INTRODUCTORY NOTES

Some years ago, when discussing the different methods of 'blood donor recruitment' used in the UK, a National Blood Service colleague told me about an article published in the Times Newspaper in 1950 called 'The growth and uses of a vital National Service'.

The article, written by the newspaper's 'medical correspondent' is of historical interest in that it provides an excellent example of one of the most important post-war methods of blood donor recruitment, critically examining war-time compared with post-war blood donation and exemplifies the need for continued support of "this vital service". The article also however encapsulates some of the information that was known at that time about blood transfusion, providing for example accurate information about the newly defined 'Rhesus factor'.

This well written and researched article provides an excellent example of one of the types of blood donor recruitment methods used in the 1950s and 1960s in the UK when advertising methods for potential new blood donors was limited to newspaper articles, posters, voluntary organisations and personal approaches from volunteers.

BLOOD TRANSFUSION
THE GROWTH AND USES OF A VITAL NATIONAL SERVICE

By Our Medical Correspondent
Published in the Times Newspaper on Tuesday October 10th 1950

The value of the transfusion of blood in a wide variety of diseases and medical catastrophes is being increasingly recognised, and there is an urgent need for more volunteers to give blood for this purpose. The development of what is now the National Blood Transfusion Service and the discoveries and advances in this field in the past few years constitute a remarkable chapter in medical history.

In ancient times and even in the middle-ages it was popularly believed that drinking the blood of the strong would give strength and that the blood of the young would rejuvenate the elderly. By the beginning of the seventeenth century the possibility of conveying fresh blood into the circulatory system was discussed with the added stimulus with William Harvey's publication on the heart and circulation in 1628. An entirely theoretical account of blood transfusion appeared in Italy about 1655, and a few years later the Royal Society in London was discussing the transference of blood from animal to animal, as recorded by Pepys.

An unfortunate series of attempts in France to transfer animal blood to humans brought the whole subject into disrepute. There follows a long gap until the end of the year 1818, when, as is now generally accepted, the first successful human to human transfusion took place in London. Slow progress was made and many difficulties were encountered.

Transfusion was used in the Franco-Prussian War, but it was not until the early years of the present century that important discoveries revealed that blood from a donor must be carefully "matched" with the blood of the recipient if serious trouble

was to be avoided. The original grouping of blood into four main groups still stands, but other independent blood group systems, some most complex, have been discovered, and with this an explanation of hitherto obscure disorders.

WAR TIME STIMULUS

The First World War gave great stimulus to methods of blood transfusion. Apparatus was improved and devises to prevent clotting were discovered. Again there followed a period of relatively slow progress, but in the years just before the second war a simplification of the apparatus on the one hand, and the elaboration of methods for slow and prolonged transfusion, on the other, made it possible for the beginnings of a national service to be contemplated.

Again the stimulus of war produced great advances, especially in methods of blood preservation. At Dunkirk medical officers came reluctantly off the beaches with their precious transfusion sets and bottles of blood balanced on the head as the only salvage of that human endeavour. By D Day and after blood was almost as easily obtainable commodity in the medical services as “hot sweat tea”, or sulphonamide tablets. The low death rate among casualties owes much to the blood transfusion service.

Before the position to-day is examined, however, it is necessary to go back to 1921 when a hospital in London asked the secretary of a division of the British Red Cross Society to find a volunteer donor. The secretary was the late Percy Lane Oliver, and from this emergency request grew the idea, which he fostered and saw grow into full maturity, of a blood transfusion service through which blood donors could be obtained, of the right group, when required. This was the first transfusion service in the world, and the Greater London Red Cross Blood Transfusion Service still supplies donors – over 2000 in the first half of 1950 – in response to special calls for direct transfusion from donor to patient.

In 1939 and 1940 regional transfusion centres were opened in England and Wales by the Ministry of Health, the Medical Research Council, and the War Office. They were chiefly to provide preserved blood for civilian and service casualties, but they were also able to provide a transfusion service for the ordinary needs of the hospitals. After the war the National Blood Transfusion Service came into being. It is now administered by the Regional Hospital Boards under the National Health Service, and the volume and scope of the work have steadily grown.

YOUNG DONORS WANTED

In 1944 over a million donors were enrolled on the regional panels of the national service. This had fallen to just over a quarter of a million two years later and, although there has been some improvement, the aim of 600,000 donors still not been reached. The Ministry of Health especially wants young donors, so that the future of the service can be assured, but the age limits are still 18 to 65.

In each of the regions of England and Wales – 12 in all, including two in London – there is an organisation for collecting blood. Sessions are held in suitable towns, each donor gives just under a pint of blood, which is then taken to the regional laboratory for testing and storage in a “blood bank”. Hospitals of any size usually act as “area blood banks” and blood is available readily even in remote country districts.

The “whole blood” if not issued for use within three to four weeks at the most is returned to the centre, the red cells are removed, and the remaining liquid is forwarded to a central drying plant, where it is reduced to a fine powder. This dried “plasma” can be stored almost indefinitely in temperate climates and, reconstituted

with additional fluid, used in emergencies until fresh blood or whole blood can be obtained.

Blood transfusion would be a much simpler affair if everybody's blood could be used for everybody else, but just as people have differently coloured hair and differently coloured eyes, so even within the same racial groups there are differences in blood. Blood serum may contain substances which will cause the "clumping" of certain red cells. Red cells may contain substances making them liable to be "clumped" by certain types of blood serum. Blood taken by the service is "grouped" by testing against stock sera; each donor has his blood group on his card. A donor's blood is directly matched with the blood of the recipient before transfusion.

RHESUS FACTOR

The most famous of the more recently discovered blood group systems is part of the "rhesus" story. The red blood cells of most Europeans (six out of seven) contains a "rhesus factor", so-called because it is similar to one found in the red cells of the common rhesus monkey. If such cells are introduced into the blood stream of one of the minority who lack such an attribute, no immediate trouble arises, but the invading cells stir up resistance in the form of defence substances, which will attack rhesus cells if a second transfusion is necessary

A woman without the rhesus factor (rhesus- or Rh-negative) whose husband's red cells contain the rhesus factor may produce a baby possessing the rhesus factor (Rh-positive). Interchange of blood occurs before the baby is born and, although not causing trouble with a first baby, may produce serious reactions for the baby in subsequent pregnancies. This does not always happen, but careful testing of the mother's blood during pregnancy is now carried out at many centres, so that precautions can be made for dealing with the emergency, should it arise.

Babies who hitherto were seriously ill and often died as a result of this incompatibility of blood can now can now be treated by a complicated blood transfusion procedure which gradually removes all their own blood and replaces it by that of s suitably chosen donor. The blood of donors without the rhesus factor is especially in demand for this special type of treatment.

Blood obtained from donors can also be used to make valuable derivatives. Parts of the clot of blood are used to promote clotting in certain delicate operations on the brain or on the nerves. A special part of the plasma called "gamma globulin" is believed to transmit the bodily resistance developed to future attacks after an attack of measles, and is sometimes in demand when a very ill child must be protected against an attack of this disease. Further developments in this field are under investigation.

The "trade" in blood to-day, if such a term can be applied to a purely voluntary transaction, has become an important business. A large hospital that might have used 80 blood donations in a year before the war may now require this number in a week. Severe haemorrhage and shock, after accidents or complicated maternity cases , burns, severe anaemia, acute infections in young children are some of the conditions for which blood is vitally necessary. Operations can also be undertaken with greater confidence since, should say, anaemia be present, the patient can be deliberately transfused before he is subjected to the operation.

MORE VOLUNTEERS

Comparatively little is heard of the National Blood Transfusion service, and it is easy to assume that the supply of blood and of blood derivatives is accomplished without difficulty. A constant supply, however, of new donors and the continued

support of those already on the donor panels are indispensible conditions of the efficient functioning of the service and of its success in meeting the growing demands now made upon it.

The service is also responsible for the supplies of plasma used by the armed forces and for provision of blood to service hospitals in this country. In another war the service would immediately become one of the main “medical defence services” in the country and the task of supplying transfusion fluids in response to increased demand would become considerably heavier. The present needs of the hospitals and of the armed forces are only just being met. It is only prudent to increase the reserves behind the service by enlarging the donor panels.

Donors can be assured that no harm will come to the, and the present organization ensures there is an economical use of this precious substance Offers can be made at regional transfusion centres, the addresses of which can be found at post offices or through the local offices of several voluntary organisations, such as the St John Ambulance Brigade, the British Red Cross Society, W.V.S., or Toc H. More volunteers are needed so that donors on the register may not be called upon too often. Two hundred thousand extra opportunities exist for a unique form of generosity which costs the giver nothing.