

MALAWI BLOOD TRANSFUSION SERVICE

BACKGROUND

The WHO World Health Assembly of 1975 through its resolution WHA 28.72 declared that 'the safety and adequacy of blood and blood products is the responsibility of National Governments; blood donation should be based on voluntary non remunerated basis from low risk population groups and that the management of the services can be delegated to a non-profit organisation'

The spread of HIV through the transfusion of blood and blood products especially among Haemophiliacs in the 1980s especially in the USA, Canada, France and Japan, brought to the fore the issues of blood safety as an integral part of HIV prevention programs.

The alarming situation of blood transfusion safety in Africa led to the adoption of resolution AFR/RC44/R12 in 1994, which urged member countries to 'take urgent measures to formulate National Blood Transfusion Safety Policies and to mobilize resources for the development of the required infrastructure for the transfusion services'. In line with all these global and regional trends, the Malawi Government established the Malawi Blood Transfusion Service (MBTS) Trust with the mandate to ensure the adequacy and safety of blood and blood products for all those in need in all hospitals in the Country.

The MBTS Trust Board is Chaired by Justice Anastazia Msosa and is comprised of Board Members from Ministry of Health, Ministry of Finance, Ministry of Education, CEO's of private sector companies, Blood Donor Association of Malawi representative, Malawi Red Cross Society, and non voting membership from the service comprising Medical Director and Finance and Administration Director. The goal of MBTS is to provide a safe and adequate supply of blood and blood products and prevent the spread of HIV and other diseases transmissible by blood transfusion. Unsafe blood transfusion is the most efficient way of transmitting HIV and other diseases.

MBTS was established in late 2003 with financial assistance from the European Commission for a 5 year period, which came to an end in 2006. A 3-year extension, to provide additional funding mainly for the construction of three (3) Blood Transfusion Centres (Blantyre, Lilongwe and Mzuzu) was made. (These are currently under construction in all the three regions of the country and are expected to have been completed by the end of this year). The MBTS now receives funding for its operations from the Government of Malawi, The National AIDS Commission and from its cost recovery program. Centers for Disease Control and Prevention (CDC) of the United States of America, provides additional funding for specific programs through its Malawi Office.

MBTS started operations in January 2004 at the temporary headquarter centre in Galaxy House, Blantyre. A second centre was opened in Lilongwe in June 2005. The centre in Mzuzu will be opened when the new buildings are completed.

WHY A NATIONAL BLOOD TRANSFUSION SERVICE?

For a long time, Hospitals in Malawi had been relying on family replacement blood donors whereby the hospitals used to tell patients' guardians to look for family members to come to hospitals to donate blood for their sick relative. This system is inadequate in a number of important ways:

- 1 Much time was being wasted from the time the need for blood transfusion had been identified to the actual transfusion taking place.
 - 1.1 Time was lost during the process of looking for family members who would not necessarily be at the place one expected them to be;
 - 1.2 getting them to hospital
 - 1.3 testing for their blood groups.
 - 1.4 testing for infectious agents.
 - 1.5 conducting a blood donation session.
 - 1.6 This system was very challenging for people living in rural areas who are in majority in Malawi. (The delay in getting blood meant that lives were being lost in emergency situations). Furthermore, inability to get family members led to a system of hidden paid donation.
- 2 Research conducted in all parts of the World has persistently shown that paid donors and family replacement blood donors to be unsafe blood donors as they tend to have a higher prevalence of HIV and other transfusion transmissible infections when compared with Voluntary Non-Remunerated Blood Donors (VNRDs).

The Government of Malawi established the Malawi Blood Transfusion Service (MBTS) in order to address this *inaccessibility* of safe blood.

Blood Safety

Blood safety is achieved through encouraging voluntary non-remunerated blood donation among low risk population groups; the encouraging of these to become regular blood donors; the testing of donated blood to international standards; the making of blood products; ensuring that quality assurance systems are in place in all aspects of MBTS' operations and the promotion of the appropriate clinical use of blood and blood products.

There is the **Public Relations Department (PRD)** responsible for recruiting and retaining suitable blood donors and the **Blood Donor Department (BDD)** for collecting blood from voluntary non-remunerated blood donors. The PRD arranges and gives a motivational talk which also informs the suitability criteria for blood donation. Potential blood donors are encouraged to donate if they do not engage in risk behaviour among others. There are information leaflets. On the day for blood donation, a nurse sits down with the prospective blood donor and engages him/her in conversation. If the prospective blood donor's behaviour is risky, he/she will be prevented from donating. Already known high risk population groups are not targeted for blood donation recruitment e.g. prisoners and commercial sex workers.

The collected blood is tested using highly sensitive reagents and techniques. Blood is tested using ELISA for HIV (p24 Antigen and antibodies to HIV 1&2); for Hepatitis B

surface Antigen, for Hepatitis C (anti-HCV antibodies), TPHA for syphilis and blood films for Malaria. The use of ELISA techniques, Abbott Murex reagents and the testing for HIV p24 antigen has improved the sensitivity of test results. P24 antigen, hepatitis C and malaria was not routinely being tested for in donated blood before.

Quality assurance systems in place ensure that set standards are adhered to at all times. All crucial procedures at MBTS are done according to SOPs (Standard Operating Procedures), there is a quality department that does regular audits and tests blood products to international specifications.

MBTS also encourages appropriate clinical use of blood to prevent unnecessary transfusions and its potential risks. This is being done through training, Hospital Transfusion Committees and the supporting of the development of blood and blood products transfusion guidelines.

The other aspect to safety is in testing for blood groups. MBTS tests using the tube technique, does antibody screen-basic (routinely) as well as some specialised with panel cells including testing for weak RhDs. MBTS promotes and assists with proper transportation, storage and x-matching techniques of blood and blood products. Laxity in these areas poses instant danger to safety and loss of lives.

MBTS is routinely producing blood products viz: paediatric and adult red cell concentrates, Fresh Frozen Plasma, Cryoprecipitate and platelet concentrates. Blood products have improved transfusion practice and has made possible the treatment of conditions that could not be managed in Malawi before.

OTHER HIV-AIDS PREVENTION ACTIVITIES

MBTS encourages all blood donors to know their test results and encourages the youth to form blood donation clubs called Club 25. These are clubs of youths aged 16-25 years who pledge to donate blood at least 25 times in their lifetime. This sets up a target and purpose for them to achieve and helps them to safely go through adolescence to grow into safe and informed young adults. Apart from assisting in ensuring the safety of blood, these approaches promote safe life-styles and contribute to the behavioural means of HIV prevention in the country.

INCREASED ACCESIBILITY OF BLOOD DONATIONS BY VNRDs

There are blood donor recruitment campaigns and blood collection sessions taking place on a daily basis. MBTS has 5 mobile blood donor teams that go out to schools, colleges, places of worship and work places on a daily basis to conduct blood donation clinics. This is taking place in Blantyre, Chiradzulu, Mangochi, Zomba, Mwanza, Neno, Thyolo, Mulanje, Phalombe, Chikwawa, Balaka and Machinga in the Southern Region and in Lilongwe, Mchinji, Dedza, Salima, Dowa, Kasungu, Ntcheu, Ntchisi, Nkhotakota in the Central Region and Mzuzu in the Northern Region. This has improved the amount of blood that is being collected. The collected blood is tested, and distributed to all hospitals. This means that hospitals have ready blood to give to patients as and when the need arises. This eliminates any waiting period and saves lives that were being lost as a result of delays in getting blood.

ACHIEVEMENTS

The following are some of the achievements of MBTS since it commenced operations in January 2004;

- MBTS recruited and trained 114 staff in all departments of administration, laboratory and clinic blood donor nursing staff;
- 2 temporary centres have been established with 2 static blood donor centres, 5 mobile bleeding teams, 2 component production laboratories, blood cold chain system for providing blood to all hospitals and a Quality Management System;
- MBTS performs well in the External Quality Assurance Scheme in participates with a WHO Collaborating Centre in Australia.
- MBTS has started a national quality assurance scheme in immuno-haematological testing.
- More than 464 nurses, 120 Physicians/Clinical Officers; 95 laboratory staff and 176 students of biomedical sciences have been trained in transfusion practice;
- MBTS hosts and carries out training of personnel working in National Blood Services of some Countries in Southern Africa.
- In patients admitted to Queen Elizabeth Central Hospital (QECH) a decrease in mortality recorded of:
 - 60% in seriously ill children and
 - 50% in women, as a result of pregnancy related blood loss.
- In a newspaper interview Prof. E. Molyneux, Head of Paediatrics at QECH referred to the MBTS as: 'the one piece of good news,' which has made blood available, such that 'we (doctors etc) can now save children's lives' (Weekend Nation of 15-16 October, 2005, page 21) (annex 1).
- More than 80,000 units of blood have been collected from January 2004 to December 2007 with a target of 50,000 per annum by 2009;
- MBTS invited by WHO and International Federation of Red Cross and Red Crescent Societies (IFRCRCS) to international meetings to present MBTS as a model;
- Recognized by WHO as a model Service in the management and organisation of a National Blood Transfusion Service in all developing countries. it was featured in the World Blood Day's celebration for 2005 (Annex 2)