Annual Report 1995

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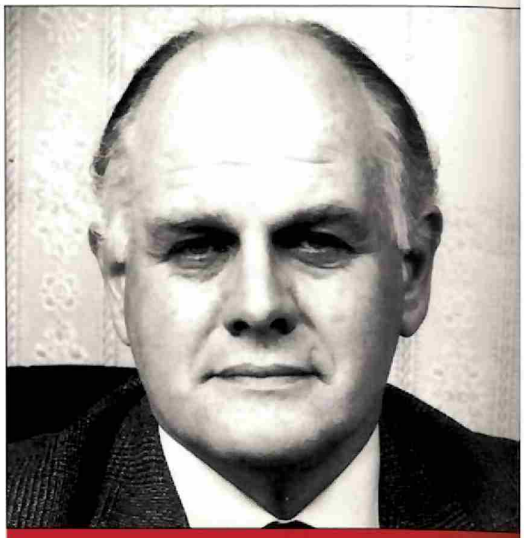
The role of the National Blood Service is to provide a safe, timely, high quality service to patients in an efficient manner. This requires the provision of high quality advice and support services to clinicians in order to promote best clinical blood transfusion practice. It also requires the promotion of the voluntary donor ethos through high levels of donor care.

Chairman's Statement

The National Blood Service is a unique organisation within the NHS, relying completely on the generosity of voluntary unpaid donors to provide the blood which patients need. Although it is recognised as one of the best in the world, there is still room for improvement. It is primarily to achieve this improvement that from 1 April 1994 the National Blood Authority was given responsibility for what was previously known as the National Blood Transfusion Service.



Chairman
Sir Colin Walker OBE

The new arrangements bring the planning, co-ordination and management of all aspects of the nation's blood supply under a single national organisation for the first time. It is our intention to use all the advantages this gives to improve every area of our service. We will ensure that the increasing needs of hospitals for blood are met by increased donations and more effective use of the blood collected. The care of donors will be improved and the service made more convenient for them. The service will be managed better and will be more effective.

This is not a simple task or one that can be achieved overnight. The proposals which the National Blood Authority submitted for public consultation during 1994/95 provide the framework for future development.

Chairman's Statement

In order to keep informed of the views of our staff and those we serve, I regularly visit blood collection teams, blood centres, BPL and IBGRL and I would like to pay tribute to all the staff of the blood service for the excellent work they do. I have spoken to many donors during these visits and I believe I have a good idea of what they want – a top quality service that is safe, reliable and convenient. My discussions with hospitals suggest that, in essence, they too require a service with the same characteristics.

I am confident that our staff have the ability to deliver these expectations by building on the strengths of our predecessors. This report of the National Blood Authority for the year 1994-95 demonstrates that we have a strong base for future progress.

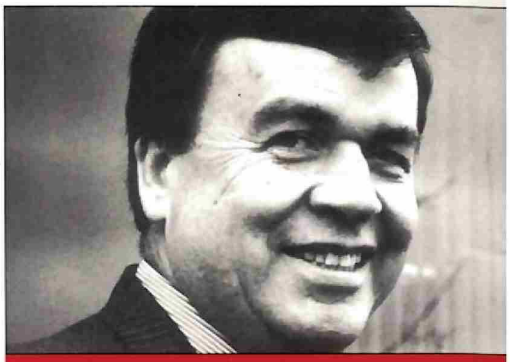
I look forward to reporting further progress which will be made in 1996, our 50th anniversary year.

GRO-C

SIR COLIN WALKER OBE
Chairman

Chief Executive's Report

1 April 1994 was a landmark in the history of the blood service. On that date the National Blood Authority, which already managed the Bio Products Laboratory (BPL) and the International Blood Group Reference Laboratory (IBGRL), took over responsibility for what was previously known as the National Blood Transfusion Service.



Chief Executive
John Adey

Although called a "national" service, the National Blood Transfusion Service was in reality a loose federation of regional services managed by regional health authorities and co-ordinated on professional issues through a small national directorate. That organisation had been appropriate to its time but there was a growing recognition among all those associated with the Service that an effective response to the growing demands of the developing NHS could only be given by a seamless, nationally managed and co-ordinated organisation. The establishment of the National Blood Service encompassing the transfusion centre network, BPL and IBGRL and managed by the small National Blood Authority head office in Watford has provided the long sought after solution.

Chief Executive's Report

The aims of the National Blood Authority are to:

- improve the service to patients – for whom the service exists
- improve the service to donors – upon whose generosity the service depends
- improve the way the blood supply is used – to ensure that the donor's gift is used effectively
- improve the safety and quality of blood and its components.

Although most of my comments will focus on the initial steps in reorganising the National Blood Service to achieve these aims, it is important to recognise that throughout this year the routine work of the blood service has continued unabated and hospitals have placed unprecedented demands on our services. The review of activities contained later in this report gives some indication of the scale and variety of the task. That these demands have been satisfied is a significant achievement. The success in doing this, whilst at the same time considering and planning organisational and cultural changes, is due in large measure to the efforts of the staff.

The National Blood Authority published its proposals for the future of the National Blood Service in September 1994. Although not radical in content, they provided a sound organisational base for the future development of the service. They had been many months in the making and

Chief Executive's Report

came from many working groups of staff and had the support of the senior members of the Service. Three basic principles underpinned the work on reorganisation:

- total commitment to a system of voluntary unpaid donation
- safety and quality are imperatives
- the blood service is and will remain an integral part of the NHS.

Public consultation on the proposals lasted until November 1994. The proposals attracted a great deal of public interest, many comments were received and there was considerable media attention. There was general agreement that the direction of the proposals, i.e. that blood is a national rather than a solely local resource, was right and it is apparent that we have retained the confidence of blood donors who, as this report shows, have continued to donate in record numbers.

Although this report covers only 1994/95, its date of publication allows me to record the fact that the Secretary of State for Health announced his approval of our revised proposals in November 1995. We can look forward now to concentrating on the job for which we were established.

1994/95 has also been a significant year for BPL and IBGRL. Reviews of their activities are

Chief Executive's Report

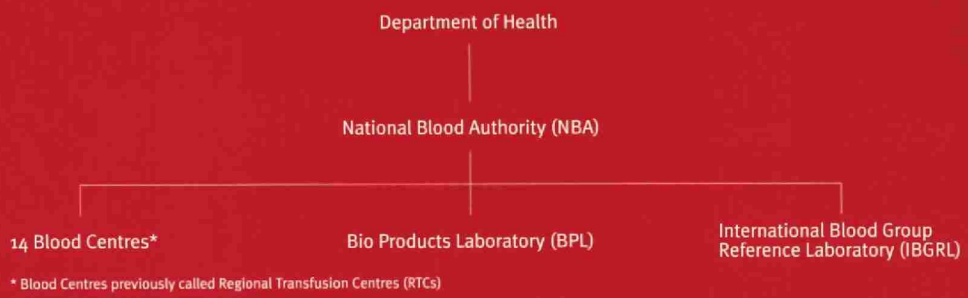
contained later in this report but it is already apparent that benefits have accrued to all parties by establishing the new National Blood Service. Undoubtedly our decisions on all aspects of the service are improved by, for the first time, having all the elements of the service sitting around the same table and contributing to the decision-making process.

I am pleased with the progress that has been made in the first year of the new National Blood Service. There is no doubt that the co-ordination that a national perspective has brought is already providing significant benefits, not least in our ability to manage the blood supply more effectively and to get blood where it is needed when it is needed.

GRO-C

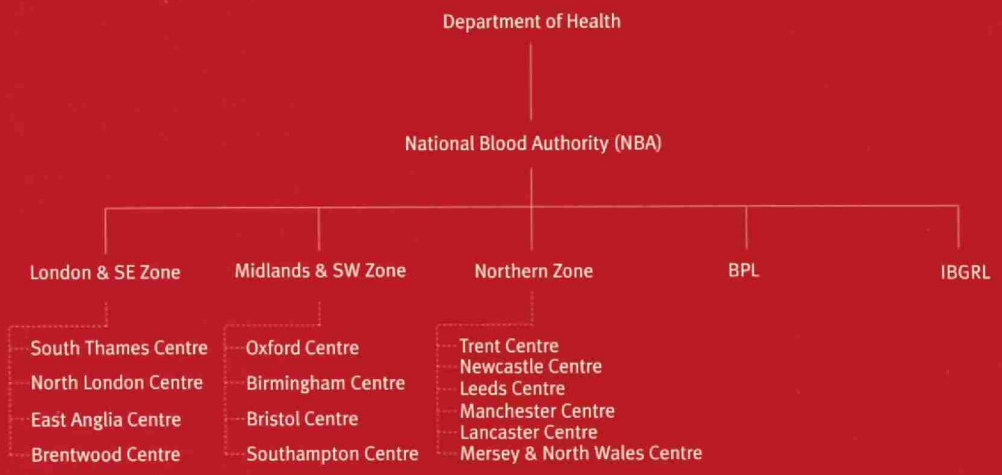
JOHN ADEY
Chief Executive

Organisation of the National Blood Service from 1 April 1994



* Blood Centres previously called Regional Transfusion Centres (RTCs)

Blood Service Reorganisation (agreed November 1995)



Review of Activities: Blood Collection

A single blood donation can be used to help several patients by being divided into its main components – red cells, platelets and plasma. Most patients are given transfusions of red cells or platelets: only a small number of patients now receive transfusions of whole blood. Plasma may be used clinically for patients although most is processed by the Bio Products Laboratory to produce plasma based products such as factor VIII and Albumin (see page 15).

Blood collection is the start of the chain that links the donor to the patient. In the United Kingdom blood donation is entirely voluntary and donors receive no payment. This basic principle means that our blood supply is among the safest in the world.

Around half the staff in the blood service are employed in blood collection: organising sessions, keeping records and caring for donors. In 1994/95 nearly 80 mobile teams conducted 23,000 collection sessions thoughout England and North Wales in church halls, on employers' premises, at permanent blood service sites or in specially built vehicles called bloodmobiles. Most donors were invited to donate two to three times in the year.

1994/95 continued to see the shift away from workplace collection. There are many reasons for this trend, as some employers face pressures on space, mergers, moves and downsizing. The National Blood Service launched initiatives to counter this trend such as the increased use of bloodmobiles at smaller workplace venues and the introduction of corporate award schemes that recognise the valuable assistance many employers give the service.

Donors

In 1994/95, over 2.2 million people gave their blood to help others in need. An additional 24,395 donated their plasma or platelets by a process called apheresis (see page 11). Together they made sure that the National Blood Service was able to meet the growing demand for blood and plasma-based products from 381 NHS hospitals.

Regular donors continued to make exceptional contributions to the blood service, with many receiving special recognition of their long service during 1994/95.

The National Blood Service worked hard to retain its existing donors during 1994/95. Even so, an estimated 10 to 15 per cent were lost to the service, mainly due to ill health and people reaching the age when they are no longer eligible to give blood.

To make up for this loss – and meet the ever increasing demand for blood and plasma-based products (demand for red cells alone increased by 3.4 per cent) – campaigns to recruit new donors were run throughout the country.

In April 1994 Hilda Leggett received a special award to mark 25 years as a plasma donor. During this time, Hilda made the equivalent of 1,129 donations and gave over 300 litres of her plasma which, because it contains a special antibody, was used to prevent blood disorders in new born babies.

Recruitment

In the South Thames region the emphasis was on recruiting donors from African and Afro-Caribbean communities to combat the severe shortage of blood needed to treat people with sickle cell anaemia.

Some people with sickle cell anaemia – a blood disorder that is mainly found in people of African or Afro-Caribbean origin – need frequent blood transfusions. These transfusions can cause their bodies to produce antibodies that react with

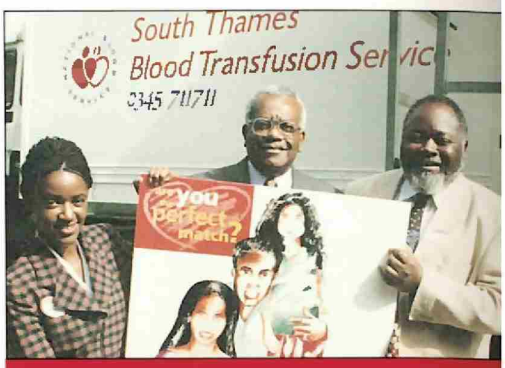
donor blood. To prevent this happening suitable blood has to be found from donors of the same ethnic group.

With 800 known sickle cell patients in the South Thames region and only 245 African and Afro-Caribbean donors, the local blood service was not able to meet demand for matched blood.

A campaign to recruit more African and Afro-Caribbean donors was launched in September 1994 with a high-profile press conference. The case of four-year-old sickle cell sufferer GRO-A whose transfusion had to be postponed because of insufficient supplies of U negative blood, was used to illustrate the need for more African and Afro-Caribbean donors to come forward.

The cost of the media campaign and the production of supporting literature to inform and recruit new donors was £46,500. The results were impressive: within 12 months of the launch the number of African and Afro-Caribbean donors registered in the South Thames region had risen by a massive 1140 per cent, from 245 to 3037.

Special recruitment campaigns and sessions were also successfully organised in Birmingham and Bristol with the help of local community groups.



South Thames campaign to recruit African and Afro-Caribbean donors was supported by sickle cell health professionals and ITN's Trevor MacDonald (centre), MP Bernie Grant (right) and Blue Peter's Diane Louise Jordan. Over 50 journalists covered the launch.

Advertising

National advertising was used to support the recruitment of donors and to encourage existing donors to keep their appointments. In 1994 the National Blood Service ran a campaign for the first time in national newspapers to help achieve a target of 10,000 donations a day. A 'daily blood index' was used to indicate how much more blood was needed each day. The campaign won three consumer press advertising awards.

Local radio advertising proved particularly effective in 1994/95. A new series of radio tapes was produced for the national Christmas campaign featuring real patients saying thank you to donors – the 'unsung heroes' who had helped to save their lives.

In Shelfield a series of radio advertisements developed in conjunction with Radio Hallam won national and international recognition.

The award-winning daily blood index campaign drew attention to the constant, daily need for blood.

Review of Activities: Blood Collection

Table 1: National blood collection statistics for 1994/95

	1994/95
Donors *(number)*	
Whole blood	2,221,883
Apheresis	24,395
Collection *(units)*	
Whole blood	2,305,264
Apheresis[1]	108,620
Autologous donation[2]	633
Bone	1,811
Stem cells	1,269
Sessions *(number)*	22,913
Hospitals served *(number)*	381

Table 2 Blood components and products produced in 1994/95

	1994/95
Red Cells *(units)*	2,156,245
Platelets[3] *(therapeutic doses)*	201,530
Clinical fresh frozen plasma *(units)*	277,736
Cryoprecipitate[4] *(units)*	48,450
Plasma (produced for BPL) *(tonnes)*	517

1 Apheresis is a special procedure in which a donor is linked to a machine that separates blood into its components and returns the red cells to the donor. Donors may be asked to give platelets or plasma. Because donors get back their red cells, they can donate every few weeks if needed.

2 Autologous – or self – donation takes place before planned surgery. The patient gives his or her own blood at intervals over a period of two to five weeks before the operation.

3 Platelets are clotting agents that are used to support patients undergoing chemotherapy. The success of the modern treatment of leukaemia by bone marrow transplantation depends on a continuous supply of donated platelets.

4 Cryoprecipitate is part of plasma. It contains factor VIII and was originally used to treat haemophilia before concentrates of factor VIII were developed. It is now used for the treatment of Disseminated Intravascular Coagulation, a malfunction of the blood clotting process.

Review of Activities: Clinical and Laboratory Services

Each individual donation is screened and tested to ensure that it is safe. More than nine out of ten donations go through a process which divides the blood into its main components.

The 70 medical staff in the blood service carry out a number of important roles. They provide clinical advice to their colleagues in hospitals on transfusion medicine and component therapy, and are often involved in the treatment of individual patients. They also play a key role in all aspects of the work of a blood centre, for example, the provision of specialist services such as therapeutic apheresis, and donor care. They are responsible for co-ordinating medical standards and practice across the blood service and for the important part played by the service in medical education and the training of laboratory staff. They also undertake, with scientific and laboratory staff, the research programme which is vital to the future safety, quality and development of the blood service.

About a third of the staff in blood centres are scientific and laboratory staff, the second largest group of staff in the service. They screen and test every blood donation to ensure that our blood supply continues to be among the safest in the world. The work ranges from tests conducted on individual donations to the large-scale machine grouping of hundreds of donations at a time. Scientific and laboratory staff are involved in many specialist services provided by blood centres to hospitals such as complex reference work to match patients' blood samples with suitable blood components.

Having been screened and tested the blood is ready for issue to hospital blood banks. It is kept in the blood bank in each blood centre until it is required by hospitals. At any one time hospitals hold about two thirds of the country's blood supply with blood centres acting as reserve banks to top up hospital stocks when required.

Testing

Clinical and laboratory staff working at blood Centres throughout the country processed and tested just under 2.4 million units of blood and plasma collected during 1994/95.

All donations were routinely tested for blood group so that they could be matched to the special needs of patients; and for HIV 1 and 2, hepatitis B and C, and syphilis to ensure the safety of the blood supply.

Investment

In 1994/95 the National Blood Service continued to invest in its laboratories and its staff to maintain its national and international reputation for supplying blood components of the highest quality and safety.

A £0.5 million refurbishment of the blood processing laboratory at the Birmingham Centre – the second largest in the U.K – was completed within three months. The refitting was planned to minimise disruption and ensure continued production throughout the period of building and commissioning.

Review of Activities: Clinical and Laboratory Services

Bone is supplied by hospitals from patients who undergo orthopaedic surgery. After testing, processing and a period of quarantine, the deep frozen bone is supplied for re-use by orthopaedic surgeons in a number of operations such as securing loosened hip replacements and grafting to repair damaged limbs and spines, as well as in dental applications.

The refurbishment has allowed the laboratory to implement more effective working practices and improve workflow planning.

A better match

A new flow cytometer costing £45,000 was installed in the histocompatibility and immunogenetics department at the blood centre in Oxford enabling it to type platelets more precisely.

The benefits to patients of this new equipment were demonstrated in September 1994 when a patient developed a severe reaction to regular transfusions of blood and platelets she needed as part of her treatment for Hodgkin's lymphoma, a form of cancer of the lymphatic system. The Oxford centre was able to prevent these adverse reactions by providing matched platelets which later in the course of treatment enabled the patient to have a successful bone marrow transplant.

Better quality

The South Thames centre also made its mark in reducing adverse reactions to platelet transfusions, reaching the 1994 finals of the Hewlett Packard Golden Helix Award for Quality in Healthcare.

Using a step-by-step approach, staff at the South Thames centre were able to identify the source of potential problems by looking at the way platelets were collected, transported, processed, stored and administered to patients.

Staff at all levels were involved in the project which led to the introduction of a patient-focused culture, new working practices, written standard operating procedures, better staff training and a new method of producing platelets by pooling them from a number of donations.

The changes reduced adverse patient reaction from 16 to 2 per cent, and filter blockages from 11 to 6 per cent. Research has shown that there are other benefits: nurses find using one bag of pooled platelets much easier and quicker than the old system of using five separate bags, and patients find transfusions easier to tolerate.

Because fewer platelets are needed to bring about a satisfactory improvement in the patient and there is less waste, the new procedures have also reduced the demand for platelets.

Platelets are typed to ensure that they are compatible with the patient's blood.

Special products

The collection of special tissues such as bone and stem cells increased during the year to meet increased demand. This work was given a welcome boost early in 1994/95 when the new North London Tissue Bank in Edgware became fully operational. The bank was established to collect, test and store a variety of tissues – including bone, tendons and skin. It supplies hospitals in London and the

south east of England. A team of nurses and counsellors based at the tissue bank worked with transplant co-ordinators, coroners and hospital staff to collect tissues removed from donors at nine participating hospitals.

Future priorities

A major priority for the National Blood Service is to provide a complete range of specialist services to meet the needs of all the hospitals it serves – an improvement on the existing situation where there was considerable variation from region to region in the availability of specialist services.

Services to be made available nationally will include: histocompatibility and immunogenetics, immunohaematology, platelet and granulocyte immunology, red cell reagents, bone and tissue banking, autologous blood transfusion and clinical apheresis.

Work will continue to develop a co-ordinated strategy for providing cost-effective specialist services.

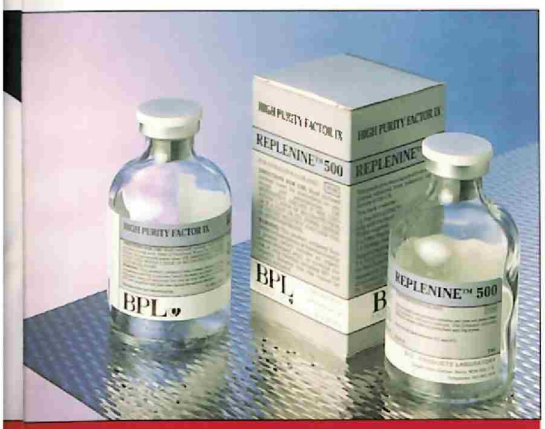
Stem cell harvesting is a procedure that is taking the place of bone marrow transplants for many patients. The stem cells are collected from the peripheral blood circulation rather than by bone marrow aspiration. This new form of treatment is less traumatic for the patients and is proving very effective.

Some tests involve the investigation of DNA products.

Review of Activities: Bio Products Laboratory (BPL)

Table 3: Sales

	1994/95 £m	1993/94 £m	Growth %
Coagulation factors	24.2	20.9	15.8
Albumin	15.5	11.5	34.5
Immunoglobulins	5.1	4.3	18.6
Diagnostics	1.0	1.1	(9.1)
Other income	2.3	3.3	(30.3)
	48.1	41.1	17.0



Replenine ® is a high purity factor IX concentrate, researched, developed and manufactured exclusively by BPL.

The Market

The market for plasma-based pharmaceutical products is becoming more competitive with each year that passes. Despite this BPL maintained its sales momentum in 1994/95 with 17 per cent growth on the previous year. Sales for the year were £48.1 million compared with £41.1 million in 1993/94 (see Table 3).

Coagulation factors increased year-on-year sales by 15.8 per cent. The licensing of the high purity factor VIII product, Replenate, enabled manufacture to be brought in-house and output to be increased. The increase in supply allowed the sales force to win substantial new orders which had not been possible the previous year when the contract manufacturer was unable to meet the full requirements. Sales of BPL's intermediate purity product 8Y remained strong.

Albumin yields increased providing a substantial surplus over and above requirements in the United Kingdom. This allowed BPL to make significant sales of the surplus product overseas. A six month contract to supply the Belgian Red Cross started in April 1994. BPL also supplied a number of other countries, primarily in the developing world, where the need is greatest and cannot be satisfied from local resources. The revenue gained from these overseas sales helped BPL to recover its costs.

In order to cope with the growth in Albumin volumes and to ensure improved product integrity, a new filling line was installed. The line, which was operational in February 1995, will also permit more effective filling of intravenous immunoglobulins.

Income from sales of immunoglobulins rose by 18.6 per cent reflecting strong performance across the whole product range. Demand for Anti-D was particularly strong. The introduction of new vaccines, especially for hepatitis A, put greater pressure on the normal range of immunoglobulins.

Developments

During the year there were several significant developments and achievements:

- A medical director was appointed to strengthen BPL's management team. A clinical research associate was also recruited to support work on product development including the testing of a biotechnology substitute for Anti-D immunoglobulin.
- Product licences were granted for the manufacture and marketing in the UK of two coagulation factors: Replenate, a high purity factor VIII product was granted its licence in September 1994 and Replenine, a high purity factor IX product in July 1994. Replenine has the added benefits of extremely low quantities of factors II and X which are not needed by haemophilia B patients.

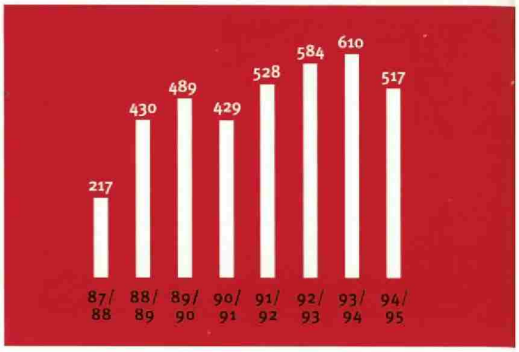
Review of Activities: BPL

- The final 'clean up' stage of the Replenine production using metal chelate chromatography was licensed to the Genetics Institute of the USA for use in its recombinant factor IX product.
- Clinical trials were carried out on an intravenous immunoglobulin, Vigam™S which was subsequently granted a product licence. This is a growth market in the United Kingdom and one in which BPL previously had no product on offer.
- BPL's products continued their excellent safety record. In particular the coagulation factors 8Y and 9A have not shown any evidence of pathogenic viral transmission after 10 years of use.
- In response to the increased concerns over viral transmission, a virus review group was established and the staffing of the virus group in the research and development department increased. BPL is continuing to develop and introduce improvements so that its products are protected against as wide a spectrum of potential viruses as possible.
- A number of patent issues were resolved in the year. In Europe challenges to the factor VIII (8Y) product were resolved to BPL's satisfaction. In Australia some issues on metal chelate chromatography were resolved and a patent granted.
- The Natal Blood Transfusion Service licensed the dry heat treatment process for use on its factor VIII products.

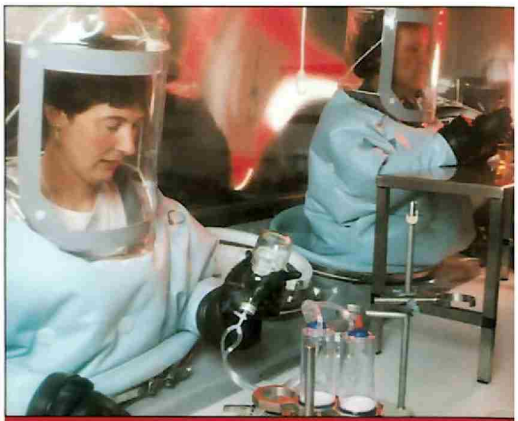
A total of 494 tonnes of fresh frozen plasma and 23 tonnes of immune specific plasma were processed during the year (see Table 4).

The changes in the market for plasma products including the trend towards recombinant proteins, and the introduction of capital charges will materially affect the business of BPL in the years ahead. Given this it will be necessary to develop a long term strategy to ensure BPL's future financial viability.

Table 4: Plasma processed 1987 to 1995

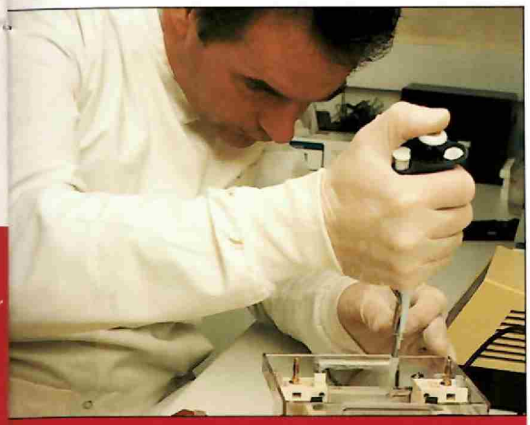


The Commitment to Improvement
BPL is committed to maintaining its leadership of blood products in the United Kingdom. It will continually strive to improve its operations and attain high levels of customer care and satisfaction.



Stringent quality control helps to maintain BPL's excellent safety record.

Review of Activities: International Blood Group Reference Laboratory (IBGRL)



Fetal DNA typing allows the blood group of a fetus to be determined early in pregnancy so that the risk of haemolytic disease of the newborn can be assessed.

The International Blood Group Reference Laboratory is a reference and research laboratory providing reference services for blood services in the United Kingdom and around the world under the aegis of the World Health Organisation. Its research activities are concerned with basic research in the field of human blood groups and applied research relevant to the development of diagnostic and therapeutic products.

Reference Division

(Red cell serology, Anti-D quantitation, platelet and granulocyte serology, prediction of clinical significance of red cell antibodies, membrane biochemistry: fetal blood grouping).

The overall number of samples referred showed little change on the previous year (see Table 5). However, referrals for platelet serology were down 20 per cent reflecting an initiative to reduce the number of investigations of minor clinical significance and referrals for testing of antenatal samples by chemiluminescence test increased by 117 per cent as the service was taken up by more blood centres.

Rare Donor Panels

During 1995, a total of 44 requests were made from 15 countries covering a wide range of different rare blood types. The laboratory was fortunate to have access to a large number of Japanese donors of otherwise unavailable rare blood types and these have proved useful on several occasions. The number of rare donors listed is now close to 4,000.

New methods

A new reference service was made available to all blood centres towards the end of the year to establish the blood group of fetuses at risk from haemolytic disease of the newborn. Molecular genetic methods were established to type fetal DNA for all the major blood groups involved in this disorder.

Research highlights

In vitro experiments exploring antibody-mediated red cell destruction by human monocytes showed that Fc receptors interact functionally with each other and with integrin molecules, during phagocytosis.

Table 5: Total number of samples

	1991/92	1992/93	1993/94	1994/95
United Kingdom	1,090	1,033	1,446	1,421
Overseas	285	278	280	319
	1,375	1,311	1,726	1,740

Review of Activities: IBGRL

A hollow fibre bioreactor used for the production of monoclonal antibodies.

Research and Development Division

(Product development, antibody research and engineering, antibody quantitation, human monoclonal antibody unit, molecular and cellular biology)

Research Products

The range of monoclonal antibodies available for sale as IBGRL Research Products was extended in 1994/95 from 26 to 36. Each antibody is available either as crude tissue culture supernatant, purified antibody, fluorescein or phycoerythrin conjugate. Research products sales for the year were up 83 per cent on 1993/94 figures and demand for purified antibody and conjugates increased. The breakdown of sales for 1994/95 was 27 per cent supernatant; 58 per cent purified antibody; 15 per cent conjugates. This compared with a breakdown for 1993/94 of 33 per cent supernatant and 67 per cent purified antibody.

A fluorescein conjugated monoclonal IgG3 anti-D (BRAD-3) was developed and validated for quantitation of fetal maternal haemorrhage (FMH). This quantitation is necessary to determine the dose of prophylactic anti-D to be given in cases of large FMH. This product will be introduced into the Research Products range in 1995/6.

Research and development support for BPL therapeutic products

IBGRL continued to provide ongoing support for BPL's therapeutic monoclonal anti-D programme, in particular in the following areas:

- Purified and formulated batches of monoclonal anti-D have been quantitated for anti-D by autoanalyser and tested for their ability to destroy red blood cells in in vitro quality control biological assays.
- Protection of intellectual property rights.
- DNA sequencing of monoclonal anti-D to provide data for regulatory bodies.

Research and development support for BPL diagnostic products

IBGRL also supported BPL's diagnostic blood grouping products, in particular by:

- Advising on selection and appropriate use of monoclonal anti-D.
- Continuing research into solid-phase blood typing methods.
- Evaluation of medium-scale hollow fibre bioreactors for production of major blood grouping monoclonal antibodies

Research highlights

- Results of the successful preliminary clinical trials of therapeutic monoclonal anti-D were published.
- The molecular basis of blood group antigens in the Diego and Colton blood group systems were determined in collaboration with researchers in the University of Bristol and John Hopkins University School of Medicine, Baltimore, USA.

Delegates at the WHO training course, September 1994.

Review of Activities: IBGRL

- The structure of the molecule bearing the blood group antigen Lutheran was determined – results indicate a specific adhesion function which may be important during haemopoiesis.
- Nicola Hemming, research assistant, was awarded the degree of Doctor of Philosophy for her work on protein: protein interactions between the red cell membrane and its underlying cytoskeleton.
- Jon Smythe, research assistant, was awarded the degree of Master of Philosophy for his work on the production and characterisation of rat monoclonal antibodies to human red cell membrane components.
- David Jackson, research assistant, was awarded the degree of Master of Philosophy for his work on the use of SCID mice to produce novel human antibodies.

International and national collaboration on blood grouping reagents and techniques

Dr Marion Scott, research and development division manager, prepared a report on the epitope specificity of monoclonal anti-D and participated in studies of reference preparations for antiglobulin reagents. Dr Scott is secretary of the International Committee for Standards in Haematology / International Society for Blood Transfusion working party on blood grouping reagents, which is working towards the establishment of international standards for blood grouping reagents and techniques.

IBGRL participated in the Department of Health Medical Devices Agency's multicentre evaluation of new technology systems for blood grouping, antibody screening and cross-matching.

World Health Organisation training courses in monoclonal antibody reagents

IBGRL provided training for 10 delegates in the preparation and standardisation of monoclonal blood grouping reagents. Concentrated monoclonal antibodies were then sent to the delegates' laboratories, where they successfully prepared their own blood grouping reagents. Samples of these first batches of reagents were sent to IBGRL for external quality control testing.

Presentations and publications

Staff presented numerous papers at national and international meetings during the course of the year and 27 papers were published in research journals.

Visitors

Overseas visitors were from Australia, Ecuador, France, Indonesia, Jamaica, Jordan, Laos, Malaysia, Nepal, Pakistan, Sri Lanka, United Arab Emirates and Zimbabwe.

Financial Review: Foreword

In April 1994 responsibility for the regional transfusion centres passed from individual regional health authorities to the National Blood Authority. The assets of the transfusion centres were transferred to the National Blood Authority from regional health authorities and these transactions have been reflected in the statement of total recognised gains and losses totalling £84,165 million.

In 1994 95 the fixed assets of the Bio Products Laboratory were valued in the balance sheet for the first time as previously it had only reported its working capital balances in a schedule to the accounts. This change in accounting treatment ensures that all the National Blood Authority fixed assets are treated in the same way. This valuation of £63,380 million is also contained in the statement of total recognised gains and losses and is largely based on the district valuer's valuation of land and buildings at April 1995. The transfusion centres were the only part of the National Blood Authority subject to capital charges in 1994/95; BPL will start paying capital charges in 1995/96.

The transfusion centres recover their revenue costs by negotiating contracts with hospitals for the supply of blood products and associated services. The revenue costs of BPL are substantially covered by charges made to hospitals for fractionated products. The National Blood Authority is allocated a capital cash limit by the Department of Health each year for purchases of fixed assets by the transfusion centres and BPL.

The information included on pages 22 to 24 represents the Authority's financial statements in summary form. A full set of accounts and a copy of the register of directors' interests can be requested in writing from:

Mr. Barry Savery, Director of Finance and Administration
National Blood Authority, Oak House, Reeds Crescent, Watford, Herts, WD1 1QH.

Financial Review: Auditors Report

We have audited the summary financial statements set out on pages 22 to 24 which have been prepared by the National Blood Authority and signed as approved by the Chairman and the Director of Finance and Administration. Our audit comprised a comparison of the statements with the full financial statements and an assessment of the presentation.

In our opinion the summary financial statements are consistent with the full financial statements of the Authority for the year ended 31 March 1995 on which we have issued an unqualified opinion.

R. J. Thomas
District Auditor

Financial Review:

Income and expenditure account

for the year ended 31 March 1995

		£000s
Income		170,963
Expenditure		
Authority members fees	29	
Salaries and wages	76,190	
Supplies and services	50,616	
Establishment, transport and premises	27,537	
External contractors	1,088	
Capital charges	9,579	
Auditors remuneration	151	
Other expenses	7,855	
		173,045
Deficit for the financial year		2,082

Balance sheet

as at 31 March 1995

		£000s
Total fixed assets		135,989
Net current assets		
Stocks	32,495	
Debtors	17,423	
Cash	(373)	
Creditors	(12,122)	
		37,423
Total net assets		171,412
Financed by:		
Capital account	133,829	
Donation reserve	160	
Balance due to Department of Health	37,423	
		171,412

Financial Review:

Cash flow statement

for the year ended 31 March 1995

		(£'000s)
Operating activities		
Net cash inflow from operating activities	(1,095)	
Transfer of cash from regional health authorities	350	
		(745)
Investing activities		
Payments to acquire tangible fixed assets	(9,003)	
Receipts from sale of tangible fixed assets	82	
		(8,921)
Net cash outflow before financing		(9,666)
Financing		
Capital funding		9,003
Decrease in cash and cash equivalents		(663)

Statement of total recognised gains and losses

for the year ended 31 March 1995

		(£'000s)
Surplus/(deficit) for the financial year		(2,082)
Unrealised surplus on the revaluation of properties		
Revaluation of transfusion centre assets	942	
Valuation of Bio Products Laboratory assets	63,380	
		64,322
Additions to reserves		1,805
Net assets transferred from regional health authorities		84,165
Total gains and losses recognised in the financial year		148,210

Financial Review:

Authority members' remuneration committee membership and interests

Authority members remuneration		*£'000s*
Non-executive members remuneration		29
Executive members remuneration		
Basic salaries	284	
Benefits	7	
Pension contributions	17	
	308	
Total Authority members remuneration		337

	Chairman	*Chief Executive*	*Highest Paid Director*
Basic Salary	10	78	92
Benefits	–	–	4
Pension contributions	–	3	3
Total	10	81	99

Authority members remuneration including basic salary, benefits and pension contributions fell within the following ranges	
£0 – £5,000	4
£5,001 – £10,000	1
£55,001 – £60,000	1
£65,001 – £70,000	1
£80,001 – £85,000	1
£95,001 – £100,000	1

The figures above included two Medical Directors.

The members forming the remuneration committee are
Sir Colin Walker
Dennis Allison
Lawrence Banks

The members forming the audit committee are
Lawrence Banks
Dennis Allison

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