ICT, FATA and FANA

#### **Objective 2: To assign the roles and responsibilities of planning, coordination, financial management and routine operations at national and provincial levels including AJK, ICT, FATA and FANA**

Activities to achieve the Objective:

Activity 2.1 Planning, coordination, resource mobilization and quality assurance of transfusion related reagents and equipment by the National Coordinator BTS with the help of National Blood Transfusion Committee (NBTC) for all Provinces including AJK, ICT, FATA and FANA.

Activity 2.2 Management, human resource development, monitoring and evaluation of BTS by respective Director cum Provincial Programme Manager (PM) BTS of all Provinces including AJK, ICT, FATA and FANA

Activity 2.3 Development and management of routine operations of the Blood Transfusion Centers at District and Tehsil level under supervision of respective Director cum Provincial Programme Manager (BTS)

**Objective 3: To enhance and strengthen the capacity of the public sector to meet blood transfusion requirements of the community**

Activities to achieve the Objective:

Activity 3.1 Establish network of the Blood Transfusion Services up to District and Tehsil level in all the four Provinces including AJK, ICT, FATA and FANA

Activity 3.2 Categorize Blood Banks at various levels according to the needs of the community and build their capacity accordingly

Activity 3.3 Provide the facilities of component preparation at Provincial/Regional Transfusion Centers /Institutions including AJK, ICT, FATA and FANA

**Objective 4: To ensure prioritized and sustainable allocation of resources for the blood transfusion services**

Activities to achieve the Objective:

Activity 4.1 Develop and process the Project document (PC-1s) at Provincial, ICT, AJK, FATA and FANA levels on priority basis

Activity 4.2 Conduct advocacy meetings with concerned national and international agencies with a view to secure enhanced budget allocations for BTS

Activity 4.3 Plan for some contribution / services charges in order to ensure sustained availability of financial resources

**Objective 5: To establish reference centers /laboratories at national and provincial levels including AJK, ICT, FATA and FANA**

Activities to achieve the Objective:

Activity 5.1 Establish a state of the art reference centre for quality assurance of equipment and transfusion related reagents at the national level

Activity 5.2 Establish state of the art reference laboratories in all the Provinces including AJK, ICT, FATA and FANA for quality assurance of BTS and other transfusion related issues

Activity 5.3 Arrange periodic on job training of the relevant professionals on quality assurance and advance blood banking techniques in centers of excellence abroad

Activity 5.4 Conduct periodic monitoring, surveillance and need assessment of skilled manpower working in blood banks

**Objective 6: To define the roles & responsibilities and strengthen coordination among defense, public and private sectors**

Activities to achieve the Objective:

Activity 6.1 Encourage the private sector for sharing transfusion requirements of the community with public sector.

Activity 6.2 Conduct surveys for evaluation of the status of the Blood Banks in private as well as public sectors.

Activity 6.3 Define and implement a uniform policy in both the public and private sectors to meet national standards of BTS.

Activity 6.4 Arrange and provide technical support to various public and private institutions through the Armed Forces Institute of Transfusion(AFIT) Rawalpindi and Institute of Blood Transfusion(IBTS) Lahore.

Activity 6.5 Provide the facilities of advance training to the public and private sector professional/ technical staff at Armed Forces Institute of Transfusion (AFIT) and Punjab Institute of Blood Transfusion (IBTS).

**Objective 7: To ensure the participation and support of private sector, NGOs and other institutions for strengthening of blood transfusion services**

Activities to achieve the Objective:

Activity 7.1 Establish a network of all NGOs and private sector for sharing of information

Activity 7.2 Organize regular seminars and meetings for all partners at appropriate levels.

Activity 7.3 Initiate news bulletin on regular basis to update about the information on transfusion medicine

Activity 7.4 Involve members of professional medical & paramedical organizations to ensure rational use of blood at health outlets in private sector /NGOs

**Objective 8: To define and strengthen the role of Federal, and Provincial Regulatory Authorities for Blood Bank Services**

Strategies to achieve the Objective:

Activity 8.1 Ensure legal entitlements of respective control authorities to exercise regulatory role as applied to Blood Transfusion Services.

Activity 8.2 Specialized training of Inspectors with reference to Blood Transfusion Services.

Activity 8.3 Conduct inspection of Blood Transfusion Centers both in public and private sectors, and Armed Forces, in accordance with recognized technical Standards for transfusion services.

Activity 8.4 Formulate and recommend measures to standardize or improve Blood Transfusion practices in collaboration with National Blood Transfusion Committee.

**Objective 9: To enhance the political advocacy and commitment at national and provincial levels (including AJK, ICT, FATA and FANA) amongst all partners.**

Activities to achieve the Objective:

Activity 9.1 Increase awareness among the policy and decision makers about the importance of various aspects of safe blood transfusion, its provision to the population and blood transfusion services by organizing advocacy seminars, conferences and workshops at federal, provincial, regional and district levels.

Activity 9.2 Collect and disseminate concrete data on Transfusion Transmissible Infections, to sensitize the policy makers about efficient Blood Transfusion Services and programme at federal, provincial, regional and district levels.

Activity 9.3 Hold individual meetings with and arrange visits of concerned politicians and authorities to various Blood Transfusions Centers.

## **CLUSTER 2**

### **Resources**

#### **(Human, education, facilities, consumables and equipment, quality system and quality management)**

This cluster deals with the key resources needed for the operations of the organization.

The main fields of attention are:

- a) Facilities, equipment, consumables and laboratory reagents
- b) Human capacity building (personnel and education/training)
- c) Quality systems and Quality Management
- d) Data management and ICT,

In this cluster, there are 9 priority objectives that translate into 49 activities

#### **Objective 1: To strengthen the human capacity of the Blood Transfusion Services in terms of infrastructural support and competency enhancement (knowledge and skills) of the manpower**

Activities to achieve the Objective:

Activity 1.1 Establish a National Directorate for Blood Transfusion Programme (education: teaching and training) having an autonomous status

Activity 1.2 Establish a Technical Advisory/ Expert sub-Committee (under the NBTC) from public and private sector/ NGOs to help and advice on technical matters related to Blood Transfusion Services

Activity 1.3 Carry out an exercise on need assessment /situation analysis of existing infrastructure and available manpower

Activity 1.4 Workout the financial requirements based upon the situation analysis

Activity 1.5 Develop standardized and uniform curricula/ training materials for teaching and training of the manpower at all levels (managerial and vocational)

Activity 1.6 In consultation with the PMDC (Pakistan Medical and Dental Council), medical colleges may be asked to highlight the importance of transfusion medicine through lectures, seminars and training workshops for medical students and medical officers. During internship, doctors should be posted in blood banks to gain some hands on experience and exposure. Personnel working in blood banks may be given opportunities to acquire postgraduate qualifications in transfusion medicine.

Activity 1.7 Initiate identification of appropriate leadership and Senior Management for the National and Provincial HQ and Regional Centers

Activity 1.8 Develop a special cadre for those working in blood transfusion services for standardized training curricula, job description and career development

Activity 1.9 Seek Technical Assistance from WHO for strengthening the Blood Transfusion Services

**Objective 2: To carry out need physical assessment / verification of the blood transfusion facilities with a view to highlight key deficiencies and identify potentially functional facilities to accommodate regional centers**

Activities to achieve the objective:

Activity 2.1 Carry out detailed situation analysis of the existing blood facilities in the country including AJK and FANA with reference to their overall location, floor space, demand, workload, existing equipment, consumables and laboratory reagents, availability of trained manpower in each province / area for maintenance and repair of the equipment etc.

Activity 2.2 Categorize the blood facilities according to their workload and define minimum standards for each category

Activity 2.3 Study the existing procurement and storage procedures (both cold chain and consumables) in detail and identify gaps

Activity 2.4 Assess the existing practices of record keeping, auditing & reporting, Monitoring & Evaluation

**Objective 3: To ensure equipment maintenance, availability of consumables and laboratory reagents in the facilities**

Activity 3.1 Lay down Standard Operating and Equipment Procedures (SOPs/EOPs) for the blood facilities based upon the situation analysis / need assessment

Activity 3.2 Negotiate with the relevant authorities to rationalize the taxes / duties on the laboratory materials to bring the cost at reasonable level

Activity 3.3 Arrange the critical equipment, consumables and laboratory reagents along with storage facilities in all blood banks as per minimum acceptable standard for the category

Activity 3.4 Ensure availability of properly trained manpower for running the facilities by arranging courses in the field of biomedical engineering

Activity 3.5 Design and implement proper Quality Assurance (Management) System in each facility

Activity 3.6 Design the forecasting system for the future requirements so as to ensure timely requisitions and supplies

Activity 3.7 Share information on quality of the equipment, consumables and laboratory reagents with all partners

Activity 3.8 Coordinate with the national and international agencies with a view to learn from the experiences of each other

#### **Objective 4: Teaching and training of professionals and staff of blood banks**

Activities to achieve the Objective:

Activity 4.1 Arrange regular on job trainings for the relevant professionals at Armed Forces Institute of Transfusion (AFIT) Rawalpindi, Agha Khan University (AKU), Karachi and Institute of Blood Transfusion Services Punjab (IBTS), Lahore

Activity 4.2 Conduct periodic refresher courses as part of Continued Medical Education (CME) in transfusion medicine at various centers.

Activity 4.3 Organize training courses for blood bank staff from all the Provinces including AJK and FANA, for both public and private sectors.

Activity 4.4 Motivate and encourage the Directors cum Provincial Programme Managers BTS and other blood bank officers to improve their qualifications and expertise in the field of transfusion medicine.

Activity 4.5 Develop human resource for component preparation, storage, safe transportation and quality control through training and teaching

#### **Objective 5: To establish a national quality and quality management system at all steps of the blood transfusion services (vein to vein) including procurement and supplies, processing and testing (QC), design and development**

Activities to achieve the Objective:

Activity 5.1 Develop a GMP/ISO based National Quality System and related National Quality Management System

Activity 5.2 Ensure proper environment at workplace in accordance with the international best practice on the subject (cGMP and cGLP)

Activity 5.3 Establish purchase and procurement department for selection / purchase of products and service for the blood facilities

Activity 5.4 Prepare product specifications in various steps of blood transfusion services

Activity 5.5 Adopt advance technologies in various steps of blood transfusion

Activity 5.6 Establish a Monitoring and Evaluation System capable of tracing the laboratory materials from receipt till use / disposal, and performance outcomes (statistical process control or SPC)

Activity 5.7 Ensure proper transportation, storage and efficient utilization of the available equipment, consumables and laboratory reagents (cold chain) through human resource development

**Objective 6: To motivate and build quality consciousness among all blood programme staff through appropriate training and total quality management in both public and private sectors.**

Activities to achieve the Objective:

Activity 6.1 Establish the necessary infrastructure catering for the blood needs of the community at all levels

Activity 6.2 Recruit suitable staff (managerial and vocational) for the blood banks and arrange appropriate training facilities

Activity 6.3 Arrange facilities of continued training, education / refresher courses and motivational visits to the developed countries with organized blood services

Activity 6.4 Establish internal QC and fully participate in the External Quality Assurance

Activity 6.5 Build a national and regional network of the blood centers in order to support each other for anomalies, rare groups and other relevant issues

Activity 6.6 Maintain a pool of qualified / experienced professionals as advisory panel

**Objective 7: To develop and implement uniform instructions and SOPs for all steps of current international Good Laboratory Practice and Good Manufacturing Practice involved in transfusion medicine**

Activities to achieve the Objective:

Activity 7.1 Review biannually and widely disseminate the guidelines to all Blood Banks in Public and private sector

Activity 7.2 Run regular training programmes as well as specific training programmes for various categories of Blood Bank staff and clinicians (prescribers of blood and blood products) based on the National Guidelines

**Objective 8: To ensure implementation of guidelines at all levels and in all procedures**

Activities to achieve the Objective:

Activity 8.1 Establish national and provincial Blood Transfusion Authorities and Hospital Blood Transfusion Committees to monitor implementation of the national guidelines

Activity 8.2 Provide necessary legislative support for implementation at National/ Provincial level

Activity 8.3 Regular visit of blood banks by inspectors to monitor implementation of national guidelines

Activity 8.4 Establishment of a quality assurance and management team in the private and public sector blood facilities

**Objective: 9 To ensure sufficient and timely supply of safe blood for transfusion during catastrophes**

Activities to achieve the Objective:

Activity 9.1 Develop disaster management plan in consultation with all relevant stakeholders from the public and private sectors after identification of the potential emergency requirements of blood and blood products

Activity 9.2 Develop a mechanism, which could ensure mobilization during emergency for proper disaster management

Activity 9.3 Computerization of the available blood/blood products and donor base so that the information could be readily made available, when required

Activity 9.4 Strengthen the coordination between national, provincial and regional blood banks, NGOs, voluntary donors, private and armed forces hospitals Blood Banks

Activity 9.5 Update list of voluntary donors especially rare and Rhesus D negative donor groups

Activity 9.6 Ensure sufficient storage capacity for donated blood during emergency/ catastrophes

Activity 9.7 Availability of sufficient consumables required for blood processing before embarking on to the blood donations during emergency

## **CLUSTER 3**

### **Core business**

#### **(Collection, processing, testing, storage and distribution and rational clinical use of blood and blood products)**

This cluster deals with the core business of blood supply and clinical use of blood and blood components.

The main fields of attention are:

- a) Donor management including the community interface
- b) Processing of blood – component production
- c) Screening for Transmissible Diseases and biosafety (with special reference to infection control practices and management of infectious waste).
- d) Clinical interface, in-hospital transfusion chain and rational use; haemovigilance
- e) Logistics – collection and supply (cold chain, planning) providing the objectives and related strategies for the day to day operations of the blood supply and clinical use.

In this cluster, there are 13 priority objectives that translate into 63 Activities-

#### **Objective 1: To carry out a national “Needs Assessment” and set targets accordingly**

Activities to achieve Objective

Activity 1.1 Conduct suitable studies with a view to correctly assess the blood demand

Activity 1.2 Establish and maintain a fool proof Inventory system for blood and blood products

Activity 1.3 Train the relevant staff on optimal use of blood

Activity 1.4 Computerization of all relevant information

#### **Objective 2: To establish a Department of Donor Management within National Blood Transfusion Services**

Activities to achieve the Objective:

Activity 2.1 Design a comprehensive and multidimensional national blood donor motivation, mobilization and retention programme

Activity 2.2 Appoint suitable and competent staff with allocation of funds for the purpose of necessary orientation and training

Activity 2.3 Encourage the participation of volunteers in donor motivation efforts

Activity 2.4 Develop process description and related SOPs for voluntary donor motivation, mobilization and retention

Activity 2.5 Establish and maintain proper information system and database

Activity 2.6 Provide the necessary orientation and training to the relevant staff

**Objective 3: To aim at induction and retention of 100% voluntary non-remunerated blood donors for safe transfusion of blood and blood products preferably on a regular basis.**

Activities to achieve the Objective:

Activity 3.1 Organize Blood Donor Motivation Committees at all levels including health professionals, religious scholars, notables and well-reputed people of that community, teachers, councilors, Nazims, philanthropists, etc

Activity 3.2 Conduct regular motivational activities for the promotion of voluntary blood donation including walks and other cultural events

Activity 3.3 Select and motivate the appropriate (low risk) target groups for voluntary non-remunerated blood donation by proper counseling facilities

Activity 3.4 Define and adhere to internationally accepted (WHO) Donor Selection Criteria

Activity 3.5 Ensure adequate and appropriate donor care and satisfaction, as well as donor safety

Activity 3.6 Launch an appropriate mechanism for appreciation and recognition of VNRDs

Activity 3.7 Involve VNRDs in planning, implementation and routine operations and ensure transparency in procedures (Donor Clubs)

Activity 3.8 Computerize donor registry and establish a regular call-up system

Strategy 3.9 Establish mechanism for to provided pre-donation information as well as information and guidance of screening results, taking care of the confidentially issues

Activity 3.10 Ensure appropriate management of the deferred donors (temporary and permanent) and introduce a nation wide register of permanently deferred donors

Activity 3.11 Motivate and convert the family/replacement and paid donors into VNRDs

**Objective 4: To prepare the future generation of blood donors**

Activities to achieve the objective:

Activity 4.1 Introduce the blood safety concept in school curricula

Activity 4.2 Establish Societies and Clubs for awareness about blood Safety

Activity 4.3 Arrange various socio-cultural and academic activities and events on special days, in order to highlight the importance of safe blood

Activity 4.4 Arrange motivation lectures and donation camps at educational institutions, industrial units and public places

Activity 4.5 Celebrate World Blood Donor's Day, to reiterate firmly government's commitment to provide safe and adequate quantities of blood and blood products

**Objective 5: To enhance the level of public awareness on blood safety**

Activities to achieve the objective:

Activity 5.1 Develop socially and culturally acceptable and motivating messages and IEC material using mass media for the general public

Activity 5.2 Coordinate with the Ministries of Health, Education, Culture & Youth, Municipalities, Women Affairs, Religious Affairs, Law & Justice, Interior, Communication, Labor/Manpower and Industries

Activity 5.3 Appoint and train motivators

Activity 5.4 Provide the necessary equipment and transport

**Objective 6: To ensure 100% screening of donated blood for Transfusion Transmissible Infections (TTIs)**

Activities to achieve the Objective:

Activity 6.1 Development of adequate, competent and well-trained human resource to ensure proper screening of blood for TTIs

Activity 6.2 Resource mobilization for adequate and sustainable supply of screening assays and required accessories

Activity 6.3 Perform screening of blood for transfusion transmittable infections according to the National Standards and Guidelines

Activity 6.4 Ensure sustained availability of quality controlled screening assays (test kits and equipment) at affordable cost

Activity 6.5 Establish internal quality control systems and participate in external quality assessment schemes (EQAS)

**Objective 7: To establish the facilities for component preparation, storage, safe transportation and quality control**

Activities to achieve the objective:

Activity 7.1 Develop capacities of Blood Banks to stepwise start producing blood components, to be supplied in the first place, to the tertiary hospitals

Activity 7.2 Ensure provision of necessary equipment along with backup service and maintenance

Activity 7.3 Develop a process description and related SOPs and EOPs for component production

Activity 7.4 Develop National Specifications for blood components to allow proper quality control

Activity 7.5 Establish a proper Quality Control System in various steps involved in processing of blood, i.e. component preparation, storage, issuance, transport, inventory control, recall coordination / communication to reduce wastage of various blood components

**Objective 8: To develop linkages among various stakeholders with a view to ensure efficient and optimal use of Blood and Blood Products**

Activities to achieve the objective:

Activity 8.1 Identify all partners and stakeholders involved

Activity 8.2 Establish a mechanism for periodic information sharing

Activity 8.3 Arrange frequent meetings and seminars involving all partners and stakeholders from public as well as the private sector

**Objective 9: To promote and practice the appropriate clinical use of blood and blood products by discouraging the use of whole blood and promote the use of appropriate amount of clinically required component (reduction of hazards)**

Activities to achieve the Objective:

Activity 9.1 Educate the relevant health professionals on rational use of blood

Activity 9.2 Increase the awareness level regarding appropriate use of blood among general population

Activity 9.3 Training of the prescribers of the blood according to the National Guidelines on Rational Use of Blood and Blood Products

Activity 9.4 Disseminate National Standards and Guidelines widely to the relevant health professionals

Activity 9.5 Ensure the availability of intravenous replacement fluids, plasma expanders

Activity 9.6 Establish Hospital Transfusion Committees to monitor evaluate and regulate the in-hospital practices regarding transfusion medicine

Activity 9.7 Carry out regular audit using requisite tools

Activity 9.1 Carry out the IEC activities with the objective of educating the health professionals as well as community at large

Activity 9.2 Ensure regular monitoring, evaluation and supervision by the Hospital Transfusion Committee every month

Activity 9.3 Ensure availability of blood components in appropriate amount and at all levels

**Objective 10: To ensure safe collection, storage and transportation of blood and blood products.**

Activities to achieve the objective:

Activity 10.1 Introduce a mechanism for authorization and licensing of Blood Banks

Activity 10.2 Design and implement the process descriptions and related SOPs for collection, storage and transportation of blood and blood products

Activity 10.3 Provide the necessary infrastructure along with appointment of suitable and competent staff and ensure regular finances for the purpose

Activity 10.4 Standardize equipment, consumables and transportation system for blood collection and storage

Activity 10.5 Establish a proper storage system for blood and blood products (cold chain) having uninterrupted power supply and back up, and after sales service arrangements

Activity 10.6 Ensure provision of transport containers and vehicles/and all other equipment required for transportation of blood, blood products, blood bags, reagents etc.

Activity 10.7 Ensure documentation at every step of collection, storage and transportation of donated blood

**Objective 11: To develop a comprehensive nation wide haemovillance system to monitor, evaluate and improve clinical transfusion practice**

Activities to achieve the objective

Activity 11.1 Develop the necessary administrative infrastructure (documentation) for a haemovigilance system.

Activity 11.2 Develop a simple reporting system for adverse transfusion events.

Activity 11.3 Identify and train a National Haemovigilance Coordinator as well as Provincial Haemovigilance Coordinators

**Objective 12 To promote universal safety precautions and safe disposal of infectious waste at blood transfusion centers**

Activities to achieve the objective:

Activity 12.1 Develop National Guidelines for infection control practices at Blood Transfusion Centers

Activity 12.2 Develop National Guidelines for safe disposal of infectious waste of blood banks and its incorporation in general guidelines for hospital waste management

Activity 12.3 Human resource development in both infection control practices and waste management

## **CLUSTER 4**

### **Improvement of Processes**

#### **(Monitoring and Evaluation, Statistics, Needs Assessments, Medium and Long Term Planning)**

This cluster focuses on improvement as an ultimate goal of quality management.

Key elements are:

- a) Monitoring and evaluation, statistics and needs assessments
- b) Medium and long term planning
- c) Research and development
- d) Capacity building; continuous education (competence and awareness, CPD)

This cluster contains 3 objectives that translate into 8 strategies:

#### **Objective 1 To carry out a nation wide KAP survey and study to allow design a well focused and sustained public oriented donor motivation and mobilization programme**

Activities to achieve the Objective:

Activity 1.1 Involve Faculties of Sociology and Environmental Psychology of Universities to designing and structuring of an appropriate and targeted KAP survey and study

Activity 1.2 to identify potential low risk groups in the community

Activity 1.3 Conduct studies at various public and private Blood Banks to assess the prevailing practices and standards.

#### **Objective 2: To establish a proper Monitoring, Evaluation and Supervision mechanism**

Activities to achieve the Objective:

Activity 2.1 Appoint internal and external Monitoring and Evaluation teams

Activity 2.2 Develop, monitor and evaluate proper Recording, Auditing & Reporting system in the blood banks

Activity 2.3 Carry out periodic evaluation of the blood facilities by third party and share the results with all partners

Evaluation indicators for each cluster (annex1) will be used to monitor and evaluate proper implementation of the strategic frame work

**Objective 2: To remain abreast of the future developments and build the capacity accordingly**

Activities to achieve the objective:

Activity 2.1 Coordination with the national and international partners with a view to share information regarding latest developments

Activity 2.2 Discuss, develop and implement the national recommendations regarding upcoming developments in transfusion medicine viz. cell separators, aphaeresis products, autologous donations, leukocyte-depleted products, irradiated products and use of inexpensive and effective alternatives

## Annex1

### THE BLOOD TRANSFUSION STRATEGIC FRAMEWORK, 2008-12 OBJECTIVES AND INDICATORS

CLUSTER 1: GOVERNANCE		
	OBJECTIVES	INDICATORS
1.	To establish organizational structures for national, provincial and district Blood Transfusion Services (BTS) including ICT, AJK, FATA and FANA	<p><b>Process indicators</b></p> <p># of seats sanctioned for provincial programme manager, BTS #of seats filled of provincial programme manager, BTS #of provinces having programme manager BTS appointed # of provinces with complete management structure</p> <p><b>Outcome indicators</b></p> <p>% of provinces having programme manager BTS appointed % of provinces with complete management structure.</p>
2.	To assign the roles and responsibilities of planning, coordination, financial management and routine operations at national and provincial levels including ICT, AJK, FATA and FANA.	<p><b>Process indicators</b></p> <p># of provinces/A J K and FANA who are developing and or developed SOPs for planning, coordination, financial management and routine operations # of inspections done by provincial programme managers</p> <p><b>Outcome indicators</b></p> <p>% of provinces/A J K and FANA who have developed and are following SOPs for planning, coordination, financial management and routine operations</p>
3.	To enhance and strengthen the capacity of the public sector to meet blood transfusion requirements of the community	<p><b>Process indicators</b></p> <p># of blood transfusion centers established in each districts and Tehsil # of centers having component preparation facilities</p> <p><b>Outcome indicators</b></p> <p>% of districts with functional blood transfusion centers % of blood transfusion centers in each district with component preparation facilities</p>
4.	To ensure prioritized and sustainable allocation of resources for the blood transfusion services	<p><b>Process indicators</b></p> <p># of advocacy meetings held with national and international agencies</p> <p><b>Outcome indicators</b></p> <p>% of health budget allocated for blood transfusion service</p>
5.	To establish reference centres /laboratories at national and provincial levels including AJK and FANA	<p><b>Process indicators</b></p> <p># of reference laboratories established in each provinces # of trainings held for professional and technical staff of reference laboratories on advance blood banking techniques # of trainings held for professional and technical staff of reference laboratories on quality assurances # of monitoring visits held at the blood banks # of surveys conducted for need assessment of skilled</p>

		<p>manpower</p> <p><b>Outcome indicators</b></p> <p>% of provinces having functional reference laboratories</p> <p>% of professional and technical staff of the reference laboratories trained in advance blood banking techniques</p> <p>% of professional and technical staff of the reference laboratories trained in quality assurance.</p> <p>% of reference laboratories having required skilled staff</p>
6.	To define the roles & responsibilities and strengthen coordination among defense, public and private sectors	<p><b>Process indicators</b></p> <p># of collaborative meetings held between armed forces, public and private sectors</p> <p># of facilities in armed forces, public and private sector which have developed SOPs for coordination and are following it</p> <p># of surveys conducted for evaluation of private blood banks</p> <p># of facilities in public and private institutions given technical assistance</p> <p># of advanced trainings held for professional and technical staff of public and private sectors</p> <p><b>Outcome indicators</b></p> <p>% of professional and technical staff of public and private sectors trained</p> <p>% of facilities in armed forces, public and private sector which have developed SOPs for coordination and are following it</p> <p>% of facilities in public and private sector meeting standards</p>
7.	To ensure the participation and support of private sector, NGOs and other institutions for strengthening of blood transfusion services	<p><b>Process indicators</b></p> <p># of meetings and seminars held between partners</p> <p># of news bulletins published</p> <p>#of workshops held by the professional medical and paramedical organizations on rational use of blood</p> <p><b>Outcome indicators</b></p> <p>% NGOs and private sector health outlets practicing rational use of blood</p>
8.	To define and strengthen the role of Federal, and Provincial Regulatory Authorities for Blood Bank Service	<p><b>Process indicators</b></p> <p># of regulatory authorities formed</p> <p># of trainings of inspectors held</p> <p># of regulatory authorities given legal entitlement</p> <p># of inspectors trained</p> <p># of inspections conducted</p> <p><b>Outcome indicators</b></p> <p>% of regulatory authorities with legal entitlement</p> <p>% of blood transfusion centers inspected by trained inspectors</p>
9.	To enhance the political advocacy and commitment at national and provincial levels (including AJK and FANA) amongst all partners.	<p><b>Process indicators</b></p> <p>#of advocacy meetings, workshops, seminars and conferences held to create political awareness</p> <p># of surveys conducted to collect data on TTIs at federal, provincial, regional and district level</p> <p><b>Outcome indicators</b></p>

		% of politicians having awareness about TTIs, importance of safe blood transfusion, its provision to population and blood transfusion services
<b>CLUSTER 2:RESOURCES</b>		
1.	To strengthen the human capacity of the Blood Transfusion Services in terms of infrastructural support and competency enhancement (knowledge and skills) of the manpower	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of workshops and seminars held by the National directorate for blood transfusion</li> <li># of trainings held by National directorate for blood transfusion</li> <li># of workshops and seminars held by the Technical advisory/ expert sub-committee</li> <li># of technical inputs given by the Technical advisory/ expert sub-committee (like revision of SOPs, guidelines, manuals)</li> <li># of costing exercises conducted to assess financial requirement</li> <li># of surveys conducted for need assessment of skilled manpower</li> <li># of training materials formulated for technical and professional staff</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of professional and technical staff of the blood banks trained</li> <li>% of blood banks having trained and skilled professional and technical staff</li> </ul>
2.	To carry out need physical assessment / verification of the blood transfusion facilities with a view to highlight key deficiencies and identify potentially functional facilities to accommodate regional centres	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of blood banks at proper location and with specified space, staff and equipment</li> <li># of blood banks with properly trained staff</li> <li># of blood banks with vacant posts</li> <li># of blood banks with approved procurement and storage procedure</li> <li># of blood banks with proper recording, auditing and reporting system</li> <li># of surveys conducted for evaluation of blood banks</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of blood banks which had regular internal audit</li> </ul>
3.	To ensure equipment maintenance, availability of consumables and laboratory reagents in the facilities	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of blood banks having clearly defined SOPs and EOPs</li> <li># of laboratory materials having tax subsidy</li> <li># of blood banks with adequate storage facilities</li> <li># of blood banks with adequate stock</li> <li># of trainings held for professional and technical staff in the field of biomedical engineering</li> <li># of meetings and seminars held between partners national and international agencies</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of blood banks following defined SOPs and EOPs</li> <li>% of professional and technical staff trained in the field of biomedical engineering</li> </ul>

4.	Teaching and training of professionals and staff of blood banks	<p><b>Process indicators</b>  # of on job trainings held for professional and technical staff at AFIT, AKU and IBTS  # of refresher trainings held for professional and technical staff  # of training held for professional and technical staff on quality assurances</p> <p><b>Outcome indicators</b>  % of professional and technical staff trained at AFIT, AKU and IBTS  % of professional and technical staff of who had refresher training</p>
5.	To establish a national quality and quality management system at all steps of the blood transfusion services (vein to vein) including procurement and supplies, processing and testing (QC), design and development	<p><b>Process indicators</b>  # of blood banks with GMP/ISO certification/registration  # of blood banks with cGMP and cGLP certification/registration #  of products having product specifications  # of blood banks having monitoring and evaluating team  # of blood banks having trained staff in proper transportation, storage and efficient utilization of available equipments, consumables and laboratory reagents</p>
6.	To motivate and build quality consciousness among all blood programme staff through appropriate training and total quality management in both public and private sectors	<p><b>Process indicators</b>  # of seats sanctioned for managerial and vocational staff  #of seats of managerial and vocational staff  # of on job trainings held for professional and technical staff abroad (in developed countries)  # of refresher trainings held for professional and technical staff abroad(in developed countries)  # of regional centers having advisory panel  # of blood banks which have developed SOPs and performance indicators  # of blood banks with quarterly monitoring against performance indicators.</p> <p><b>Outcome indicators</b>  % of professional and technical staff trained abroad(in developed countries)  % of professional and technical staff of who had refresher training abroad (in developed countries)</p>
7.	To develop and implement uniform instructions and SOPs for all steps of current international Good Laboratory Practice and Good Manufacturing Practice involved in transfusion medicine	<p><b>Process indicators</b>  # of regular trainings held for professional and technical staff of blood banks and clinicians  # of specific trainings held for professional and technical staff of blood banks and clinicians</p> <p><b>Outcome indicators</b>  %of professional and technical staff in blood banks of public and private sector having knowledge of cGMP and cGLP guidelines</p>

8.	To ensure implementation of guidelines at all levels and in all procedures	<p><b>Process indicators</b>  # of hospitals having blood transfusion committees (BTC)  # of hospitals having quarterly meeting of BTC  # of audits conducted by BTC  # of inspections conducted by inspectors of blood banks  # of public and private blood facilities having quality assurance and management team</p> <p><b>Outcome indicators</b>  % of blood banks which had regular internal audit</p>
9.	To ensure sufficient and timely supply of safe blood for transfusion during catastrophes	<p><b>Process indicators</b>  # of blood banks and hospital which have developed disaster management plan  #of banks having computerized list of blood and blood products  #of banks having computerized list of donors base  # of blood banks with adequate storage facilities for donated blood during emergencies  # of blood banks with adequate stock of consumables</p>
<b>CLUSTER 3: CORE BUSINESS</b>		
1.	To carry out a national “Needs Assessment” and set targets accordingly	<p><b>Process indicators</b>  # of studies conducted to assess the blood demand  # of blood banks having proper inventory system for blood and blood products  # of trainings held on optimal use of blood</p> <p><b>Outcome indicators</b>  % staff trained for optimal use of blood</p>
2.	To establish a Department of Donor Management within National Blood Transfusion Services	<p><b>Process indicators</b>  # of workshops held for orientation of staff on donor motivation  # of volunteers recruited for donor motivation</p> <p><b>Outcome indicators</b>  % increase in volunteer donor base</p>
3.	To aim at induction and retention of 100% voluntary non-remunerated blood donors for safe transfusion of blood and blood products preferably on a regular basis.	<p><b>Process indicators</b>  # of blood donor motivation committees established  # of motivational events held(e.g. walks)  # of counseling facilities established to recruits voluntary non-remunerated donors(VNRDs)  # of donor clubs established</p> <p><b>Outcome indicators</b>  % of low risk population aware of importance of safe blood transfusion  % of low risk groups recruited for blood donation</p> <p><b>Impact indicators</b>  % increase in volunteer donor base</p>
4.	To prepare the future generation of blood donors	<p><b>Process indicators</b>  # of safe blood transfusion clubs established in school  #of youth/children reached</p>

		<p># of awareness messages in school magazine  # of motivational lectures and donation camp held  <b>outcome indicators</b>  % of children /youth who have knowledge about safe blood transfusion  <b>Impact indicators</b>  % increase in volunteer donor base</p>
5.	To enhance the level of public awareness on blood safety	<p><b>Process indicators</b>  # of messages aired/published  #of workshops and meetings held with other ministries(health, culture and youth, law etc)  # of motivators trained  <b>Outcome indicators</b>  % of general population aware of importance of safe blood transfusion  % increase in volunteer donor base</p>
6.	To ensure 100% screening of donated blood for Transfusion Transmissible Infections(TTIs)	<p><b>Process indicators</b>  # of on job trainings held for professional and technical staff on proper screening of blood  # of refresher trainings held for professional and technical staff on proper screening of blood  #of blood banks having quality controlled screening assay  <b>Outcome indicators</b>  % of professional and technical staff trained on proper screening of blood  % of professional and technical staff of who had refresher training on proper screening of blood  <b>Impact indicators</b>  % reduction in TTI markers</p>
7.	To establish the facilities for component preparation, storage, safe transportation and quality control	<p><b>Process indicators</b>  # of blood banks having capacity to produce blood components  # of blood banks which have developed SOPs and EOPs for component production  # of blood banks underwent quarterly monitoring  # of blood banks having monitoring and evaluating team  <b>outcome indicators</b>  % of blood banks which had regular internal audit</p>
8.	To develop linkages among various stakeholders with a view to ensure efficient and optimal use of Blood and Blood Products	<p><b>Process indicators</b>  # of meetings held between all partners and stakeholders</p>

9.	To promote and practice the appropriate clinical use of blood and blood products by discouraging the use of whole blood and promote the use of appropriate amount of clinically required component (reduction of hazards)	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of health professional having knowledge about rational use of blood</li> <li># of on job trainings held for professional and technical staff on rational use of blood</li> <li># of refresher trainings held for professional and technical staff on rational use of blood</li> <li># of hospitals having blood transfusion committees (BTC)</li> <li># of hospitals having quarterly meeting of BTC</li> <li># of audits conducted by BTC</li> <li># of trainings held on use of blood components</li> <li>% staff trained for preparation of blood components</li> <li># of messages aired/published on use of blood components</li> <li># of workshops and seminars held on use of blood components</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of health professionals practicing rational use of blood</li> <li>% of health professionals following national standards and guidelines</li> <li>% of blood banks which had regular internal audit</li> <li>% increase in the appropriate use of blood</li> <li>% of general population aware of importance of use of blood components</li> <li>% of blood banks having facilities for component preparation</li> </ul> <p><b>Impact indicators</b></p> <ul style="list-style-type: none"> <li>% increase in Rational use of blood</li> <li>% increase in component therapy</li> <li>% decrease in use of whole blood</li> </ul>
10.	To ensure safe collection, storage and transportation of blood and blood products.	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of blood banks having license</li> <li># of blood banks having clearly defined SOPs and EOPs</li> <li># of blood banks with adequate collection, storage and transportation facilities</li> <li># of blood banks having trained professional and technical staff for adequate collection, storage and transportation facilities</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of blood banks following defined SOPs and EOPs</li> <li>% of blood banks having adequate collection, storage and transportation facilities</li> </ul>
11.	To develop a comprehensive nation wide haemovillance system to monitor, evaluate and improve clinical transfusion practice	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of blood banks having infra structure for haemovigilance system</li> <li># of blood banks having reporting system for adverse events</li> <li># of trainings held on haemovillance system</li> </ul> <p><b>Outcome indicators</b></p> <ul style="list-style-type: none"> <li>% of provinces having trained haemovillance coordinator</li> </ul>
12.	To promote universal safety precautions and safe disposal of infectious waste at	<p><b>Process indicators</b></p> <ul style="list-style-type: none"> <li># of on job trainings held for professional and technical staff on</li> </ul>

	blood transfusion centers	infection control and waste management # of refresher trainings held for professional and technical staff on infection control and waste management #of blood banks having quality controlled screening assay <b>Outcome indicators</b> % of professional and technical staff trained on infection control and waste management % of professional and technical staff of who had refresher training on infection control and waste management % of blood banks following national guidelines for infection control and waste management
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**CLUSTER 4: IMPROVEMENT OF THE PROCESSES**

1.	To carry out a nation wide KAP survey and study to allow design a well focused and sustained public oriented donor motivation and mobilization programme	<b>Process indicators</b> # of KAP studies conducted to target donors motivation and mobilization programme # of studies conducted to assess the prevailing practices and standards at various public and private blood banks <b>Outcome indicators</b> % of programmes formulated for donor motivation and mobilization
2.	To establish a proper Monitoring, Evaluation and Supervision mechanism	<b>Process indicators</b> # of blood banks with proper recording, auditing and reporting system # of surveys conducted for evaluation of blood banks by third party <b>Outcome indicators</b> % of blood banks which had third party audit
3.	To remain abreast of the future developments and build the capacity accordingly	<b>Process indicators</b> # of meetings and seminars held between national and international partners # of workshops and meetings held to develop national recommendations for upcoming development in transfusion medicine