Report
of the
Tribunal of Inquiry
into the
Infection with HIV and Hepatitis C of Persons with Haemophilia and Related Matters

BAILE ÁTHA CLIATH
ARNA FHOILSIÚ AG OIFIG AN TSOLÁTHAIR
le ceannach díreach ón
OFIFIG DHÍOLTA FOILSEACHÁN RIALTAIS.
TEACH SUN ALLIANCE, SRÁID THEACH LAIGHEAN, BAILE ÁTHA CLIATH 2,
nó tríd an bpost ó
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Tribunal of Inquiry

(Into the infection with HIV and Hepatitis C of persons with Haemophilia, and related matters)
Appointed by instrument of
the Minister for Health and Children
dated the 8th day of September 1999
Sole member:
Her Honour Judge Alison Lindsay

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Micheál Martin T.D.
Minister for Health & Children
Department of Health & Children
Hawkins House
Hawkins Street
Dublin 2

Date 4 September 2002

Dear Minister

I enclose herewith my Report as sole member of the Tribunal appointed by Order made by you on the 8th day of September 1999 pursuant to the resolutions of Dáil Éireann and Seanad Éireann each passed on the 2nd day of June 1999, to inquire into the circumstances surrounding the infection with HIV and hepatitis C of persons with haemophilia, and related matters in accordance with the Terms of Reference contained in the said Order.

Yours sincerely

Alison Lindsay.

Her Honour Judge Alison Lindsay
Sole Member of the Tribunal

Introduction

Ît is important that there is a public record of the Tribunal's appreciation of all who co-operated and worked with the Tribunal.

The Tribunal would like, firstly, to acknowledge with thanks all the persons with haemophilia and their relatives who came forward to give evidence at the Tribunal and those who consented to Orders for Discovery of individual medical records. Their contribution was pivotal to the Tribunal.

The Tribunal would also like to acknowledge with thanks the contribution and co-operation all of the other witnesses and parties.

The Tribunal is grateful to the international experts all of whom travelled from abroad to assist the Tribunal.

I owe a particular debt to Counsel for the Tribunal, John R. Finlay and Gerard Durcan, Senior Counsel, Grainne Clohessy and Patrick McCann, Junior Counsel, and Michael Ramsey and Carol Corbett, Legal Researchers. They all worked tirelessly and steadfastly throughout in the presentation of evidence and in the vast amount of preparatory work which preceded it. I am also grateful to John Nolan, Solicitor, whose task it was to put shape on the enormous quantity of documents, prepare for evidence, create schedules and all the while carry on a correspondence with and liase with parties, all of which he did with admirable skill and tact.

I also acknowledge with sincere thanks the skill of Siobhán Hayes, Registrar, who established the place of business of the Tribunal and organised the smooth running of all of the Tribunal hearings.

I and all of the legal representatives owe a particular debt of gratitude to our superb secretaries, namely Bríd Luddy and Noreen Taaffe.

The workings of the Tribunal both at the public hearings and behind the scenes at the Tribunal office could not have happened without the skill, care and attention given by the office staff, namely Thérése Fingleton, Ivor Geraghty, Pádraig Maguire and Damien McArdle and many others who helped on a temporary basis. To all of them I am extremely grateful.

The efficiency of Doyle Court Reporters Limited as stenographers to the Tribunal was outstanding as was the contribution of Pearl Corp Limited and Theresa Gayle as Sound Technician to the Tribunal. The Tribunal is grateful to Liam Furlong of Space Design Consultants for his assistance in the design and layout of the report.

Finally, the Tribunal would like to acknowledge the courtesy of all of the staff at Distillery Buildings and the co-operation of the Bar Council.

To all of the above I give my sincere thanks.

Alison Lindsay
Sole Member of the Tribunal
4 September 2002

Part 1

The History and Procedures of the Tribunal

Introductory Information

Part I

Chapter 1

Terms of Reference

Pursuant to a resolution of Dáil Éireann passed on the 2nd day of June 1999 and a resolution of Seanad Éireann on the 2nd day of June 1999, the Minister for Health & Children, Brian Cowen, T.D., on the 8th of September 1999 made an Order appointing a Tribunal to which the Tribunals of Inquiry (Evidence) Act 1921 (as adapted and amended) applied, to inquire urgently into and report and make such findings and recommendations as it saw fit to the Clerk of Dail Éireann on the definite matters of urgent public importance set out in sub-paragraphs 1 to 14 of the resolutions passed by Dáil Éireann and Seanad Éireann. The matters referred to in paragraphs 1 to 14 of the resolutions (the Terms of Reference) are as follows:-

"(1) which relevant products caused, or probably caused, the infection,

(2) the adequacy of the criteria, standards and procedures applied by the Board for the purposes of its processing and manufacture of any relevant products found by the Tribunal to have or probably to have caused the infection with regard to:-

(a) donor selection,
(b) donor screening,
(c) donor testing,
(d) plasma quarantine,
(e) virus inactivation,
(f) product recall,

and the timeliness of the application of such criteria, standards and procedures,

(3) the adequacy and timeliness of the decisions of the Board and other relevant persons in the State in the selection of any relevant products found by the Tribunal to have, or probably to have, caused the infection,

(4) the considerations that influenced the Board when deciding to implement a policy of self-sufficiency by using plasma collected or recovered within the State for the processing or manufacture by it or the manufacture by other manufacturers of relevant products, and the adequacy and timeliness of the implementation of that policy,

(5) the considerations that influenced the decisions of the Board and other relevant persons in the State in the selection of the manufacturers of any relevant products found by the Tribunal to have, or probably to have, caused the infection and the adequacy of the criteria, standards and procedures applied by those persons in such selection with regard to:-

(a) donor selection,
(b) donor screening,
(c) donor testing,
(d) plasma quarantine,
(e) virus inactivation,
(f) product recall,

on the part of the manufacturers of those products and the timeliness of such application,

(6) the time when the Board and other relevant persons in the State became aware, or ought reasonably to have become aware, that relevant products had become, or that there was a risk that they would become, a source of infection,

(7) the adequacy and timeliness of the response of the Board and other relevant persons in the State to their becoming aware of the matters referred to in subparagraph (6) and, in particular (but without prejudice to the generality of the foregoing):-

(a) the actions taken by the Board and those persons to identify persons likely to have been affected by the matters aforesaid, to inform them of those matters and to offer them HIV or hepatitis C testing, and

(b) the action taken by the Board and those persons to reduce or minimise the risk of infection having regard to those matters,

(8) the adequacy and timeliness of the response of the Minister, the Department of Health and Children and other relevant persons in the State, when they became aware of the fact that there were infected persons,

(9) the adequacy of the donor selection and donor screening procedures that:-

(a) were employed by the Board from and including the year 1980 to and including the month of October 1985 and

(b) were intended to exclude potential donors who had, or might have, been exposed to infection with HIV,

(10) whether the introduction by the Board in the month of October 1985 of donor testing for HIV was timely, having regard to international experience and any other relevant circumstances,

(11) in respect of recipients of whole blood, blood components and blood products derived from donations made in the State prior to the introduction of HIV testing in the month of October 1985 by donors who were subsequently diagnosed as positive for HIV, the adequacy and timeliness of the procedures adopted by the Board to identify those recipients,

(12) the circumstances surrounding the issue by the Board on an emergency basis in the month of December 1985 of untested platelet concentrate and the adequacy of the response of the Board when the donor of the platelets was subsequently diagnosed as positive for HIV,

(13) in respect of any relevant products found by the Tribunal to have, or probably to have, caused the infection, whether the Minister, the Department of Health and Children, the National Drugs Advisory Board and any other relevant person, carried out his, her or its functions (including, in the case of the National Drugs Advisory Board, advising the Minister on the granting of Product Authorisations and Licences for the manufacture, importation, distribution or sale of such products) adequately and properly and whether those functions were the appropriate ones having regard to international standards.

(14) whether the supervision by the Minister, the Board and the National Drugs Advisory Board, in so far as relevant to any matter referred to in the foregoing subparagraphs was adequate and appropriate having regard to the functions, duties and responsibilities of the Minister,"

The full terms of the Order made by the Minister for Health & Children on the 8 September 1999 are set out at *Appendix 1* to this report.

Part I

Chapter 2

Procedures Adopted by the Tribunal

1. The Parties Represented

The Tribunal was represented by Solicitor and Counsel. The following parties were granted full representation:-

(1) Irish Haemophilia Society (IHS)
(2) Blood Transfusion Service Board (BTSB)
(3) Department of Health and Children

The following parties were granted limited representation:-

(a) Kilkenny Healthcare Worker
(b) "Deirdre", "Eithne", "Fiachra" and "Edel"
(c) Dr. Terence Walsh
(d) Dr. James Kirrane
(e) Ms. Cecily Cunningham
(f) Dr. Joan Power
(g) St. James's Hospital
(h) Adelaide & Meath Hospital Incorporating National Children's Hospital
(i) Professor Ian Temperley
(j) Dr. Helena Daly
(k) Dr. Frederick Jackson
(l) Dr. Anne Tobin
(m) Southern Health Board
(n) Dr. Paule Cotter

(o) Western Health Board
(p) Professor Ernest Egan
(q) North Eastern Health Board
(r) Dr. Anne Murphy
(s) Mid-Western Health Board
(t) South Eastern Health Board
(u) St. Vincent's Hospital
(v) U.C.D. (Virus Reference Laboratory) and Dr. Alan Shattock
(w) Irish Medicines Board (National Drugs Advisory Board)
(x) Church & General Insurance Company
(y) Dr. Stephen O'Sullivan
(z) The Attorney General representing the public interest.

(See Appendix 2 for further details of the representation granted.)

(2) Orders for Discovery

Orders for Discovery were made against the parties listed in *Appendix 3*. The Tribunal considered it would be inappropriate to obtain discovery of individual medical records without reference to the individual patient concerned or, in the case of a deceased patient, his family. The Tribunal therefore expressly excluded individual medical records from the documents sought by the Tribunal by way of general Orders for Discovery. In a number of cases the Tribunal made further specific Orders for Discovery of individual medical records. In all cases such orders were made with the express consent of the patient concerned or of the family of a deceased patient.

(3) Work Preparatory to the Taking of Evidence

The Tribunal decided to deal with the Terms of References in three broad divisions, namely:-

(i) Division I: Terms of Reference 1, 2, and 4; and 3, 5, 6 and 7 with reference to the Blood Transfusion Board, its servants, agents or employees.
(ii) Division II: Terms of Reference 9, 10, 11 and 12.
(iii) Division III: Terms of Reference 3, 5, 6 and 7 with reference to all relevant persons other than the Blood Transfusion Service Board, its servants, agents or employees and 8, 13 and 14.

These Divisions and groupings of the Terms of Reference proved helpful in hearing evidence. The Tribunal will also use them in this Report.

The Tribunal prepared a Memorandum on Procedures and sent a copy to all parties represented before the Tribunal. The Tribunal gave all parties an opportunity to address submissions to it on the memorandum at a public hearing on the 9 December 1999. The memorandum was adopted by the Tribunal on the 14 December 1999.

See Appendix 4 for the Memorandum on Procedures.

The Tribunal prepared books of relevant documents from the copy documents made available to it by way of Discovery.

Copies of all documents discovered to the Tribunal were made available to parties represented before the Tribunal who wished to inspect them subject to the conditions set out in paragraph 7.5 of the Memorandum on Procedures which provides:-

> "*7.5 The Tribunal may make copies of documents received by it available to such persons as it considers necessary for the purposes of the Tribunal on the strict basis that the documents will be used solely for the purpose of the Tribunal and that neither the documents nor any material contained in them will be disclosed to any third party without the express permission of the Tribunal. This requirement will no longer be of any force in respect of any particular document or part thereof if and when that document or part thereof is put in evidence in the course of the public hearing of evidence.*"

The Tribunal also identified potential witnesses who might be in a position to give relevant evidence and obtained statements of proposed evidence from such witnesses.

At a public hearing on the 2 May 2000 the Tribunal provided an interpretation of its Terms of Reference.

(4) The Taking of Evidence.

The Tribunal sat in public on 196 days between the 27 September 1999 and 28 November 2001. The taking of oral evidence commenced on the 2 May 2000. 146 witnesses gave oral evidence to the Tribunal. Statements from two further witnesses were read into the record of the Tribunal. Witnesses were generally first questioned by Counsel for the Tribunal. An exception was made for some persons with haemophilia or their relatives giving personal testimony who were first questioned by lawyers representing the Irish Haemophilia Society. An opportunity was afforded to all relevant parties represented before the Tribunal to question all witnesses who gave evidence.

Statements of proposed evidence and books of relevant documents prepared by the Tribunal were circulated in advance of witnesses giving evidence. In accordance with the provisions of paragraph 7 of the Memorandum on Procedures, parties who wished to refer a witness to a document not included in the witness' Book of Documents were requested to identify the document to the Tribunal in advance of the witness giving evidence. The document could then be added to the Book of Documents for the witness, if appropriate, and the witness given an opportunity to consider it before giving evidence. These requirements were applied in a flexible manner by the Tribunal and provided a reasonably orderly documentary framework for witnesses' evidence.

The resolution of the House of the Oireachtas pursuant to which the Tribunal was established contained the following clause:-

> "*The anonymity of persons with haemophilia, other recipients of whole blood, blood components or blood products, donors and their next-of-kin shall be preserved if they so wish, unless the Tribunal considers it would be unjust to do so.*"

Special arrangements were made for persons with haemophilia or members of their family who wished to give personal testimony to the Tribunal. All such persons were given the option of having

their identify publicly disclosed or of having their anonymity preserved. Those who chose to have their identity publicly disclosed gave evidence at a public hearing using their own names. Witnesses who chose to have their anonymity preserved also gave evidence at a public hearing but did so using pseudonyms assigned to them by the Tribunal. Their identify was, of course, made known to the Tribunal and in turn was made known by the Tribunal to parties represented before the Tribunal who might be affected by their evidence. Their identity was not, however, in any way publicly disclosed. Such witnesses were also permitted to give evidence from behind a screen if they wished to do so.

To further protect the anonymity of such persons, the Tribunal made an order prohibiting any person or body, including any organ of the media, from publishing the name of any such witness; or in the case of a child with haemophilia or the next-of-kin of a deceased person with haemophilia, the name of that child or deceased person and from publishing any material, including a photograph, which could or would disclose the identity of the witness or child with haemophilia or deceased person with haemophilia to whom the evidence of the witness related. In so far as the Tribunal is aware, this ruling was fully observed in both letter and spirit by all parties, including the media, and the Tribunal appreciates the co-operation of all parties in that regard.

The Tribunal had the benefit of hearing evidence from a number of international expert witnesses. Some of these experts were contacted directly by the Tribunal. Others were suggested by parties represented before the Tribunal. All were called as witnesses by the Tribunal Their expenses of attending at the Tribunal were met directly by the Tribunal. The experts were called as a group towards the end of the hearing of oral evidence.

A list of witnesses forms *Appendix 5* hereof. Witnesses who gave evidence anonymously are referred to by their assigned pseudonyms.

(5) Rulings

The Tribunal naturally gave rulings from time to time as required on matters which arose in the conduct of its investigation. It may be appropriate to refer to a number of them here.

In January 2001 an application was made on behalf of the Irish Haemophilia Society to the Tribunal challenging the entitlement of a number of parties to assert legal professional privilege in respect of documents referred to in their Affidavits of Discovery and also challenging the form of the Affidavits of Discovery and in particular the manner in which documents over which privilege was being claimed were referred to. On Thursday the 1 February 2001, the Tribunal ruled that the parties were entitled to assert legal professional privilege but that in some instances the form of affidavit was defective. Pursuant to that ruling a supplemental Affidavit of Discovery was sworn on behalf of the Blood Transfusion Service Board on the 15 March 2001. A further application was made to the Tribunal on behalf of the Irish Haemophilia Society on the 8 May 2001 challenging the manner in which privilege was claimed in that supplemental affidavit. On the 9 May 2001 the Tribunal ruled that the claimed privilege was properly set out in the supplemental affidavit. An application for liberty to challenge this ruling of the Tribunal by way of application for judicial review by the Irish Haemophilia Society was dismissed by the Honourable Mr. Justice Kelly, following a hearing inter partes, in a reserved judgement delivered on the 16 May 2001

On the 20 July 2001 an application was made to the Tribunal on behalf of the Irish Haemophilia Society seeking that the Tribunal should take further steps to inquire into certain actions or omissions of or by the pharmaceutical companies who supplied, into Ireland, products which

infected persons with haemophilia with HIV and HCV. On the 27 July 2001 the Tribunal ruled that the further inquiries proposed by Counsel for the Irish Haemophilia Society would not be relevant to any of the matters set out in the Tribunal's Terms of Reference.

In October 2001 the Tribunal was consulted by the Attorney General, pursuant to the provisions of Section 1 (A) of the Tribunals of Inquiry (Evidence) Act 1921 as inserted by Section 1 of the Tribunals of Inquiry (Evidence) (Amendment) (No. 2) Act 1998 to ascertain whether the Tribunal would consent to an extension of its Terms of Reference to enable the Tribunal to investigate the internal processes and procedures of the pharmaceutical companies who manufactured blood products implicated in the HIV infection of persons with haemophilia. The Tribunal advised the Attorney General that it would not consent to such a proposed amendment because it believed it would be fundamentally unfair to parties before the Tribunal and persons who had co-operated with the Tribunal to alter the Terms of Reference at a very late stage in the Tribunal's work and that any such proposed amendment would result in the Tribunal being unable to complete its work under the existing Terms of Reference in a fair, timely and effective way.

(6) Statements & Submissions

Counsel for the Tribunal made opening statements at the start of each of the three divisions of the Tribunal's work. They also made a closing statement after the completion of the hearing of evidence. All parties represented before the Tribunal were then offered an opportunity to address closing submissions to the Tribunal. A list of the parties who made such submissions is included at *Appendix 6.*

(7) Costs

In December 1999 an application was made to the Tribunal on behalf of the Irish Haemophilia Society seeking an order directing the State to pay costs to the Irish Haemophilia on an interim or prospective basis. The Tribunal ruled on the 14 December 1999 that it did not have jurisdiction under Section 6 of the Tribunals of Inquiry (Evidence) (Amendment) Act 1979 as amended by Section 3 of the Tribunals of Inquiry (Evidence) (Amendment) Act 1997 to award interim or prospective costs. The Tribunal was subsequently informed that the Minister for Health & Children had made an arrangement with the Irish Haemophilia Society Limited to provide funding to them on an on-going basis in respect of their costs of being represented at the Tribunal.

The Tribunal heard applications for costs on the 28 November 2001. The Tribunal's ruling on the applications for costs is set out as *Appendix 7*. A list of the parties who were granted costs is set out at *Appendix 8*. Draft Orders for Costs are set out in *Appendix 9*.

Part I

Chapter 3

Introductory Information

It may be helpful to set out in brief and summary form some introductory information on matters which are central to the work of the Tribunal.

Haemophilia

Haemophilia can be described as a genetic blood clotting disorder. It normally affects males, although it can in rare cases affect females. Although it affects males, it is passed from one generation to another through the female line. Haemophilia can also occur as a result of a spontaneous mutation without any previous family history of the condition. Haemophilia restricts the production of one of two essential clotting factors known as Factor VIII and Factor IX. A deficiency of Factor VIII is known as haemophilia A or "classical haemophilia". A deficiency of Factor IX is known as haemophilia B or "Christmas disease". Haemophilia A is far more common than haemophilia B.

The degree of severity of the condition is classified by reference to the level of Factor activity expressed as a percentage of the normal. In Ireland the following classification is used:-

Severe – less than 1% Factor activity
Moderate – 1 to 5% Factor activity
Mild – 6 to 25% Factor activity
Factor VIII or Factor IX "deficiency" – 26 to 49% Factor activity

In some other countries only three categories are used and the term mild haemophilia is applied from 5 to 50% of normal.

The United Kingdom applies the following classifications:-

Severe – less than 2% Factor activity
Moderate – 2 to 10% Factor activity
Mild – greater than 10% Factor activity

Von Willebrand's Disease

Von Willebrand Factor plays a role in the production of Factor VIII. Von Willebrand's disease is a condition involving a deficiency of that Factor. It is a congenital disorder which affects both sexes and reduces the amount of effective Factor VIII available for the clotting process.

Persons suffering from haemophilia or Von Willebrand's disease are prone to easy bruising and bleeding especially after trauma or surgery including episodes of bleeding into joints and muscles. The quality of life for persons with haemophilia before treatment became available was miserable. Uncontrolled bleeding into the joints could lead to very severe arthritis. Bleeding into the brain and other internal organs, if left unchecked, could be fatal.

Treatment

The basic form of treatment for persons with haemophilia is to replace the missing clotting Factor from an outside source. The first attempt to do this was by transfusion of whole blood. Large volumes of blood were needed to provide the level of Factor VIII or Factor IX required to control a bleeding episode. This additional volume tended to strain the circulatory system carrying with it the risk of heart failure. The clotting Factors are one of the proteins contained in plasma, which itself is one of the elements contained in blood. The development of a capacity to transfuse persons with plasma rather than with whole blood represented an advance in the treatment of haemophilia. Large volumes of plasma were still required and the consequent risk of overloading the circulatory system remained, though to a lesser degree than in the case of whole blood.

In the mid-1960s it was discovered that as frozen plasma was thawed some of it would liquefy but a portion would remain in the form of sludge. It was discovered that this sludge or cryoprecipitate was rich in Factor VIII. This lead to the development of a product known as cryoprecipitate, or more generally simply as "cryo", for the treatment of persons with haemophilia A and Von Willebrand's disease. The production of cryoprecipitate was a relatively straight forward matter. Initially it was produced and kept until ready to be used in a frozen state. The Blood Transfusion Service Board produced such cryoprecipitate from 1967 onwards.

Cryoprecipitate does not contain Factor IX. As frozen plasma is thawed, the element which first becomes liquid and separates from the sludge or cryoprecipitate is known as supernatant. This supernatant contains, amongst other things, Factor IX. Persons suffering from haemophilia B did not initially derive any benefit from the development of cryoprecipitate and they continued to be treated with fresh frozen plasma as before.

The next and crucial product developed for the treatment of persons with haemophilia was a concentrated form of Factor VIII, manufactured or fractionated from large pools of plasma. It was known originally as Factor VIII concentrate or Anti-Haemophilic Factor Concentrate. In time it became generally referred to simply as Factor VIII. It was produced in a lyophilised or freeze-dried powder form and was easier to use than cryoprecipitate. The concentrate could be stored in small

phials, reconstituted with sterile water and then injected. This opened up the possibility of a person with haemophilia administering the product to himself at home which had not generally been thought possible with cryoprecipitate. The potency or specific activity of a unit of cryoprecipitate, measured in terms of units of clotting factor to milligram of protein had tended to vary. The specific activity of concentrate was both higher and more uniform than that of cryoprecipitate. This was of assistance both in calculating the dosage necessary to treat an episode of bleeding and to sufficiently raise the level of Factor VIII to enable surgery to be carried out in safety.

A process was developed to fractionate Factor IX from the supernatant resulting from the production of cryoprecipitate from plasma. The fractionation process was different and less complex than that involved in producing Factor VIII concentrate. From 1972 onwards the BTSB issued Factor IX fractionated from Irish plasma. Commercially fractionated Factor IX was used from 1977 onwards.

From 1974 onwards Factor VIII, commercially fractionated from plasma obtained from paid donors, became available in Ireland. The BTSB never itself produced a Factor VIII concentrate comparable to the commercially produced concentrates. It did produce a lyophilised or freeze-dried cryoprecipitate in 1977. Between 1981 and 1984 the BTSB planned for and experimented with the production of an intermediate purity concentrate. It never, however, went into production and instead the BTSB entered into arrangements with a number of companies for custom fractionation. The essence of these arrangements was that plasma collected from Irish donors was supplied to commercial companies who fractionated Factor VIII and Factor IX from it and then supplied those products to the BTSB for use in Ireland.

During the 1980s a number of techniques were applied to blood products in an effort to remove or inactivate viruses. Methods of fractionating or purifying concentrates were also developed which had the double effect of increasing the specific activity of the concentrate and removing viruses. These methods will be described in the relevant sections of the report.

Desmopressin, or DDAVP, a synthetic drug, not derived from blood or plasma, was developed for the treatment of persons with haemophilia A or Von Willebrand's disease. It has the effect of stimulating the patient's own production of Factor VIII and Von Willebrand Factor. It does not introduce any external Factor VIII into the system. It is not effective for persons with severe haemophilia A. It has no application in the treatment of persons with haemophilia B.

Recombinant Factor VIII and Factor IX concentrate is genetically engineered. It is not derived from human blood or plasma sources and is, therefore, believed not to carry the risk of transmission of HIV or hepatitis. It is now the standard treatment in Ireland for persons with haemophilia, Von Willebrand's disease and analogous blood clotting disorders. In recent times there have been some interruptions in the availability of recombinant product due to worldwide shortages.

A percentage of persons with haemophilia develop inhibitors as a result of treatment with Factor VIII or Factor IX. Inhibitors consist of antibodies which attempt to destroy the infused Factor VIII or Factor IX before it can be used for blood clotting. This can be a serious complication and persons with inhibitors require special product for their treatment.

Hepatitis C

Hepatitis is a viral disease which primarily effects the liver. By approximately 1975 two distinct forms of the disease, known respectively as hepatitis A and hepatitis B, had been identified. At that

time it became known that there was a form of hepatitis which was neither A nor hepatitis B. Because it wasn't known if this condition was caused by a single virus or by a number of different viruses it was given the name non-A non-B or NANB hepatitis. It included the condition which from approximately 1989 was identified and named hepatitis C. The Tribunal has interpreted references in its Terms of Reference to hepatitis C to include references to the condition when it was known as NANB hepatitis. The relevant developments in the state of knowledge of NANB hepatitis/hepatitis C and its clinical significance are addressed in the body of the report.

AIDS and HIV

AIDS, Acquired Immune Deficiency Syndrome, describes a condition which involves the progressive deterioration of the immune defences leaving a patient prone to opportunistic infections and malignant conditions. There is now a general, though not universal, medical and scientific consensus that it is a disease caused by infection with HIV or the Human Immuno Deficiency Virus. The first report of the condition which later became known as AIDS was in June 1981. An attempt to trace the emerging state of knowledge of AIDS and HIV was central to the work of the Tribunal and is again dealt with in the body of the report.

Part II

Personal Testimony

Part II

Personal Testimony

The public hearings of the Tribunal commenced in May 2000 with personal evidence from a number of persons with haemophilia and from members of their families. There were two further sections of such evidence in November 2000 and October 2001. In all 64 persons gave such personal evidence.

This evidence was very important to the work of the Tribunal and was of considerable assistance to the Tribunal in carrying out that work. The events which are the subject of this Tribunal of Inquiry can only be properly viewed in the context of, and having regard to, the lives of the persons who were most intimately affected by those events. All of the evidence was deeply personal in nature and much of it was distressing in that witnesses had to recall and discuss occasions of great pain and suffering. The Tribunal owes a debt of gratitude to each of the witnesses who gave personal testimony and acknowledges their courage in coming forward to do so.

The Tribunal is of the view that it would be invidious to attempt to select and to highlight portions of evidence from particular witnesses. Each of the witnesses had a story to tell and that story was valid in regard to their own experience. However, this Report would be inadequate and incomplete unless it recorded in some way the thrust and effect of the personal testimony. The Tribunal has decided that the most appropriate way to do this is to set out and to explore a number of themes that emerged from that testimony.

The Historical Position in Relation to Treatment.

The Tribunal heard evidence in regard to the progression of treatment of persons with haemophilia from the 1950s and 1960s to the present day. In the early days treatment was by way of whole blood, then plasma, later cryoprecipitate and ultimately concentrates. A clear picture emerged in regard to the 1950s and 1960s and 1970s of how profound an effect the condition of haemophilia had not only on the person suffering from the condition but on his family. There were frequent and

arduous journeys for treatment and often that treatment could involve very prolonged stays in hospital. This involved not only upset for the patient but also considerable sacrifices in terms of family life.

The Effects of Haemophilia.

A clear and helpful picture was given to the Tribunal in the personal testimony as to how debilitating the condition of haemophilia could be. Frequent bleeds could lead to damage to joints and often caused intense pain. The persons affected could be very restricted in their activities such as, for example their participation in sports which involved physical contact. Even such normally straightforward activities as travelling away from home would involve detailed planning and organisation lest a bleed might take place.

The Advent of Concentrates

It was against this background that persons with haemophilia viewed the advent of concentrates. They felt that the use of concentrates brought with it the possibility of a much more normal life. Concentrates opened up the possibility of treatment at home and an end, or at least a reduction, of time spent in hospital.

The relationship between persons with haemophilia and their doctors and carers.

The personal testimony to the Tribunal showed that there was an unusually close bond between persons with haemophilia and their families and the doctors and medical staff who treated them. This no doubt arose from the fact that persons with haemophilia had unusually frequent and prolonged contact with those doctors and medical staff. It was often a situation of a small and specialised medical team looking after and caring for a small well defined group of patients whom they knew well. The relationship was such that the Tribunal is satisfied that persons with haemophilia placed an unusually high degree of trust and confidence in their medical advisors. This made the circumstances of the infection with HIV and hepatitis C, and the consequences of that infection, all the more difficult to bear.

The Advent of HIV

Once it emerged during the year 1983 that the cause of AIDS might be blood borne, this understandably was a source of great apprehension and worry for the community of persons with haemophilia. They looked to their doctors for reassurance and guidance. In a letter published in the newsletter of the Irish Haemophilia Society in 1983, Professor Temperley indicated that he was sure persons with haemophilia in facing this new threat would show great forbearance as they had when faced with adversity in the past. It is clear that persons with haemophilia did show considerable courage and forbearance in meeting the threat caused by AIDS but the personal testimony shows that nothing prepared that community for the devastation that was about to be unleashed upon it.

The Emergence of HIV in Persons with Haemophilia.

To understand the effect of the finding that a significant number of persons with haemophilia were infected with the HIV virus one must look at the nature of the haemophilia community. The condition of haemophilia ran in families and, therefore, there were multiple persons in extended families suffering from the condition. What is more, many persons with haemophilia were familiar and friendly with others who had the same condition. The personal evidence given to the Tribunal made clear beyond doubt the level of shock and distress caused by the discovery that a considerable percentage of persons with haemophilia were infected with HIV.

The Circumstances in Which People Were Told

There was a significant degree of dissatisfaction among persons with haemophilia in regard to the manner in which a person was informed that his test result indicated that he had been infected with HIV. This dissatisfaction arose from a number of matters. Firstly, some of the personal testimony complained of delays in informing the patient of the test result. Others in their personal testimony complained of the physical circumstances in which they were told either in a treatment room or in a corridor. A constant theme from the various witnesses was the lack of availability of any form of counselling or method of obtaining further advice. It was suggested that these matters caused further distress in what was already an extremely upsetting and distressing situation.

The Consequences of HIV Infection

The personal testimony to the Tribunal shows that many of those who were informed that they were HIV positive felt frightened and alone. It is important to bear in mind that at that time, the mid-1980s, there was a great fear and stigma attaching to the disease AIDS. This meant that persons with haemophilia who found that they were infected with HIV felt a need for secrecy. They were very afraid that their condition might be passed on to others and this caused further difficulty and strain in particular in the area of sexual relations.

Finance

Not only did the infected persons have to attempt to deal with their illnesses and the effects thereof but often this took place in a situation of financial hardship. Illness made it impossible to work and there was difficulty obtaining necessary grants and entitlements. An infected person worried about how to provide for his family and how to protect them from poverty and hardship and this worry extended to what would happen in the event of his death.

Illness and Death

The position became even worse as members of the Haemophilia Community began to suffer ever more increasingly debilitating symptoms of AIDS. This caused huge pressure on families attempting to care for very sick and sometimes dying relatives. The personal testimony indicated that persons with haemophilia and their families felt abandoned and without any adequate support in attempting to deal with this very difficulty situation. The Tribunal was given harrowing accounts of the dreadful effects of AIDS-related illnesses which involved the breakdown of bodily and mental functions. A succession of deaths from these AIDS-related illnesses added to the feeling of desperation and despair.

Body Bags

Again it was clear from the personal testimony to the Tribunal that further upset and distress was caused by the use of body bags in hospitals after the death of a person who was suspected to have died from an AIDS related illness. While the relevant hospital authorities no doubt felt that the use of such measures was necessary to prevent any possibility of further infection, nonetheless it caused further anguish to the families to see their loved one treated in a manner which they perceived as not being in keeping with the dignity of the deceased.

The impact of Hepatitis C Infection

Many witnesses who gave personal testimony also dealt with the impact of infection with the hepatitis C virus. For some a diagnosis of hepatitis C infection was a double blow as they were already suffering from infection with HIV. Persons with haemophilia who were infected with hepatitis C had to come to grips with the disturbing reality of the illness which, although in early years was considered to be relatively benign in nature, turned out to have much more profound and potentially fatal effects.

Again there was personal testimony to the effect that the position was worsened by delays and insensitivity in the giving of test results. A number of witnesses spoke of the ongoing effects of infection with hepatitis C, how it robbed the person of energy and gave a constant and lingering feeling of fatigue. They spoke eloquently of the fear and uncertainty caused as to the possible progress of the illness. They highlighted the irony whereby just when the advent of triple therapy gave greater hope of a normal life for those infected with HIV it became clear that the consequences of long term infection with hepatitis C could be much more serious than was initially thought.

The Irish Haemophilia Society

The personal testimony to the Tribunal indicated the level of assistance which had been given to persons with haemophilia by the Irish Haemophilia Society. Witnesses spoke warmly of the help and care which had been provided by or through the Society sometimes in the context of terminal illness. Also, the Society had been instrumental in providing much needed counselling services for its members and their families.

Hurt, Anger and Resentment

The feelings of hurt, anger and resentment experienced by infected persons and their families was obvious to the Tribunal from their personal testimony. Many felt that they had been let down, had been allowed to become infected with HIV and/or hepatitis C and then were left to cope with the consequences of those infections with little or no adequate support and help from the relevant authorities. They felt that the BTSB, their doctors and the State authorities had failed to protect them from infection and had failed to adequately help them when they became infected. Further, they felt that the Department of Health had failed to reasonably and properly deal with and respond to their request for recompense for what had occurred. The Tribunal was left with the impression of a group of people who had suffered and endured very significant degrees of grief, pain and hardship with considerable fortitude but were left with an abiding sense of hurt, anger and resentment as a result of their experiences.

Conclusion

This Tribunal could not have fully or properly carried out its work without having had the benefit of the personal testimony of persons with haemophilia and their families. This testimony gave a unique insight into the events the subject matter of the Inquiry from the perspective of those most intimately affected by what occurred. Their evidence was at times sad, at times tragic and at times harrowing. It was the authentic voice of those whose lives had been touched and irretrievably altered by the infection which is at the centre of this Inquiry. The Tribunal believes a valuable function of this Inquiry has been to provide a forum in which this voice can finally be heard.

Part III

Division 1

Terms of Reference 1, 2, & 4 and 3, 5, 6 & 7 with reference to the BTSB, its Servants, Agents or Employees

Part III

Division 1

Introduction

In Division I the Tribunal examined Terms of Reference 1, 2 & 4, and 3, 5, 6, & 7, with reference to the BTSB, its servants, agents or employees. Term of Reference 1 deals with the blood products or blood components administered to persons in the State to treat them for haemophilia or other blood clotting disorders ("relevant products") which caused or probably caused the infection of such persons with HIV or hepatitis C. Terms of Reference 2 and 4 deal with the processing or manufacture by the BTSB of relevant products and the application by the BTSB of the policy of self-sufficiency. Terms of Reference 3 and 5 essentially deal with the selection of relevant products and the selection of manufacturers of relevant products. Term of Reference 6 focuses on the issue of when relevant persons ought to have become aware of the existence of a risk of infection with HIV or hepatitis C from relevant products. Term of Reference 7 deals with the response to the awareness of that risk.

Part III

Division 1
Chapter 1

The Cause of the Infection

Term of Reference 1: Which Products Caused or Probably Caused the Infection of Persons with Haemophilia or other Blood Clotting Disorders with HIV or Hepatitis C

HIV Infection

Mr. Seamus Dooley, Laboratory Manager of the Virus Reference Laboratory, gave evidence that his examination of their records indicated samples from a total of 104 persons with haemophilia had been found to be positive when tested for HIV antibodies – 7 persons with haemophilia B and 97 persons with haemophilia A. There was no record of any person with Von Willerbrand's disease or other similar inherited coagulation disorders having been infected with HIV. Mr. Dooley was quite definite in his evidence that the V.R.L. only had notice of 104 persons with haemophilia having been infected with HIV. He stated that he could not exclude the possibility that there were further persons with haemophilia infected with HIV of whose existence the V.R.L. is not aware. Having regard to the central role played by the V.R.L. in HIV testing, the Tribunal thinks it very unlikely there were any such persons and that it is probable that the total number of persons with haemophilia in this country infected with HIV was 104.

7 Persons with Haemophilia B

The Tribunal heard evidence from Dr. Emer Lawlor identifying two batches of BTSB Factor IX as the probable source of infection of the 7 persons with haemophilia B who became infected with HIV. The batches were batch no. 90633, issued from the 4 June 1985 to 23 July 1985, and batch no. 90753, issued from the 19 July 1985 to 28 October 1985. These batches were prepared from donations which

had not been individually screened for HIV antibodies. They had not been heat treated. All 7 persons who were infected had received treatment from one or other batch and in some cases from both. In some cases they had also been treated with other product during the relevant period. The Tribunal is, however, satisfied from the evidence of Dr. Lawlor and the evidence of Professor Temperley and Dr. Cotter that the identified BTSB batches were the probable source of infection.

"Fionn"

The Tribunal heard evidence from Professor Egan, Consultant Haematologist, Galway, and from Dr. Lawlor about a patient of Professor Egan's with haemophilia A given the pseudonym "Fionn". Samples taken from "Fionn" on the 16 October 1985 and 29 November 1985 were found to be HIV antibody positive. From the evidence of Professor Egan and Dr. Lawlor, the Tribunal believes as a matter of probability "Fionn" had been treated exclusively with cryoprecipitate prior to that date. Dr. Lawlor was unable to identify any particular treatment of cryoprecipitate as the likely source of infection. The last treatment received by "Fionn" before he was found to be HIV antibody positive was in May 1985. The cryoprecipitate used on that occasion would have been made from donations received by the BTSB in October 1984. Dr. Lawlor was unable to identify whether it was that treatment of cryoprecipitate or some earlier treatment which was responsible for the infection of "Fionn". She stated as a matter of general evidence that retrospective investigation has established that HIV – infected donations entered the Irish blood supply in 1984, that they may have done so in 1983, and that the risk of contamination was increasing during 1984.

"Simon"

The Tribunal heard detailed evidence concerning a person with haemophilia A given the pseudonym "Simon". He was HIV antibody negative on a sample taken from him on the 10 April 1985 and HIV antibody positive in a test carried out in December 1986. He received treatment with a number of products during the period which might be relevant to establishing the source of his infection. He was treated with cryoprecipitate produced by the BTSB, with Hemofil heat treated at 60 degrees centigrade for 72 hours and, a single treatment on the 21 February 1986 with Factorate, batch no. A28306, fractionated by Armour and heat treated at 60 degrees centigrade for 30 hours. Both Dr. Lawlor and Professor Temperley gave evidence to the Tribunal of their opinion that the treatment with Factorate of the 21 February 1986 was the probable source of "Simon's" infection. Their opinion was primarily based on information which has emerged since February 1986 that Armour Factorate, of the same type and heated according to the same protocol, was the probable cause of a number of seroconversions in the United States, Holland, the United Kingdom and Canada. While the possibility that "Simon" was infected by one of the other products he received cannot be totally excluded, the Tribunal accepts the evidence of Dr. Lawlor and Professor Temperley that the probable cause of his infection was the treatment with the Armour product.

95 Persons with Haemophilia A infected prior to 1 January 1985

The Tribunal believes it probable that, with the exception of "Fionn" and "Simon", all persons with haemophilia A infected with HIV were infected as a result of being treated with commercial concentrates in the period prior to the 1 January 1985. The majority of such persons were identified

to be HIV antibody positive as a result of tests carried out on samples taken between November 1984 and January 1985. In some cases samples were not taken or tested until later. Even in those cases the Tribunal believes it probable the infection occurred as a result of treatment received prior to the 1 January 1985. Before January 1985 commercial Factor VIII concentrate supplied for treatment of persons with haemophilia A in this country was generally not heat treated. After January 1985 it was. If a persons found to be HIV antibody positive on a sample taken after January of 1985 had a history of treatment with unheated Factor VIII concentrate up to the 1 January 1985 and heated concentrate in the period after January 1985, the probability would be that his infection had been caused by treatment with the unheated concentrate.

"Fionn" was the only person with haemophilia A infected with HIV identified in evidence to the Tribunal as having received only cryoprecipitate produced by the BTSB. It is probable that all of the 95 persons with haemophilia A infected with HIV were treated with commercial concentrates during the period 1980 to 1984. The Tribunal heard evidence that the following commercial concentrates were supplied to persons with haemophilia A in this country between 1980 and the end of 1984, namely:-

Hemofil, supplied by Travenol/Baxter
Kryobulin, supplied by Immuno
Factorate, supplied by Armour
Koate, supplied by Cutter/Miles

These commercial concentrates would have been fractionated from large pools of plasma obtained from paid donors and would not have been subjected to any form of viral inactivation. Some of the persons infected would also have received treatment with cryoprecipitate prepared by the BTSB from plasma from Irish voluntary donors. Cryoprecipitate was made from pools of only 5 donors. Where infected persons had received treatment with both BTSB cryoprecipitate and unheated commercial concentrates, the Tribunal believes the unheated commercial concentrates to be the probable source of infection. While the case of "Fionn" is a demonstration that the possibility of HIV infection from BTSB cryoprecipitate cannot be excluded, the risk of infection from commercial concentrates was significantly greater. Since it is probable that HIV infection did not enter the Irish blood supply until 1983 at the earliest, it also follows that cryoprecipitate prepared from donations received prior to that date were unlikely to have caused infection.

Retrospective Testing

In November 1984 a person with haemophilia A, a patient at St. James's Hospital, was diagnosed to have AIDS. The first results of the testing of samples collected between November 1984 and January 1985 for HIV antibodies became available in March 1985. What those results showed in the cases of persons who were unfortunately found to be HIV antibody positive was that they had been exposed to HIV infection. They gave no indication of when that exposure might have occurred. This could only be estimated if stored serum samples were available for retrospective testing. If, for example, a sample taken on the 1 January 1983 tested negative for HIV antibodies and a sample taken on 1 January 1984 tested positive, then, subject to allowance being made for the period between exposure to infection and the development of antibodies, a period could be identified during which exposure to infection probably took place. There were some stored serum samples

held by the Virus Reference Laboratory in respect of the persons with haemophilia infected with HIV. These samples had been taken at various dates and for various purposes prior to November 1984.

The Tribunal heard evidence of retrospective testing from three different sources:-

(1) The Temperley/Shattock retrospective study carried out in 1986

In 1986 Professor Temperley and Dr. Shattock carried out a retrospective study of stored serum samples in respect of some of the persons with haemophilia A infected with HIV. The availability of samples for testing was limited and irregular.

(2) The Collindale results

Further retrospective testing was carried out at Collindale, England, in connection with litigation brought by a group of persons with haemophilia A infected with HIV. The Tribunal received consents from some of the plaintiffs in that litigation to the Collindale results being made available to it. It also received the consent of the other parties to that litigation.

(3) V.R.L. testing carried out at the request of the Tribunal

The Tribunal was also furnished with consents on behalf of some persons with haemophilia who had been infected with HIV to further retrospective testing of any stored serum samples which might still be held by the V.R.L. A number of further samples were tested by the V.R.L. at the request of the Tribunal on foot of those consents.

The Tribunal wishes to acknowledge the contribution to the work of the Tribunal made by persons with haemophilia and the relatives of persons with haemophilia who are now deceased who furnished such consents to the Tribunal. It also wishes to acknowledge its appreciation of the co-operation the Tribunal received from the other parties to the litigation in this regard and from Mr. Seamus Dooley and the staff of the V.R.L.

Because of the irregularity in the availability of stored serum samples, the Tribunal took the view that there were very distinct limits to the information which could be derived from retrospective testing. The Tribunal also took the view that it would be inappropriate for the Tribunal to seek access to the Collindale results or to seek to have further tests carried out except with the express consent of the person concerned or the family of a deceased person. The information which can be derived from the retrospective testing made available to the Tribunal is necessarily limited and incomplete. They have nonetheless been of considerable benefit and the Tribunal believes it is possible to obtain from them a general impression of when infection with HIV is likely to have occurred. The Tribunal's view from the retrospective testing it has studied is that by the middle of 1983 the majority, but not all, persons with haemophilia A who were infected had become infected and the remaining persons were infected between the middle of 1983 and the end of 1984. As an indication of the Tribunal's view of the approximate proportion involved rather than an attempt at any mathematical definition, the Tribunal would say that two-thirds of the persons with haemophilia A who became infected were already infected by the middle of 1983 and the remaining one-third were infected between the middle of 1983 and the end of 1984.

The Tribunal formed the impression the state of treatment records and the availability of stored samples were such that it would be impossible to form a fixed and certain view as to which particular product caused a particular infection. The difficulty in this regard was exacerbated by the fact that the despatch records of the BTSB in regard to relevant blood products had been destroyed in 1993, for reasons which remain unclear. In the Tribunal's view what seemed important to establish was whether the probable source of infection was commercial concentrate or BTSB cryoprecipitate and that it would not advance the work of the Tribunal significantly to establish which brand of commercial concentrate was involved.

Infection with Hepatitis C

Mr. Seamus Dooley gave evidence that the records of the Virus Reference Laboratory recorded 217 persons with haemophilia having tested positive for hepatitis C antibodies. Mr. Dooley stated that some hepatitis C testing in this country was carried out other than by the Virus Reference Laboratory, and that although 217 would be an accurate figure in respect of tests carried out at the Virus Reference Laboratory, he would not be surprised to find that some more people with haemophilia had been infected with hepatitis C. The Tribunal accepts this evidence and regards the figure of 217 persons as being less definitive than the figure of 104 persons with haemophilia infected with HIV. The Tribunal regards the figure of 217 persons as a minimum figure. It is likely some more persons with haemophilia were infected with hepatitis C. Hepatitis C infection also, differed from HIV infection in that Professor Temperley gave evidence of a survey carried out in 1997 which showed 10 persons with Von Willerbrand's disease and 5 persons with other inherited coagulation disorders to be infected with hepatitis C. As already noted, no such persons were infected with HIV.

Mr. Dooley also gave evidence of the relationship between HIV infection and hepatitis C infection among persons with haemophilia. 69 persons were infected with both HIV and hepatitis C. 148 persons were infected with hepatitis C alone. In respect of 35 persons infected with HIV, the V.R.L. had no record of a hepatitis C antibody positive test. For five of that group of 35 persons the V.R.L. had records of negative hepatitis C antibody tests between 1990 and 1994. For the remaining 30 the V.R.L. simply had no record of any hepatitis C antibody test, whether positive or negative. It follows from these figures that the total number of persons with haemophilia recorded in the V.R.L. as having been infected with either HIV or hepatitis C or both was 252. Again it is important to note these figures simply set out the figures in regard to tests recorded in the V.R.L. as best as can be ascertained by Mr. Dooley.

The Tribunal is satisfied from the evidence that all products which were used for the treatment of persons with haemophilia and related disorders in this State prior to 1990, which had not been subjected to a form of viral inactivation effective against the transmission of NANB hepatitis/hepatitis C, were potentially infectious. This applied to products produced by the BTSB as well as to commercial products. There was a background level of NANB hepatitis present in the Irish population from which donations for BTSB products were drawn as well as in the American population from which plasma for the commercial concentrates was collected. In the absence of screening of donations for hepatitis C antibodies and an effective form of viral inactivation, it was inevitable that some NANB hepatitis/hepatitis C would be transmitted through blood products. Because of the large pools of plasma involved in commercial concentrates, a single treatment with a

commercial concentrate carried a much higher risk of infection that a single treatment with BTSB cryoprecipitate, fractionated from a pool of five donors. BTSB cryoprecipitate did, however, carry a risk of infection which increased significantly in the case of a person requiring regular treatment since such a person would cumulatively be exposed to the risk of infection from a large number of donors. The great majority of persons infected with hepatitis C would have received regular treatment over a period of time with a number of different products. Because all such products carried the risk of infection, it would be quite impossible to identify the particular product responsible for the infection.

BTSB Factor IX Batch No. 9885

In one instance a specific product was identified in evidence to the Tribunal as the probable source of infection of four persons with haemophilia B. Dr. Lawlor identified BTSB Factor IX batch no. 9885 as the probable source of infection with hepatitis C of an adult with haemophilia B given the pseudonym "Luke" and of three children with haemophilia B given the pseudonyms "Henry", "Gordon" and "Joseph". With the consent of "Luke" and the parents of the children, the Tribunal arranged to have samples of their blood together with the sample of the BTSB Factor IX batch no. 9885 sent to Dr. Peter Simmonds of Edinburgh, an expert in sequencing the hepatitis C virus. Dr. Simmonds gave the results of his investigations in the form of a letter which was produced in evidence to the Tribunal. He was not able to isolate virus from the sample of batch no. 9885. He was able to sequence the virus in the samples from the four patients and he expressed the view that there was a close association, with a common single source of infection. Since Dr. Lawlor had already identified in evidence to the Tribunal that all four patients had received treatment from BTSB batch no. 9885, the investigations carried out by Dr. Simmonds confirmed the opinion already expressed to the Tribunal by Dr. Lawlor. The Tribunal, therefore, is satisfied as a matter of probability that BTSB Factor IX batch no. 9885 was the source of infection with hepatitis C of the patients given the pseudonyms "Luke", "Henry", "Gordon" and "Joseph".

Part III

Division 1
Chapter 2

The BTSB: Introduction

Terms of Reference 2 & 4, and 3, 5, 6 & 7 with reference to the Blood Transfusion Board, its servants or agents and employees.

The Blood Transfusion Service Board, BTSB, is a statutory corporation established by an Order made by the Minister for Health in 1965 under The Health (Corporate Bodies) Act 1961. It took over the assets, liabilities and rights of the National Blood Transfusion Association which had been established in 1948. The BTSB was intended to be a national service although in 1965 there were two other blood transfusion services in existences, one in Cork and one in Limerick. The Cork service amalgamated with the BTSB in 1976 and the Limerick service in 1991.

The functions of the BTSB, as set out in paragraph 4 of the Blood Transfusion Service Board (Establishment) Order 1965, S.I. No. 76/1965 included:-

> "*(b) To organise and administer a blood transfusion service (hereinafter referred to as "the Service") including the processing or supply of blood derivatives or other blood products and also including blood group and other tests in relation to specimens of blood received by the Board;*
>
> *(c) to make available blood and blood products;*"

The BTSB was also given appropriate ancillary functions and powers.

The BTSB is administered by a Board, the members of which are appointed by the Minister for Health & Children. The Minister also appoints the Chairman of the Board.

(See Appendix 10 for Statutory Instrument S.I. No. 78/1965.)

The BTSB has recently changed its name to the Irish Blood Transfusion Service. However, since throughout the period relevant to the inquiries of this Tribunal, the organisation was referred to as the BTSB or Blood Transfusion Service Board, to avoid confusion the Tribunal proposes to refer to it by that name.

Relevant Senior Staff of BTSB

Dr. Jack O'Riordan held the position of National Director of the BTSB until he retired on 31 December 1985. The position of National Director combined the roles of Chief Medical Consultant and Chief Executive Officer. When Dr. O'Riordan retired these roles were divided. Dr. Vincent Barry was appointed Chief Medical Consultant and held that position until he retired on the 31 December 1987. He was succeeded by Dr. Terence Walsh who held that position until his retirement in 1995. Mr. Edward Keyes was appointed Executive Consultant in January 1986 and Chief Executive Officer in 1987. He held that position until he retired in 1995.

Dr. Joan Power was appointed Medical Registrar, Cork in June 1985 and Consultant Haematologist, Cork in 1989.

Ms. Cecily Cunningham held the position of Principal Biochemist from 1974 during the period relevant to the Tribunal's inquiries.

Mr. John Cann, held the position of Chief Technical Officer until he retired on 30 April 1987. He was then succeeded by Mr. Sean Hanratty, who had previously held the position of Senior Technical Officer. Mr. Sean Hanratty in turn retired on the 2 October 1996. Mr. John Keating held the position of Technical Officer until the 30 April 1987 when he succeeded Mr. Sean Hanratty in the post of Senior Technical Officer.

Dr. James Kirrane was employed as a part-time consultant to the BTSB but the Tribunal is satisfied from his evidence that he did not have any involvement in the matters which are the subject of this inquiry.

Mr. Edward Ryan held the position of Accountant and Personnel Officer from 1974 until his retirement in 1988.

Dr. Jack O'Riordan and Mr. Sean Hanratty are both deceased. The Tribunal heard evidence from all the other persons mentioned. The unavailability of Dr. O'Riordan and Mr. Hanratty is particularly unfortunate because both played a major role in the work of the BTSB in providing products for the treatment of persons with haemophilia. The obvious difficulties which this created for the Tribunal were considerably alleviated by the work carried out by Dr. Emer Lawlor, Consultant Haematologist and Deputy National Medical Director of the BTSB. She undertook the task of examining the records of the BTSB relevant to the Tribunal's inquiries and presenting evidence to the Tribunal on behalf of the BTSB based on her examination of the records.

The Tribunal found Dr. Lawlor's evidence very helpful. It was clear, thorough and careful in regard to factual matters. She adopted the role of seeking to explain and defend the actions of the BTSB where she considered they could be explained or defended. The Tribunal is satisfied Dr. Lawlor carried out her research and gave her evidence in a conscientious and responsible manner. The work of the Tribunal was greatly facilitated by the work of Dr. Lawlor and, indeed, by the full co-operation of the BTSB. The Tribunal thinks it right that this should be recognised and acknowledged.

Chronological Division

In examining the work of the BTSB relevant to the Terms of Reference in Division 1 it is convenient to consider three separate periods:-

(1) Prior to June 1982
(2) June 1982 to December 1986
(3) After January 1987

Part III

Division 1
Chapter 3

The BTSB: The Period prior to June 1982

Developing Knowledge of NANB Hepatitis

The Tribunal had the advantage of hearing evidence of the emerging state of knowledge of the risk of infection with NANB hepatitis from, amongst others, three experts who contributed significantly to that emerging knowledge, Dr. Alfred Prince, Virologist, and Professors Mannucci and Preston, Haematologists.

The existence of a hepatitis virus or viruses which were neither hepatitis A nor B was identified in an article published by Dr. Prince & Others in the Lancet on the 3 August 1974. Hepatitis, defined by reference to raised serum-transaminase levels, was identified in a group of post transfusion patients. It was then established that the hepatitis was probably not caused by either hepatitis A or hepatitis B. The authors, therefore, suggested the existence of some other as yet unidentified hepatitis virus or viruses. The existence of this new form of hepatitis, which became known as non-A non-B hepatitis, was confirmed in subsequent publications. The virus was not, however, identified until 1989. The condition was then named hepatitis C.

Initially, it was generally thought that non-A non-B hepatitis was relatively mild and non-progressive. This view was supported by a number of studies and publications including papers published by Professor Mannucci & Others in 1975 and 1982. In the 1974 article Dr. Prince and his co-authors had drawn attention to the fact that in hepatitis B long term complications could follow mild acute phases of the illness. They, therefore, suggested that although the acute phase of non-A non-B hepatitis was generally not serious, consideration should be given to the possibility that it might result in some form of chronic liver disease. Papers were published which tended to show that the condition of NANB hepatitis was more serious and more progressive than was then generally thought to be the case. These publications included a paper by Professor Preston & Others published in the *Lancet* in September 1978 and a letter by Professor Preston & Others to the *Lancet*

published in March 1982. The evidence from Dr. Prince and Professor Preston was, however, clear that in the period up to June 1982 the consensus or general view of NANB hepatitis remained that it was relatively mild or benign. Professor Preston stated in evidence that the general consensus at the end of the 1970s coming into the early 1980s was that while NANB was persistent and chronic, it was not considered to be dangerous or very serious and that most individuals would have been of the view that it was relatively mild, although worrying because it was there. Dr. Prince stated that in the early days it was generally concluded that it was a pretty mild infection possibly involving some kind of harmless pathogen. He expressed the view that the slow rate of progression after infection with NANB hepatitis and the absence of a specific test for hepatitis C until after 1989, were reasons for the slow development of a true appreciation of the seriousness of the condition.

During the period between 1974 and 1980 it became known that persons with haemophilia who received multiple treatments with blood products were likely to develop NANB hepatitis. It was understood that the risk of infection from concentrates made from large pools of plasma was higher than the risk of infection from products made from single donations or small pools of plasma. It was probably generally thought that concentrates fractionated from donations from paid donors carried a higher risk of infection than concentrates fractionated from voluntary donors. While the risk of infection from products made from single donations or small pools was less, it was not non-existent. NANB hepatitis was found among persons with haemophilia who had received only such products. This was particularly so where patients had received multiple treatments. Professor Mannucci referred in his evidence to a 1977 joint American and English study reported by Peter Levine & Others which showed a 48.5 per cent rate of infection among a group of English patients with haemophilia who had been treated with cryoprecipitate only.

Central Purchasing and Distribution of Commercial Concentrates by the BTSB

Events in Ireland

Significant quantities of commercially fractionated Factor VIII concentrate for the treatment of persons with haemophilia A were first imported into this country in 1974. Importation of commercially fractionated Factor IX concentrate for the treatment of persons with haemophilia B started in 1977. In both cases the BTSB acted as a central purchasing and distributing body. It purchased the Factor VIII and Factor IX concentrates from the commercial fractionators and it sold and supplied them to the National Haemophilia Treatment Centre, regional centres and other hospitals providing treatment to persons with haemophilia. This practice evolved on an informal basis until 1980 when a formal written policy was adopted by the National Haemophilia's Service Co-ordinating Committee, (NHSCC). A draft policy was prepared in November 1979 and adopted with some amendments at a meeting of the NHSCC on the 29 January 1980.

The policy provided that the director of the National Haemophilia Treatment Centre and the regional directors should, on an annual basis, evaluate all available products in consultation with the National Drugs Advisory Board, NDAB, and the BTSB and should then recommend to the NHSCC the Factor VIII and Factor IX product or products to be purchased for a period of one year. It also provided that the NHSCC should then recommend to the Department of Health that only the recommended products should be subsidised by the Department of Health during the specified year. The policy expressly provided that the BTSB should continue to be the central purchasing and distribution body for commercial Factor VIII and Factor IX concentrates. The procedures contemplated in this written policy were not followed precisely *(see Appendix 12 for the policy adopted in 1980)*. In

practice, the treating doctors attending the NHSCC consulted among themselves in the autumn about the commercial products they wished to have ordered for the following year. They then consulted with the BTSB, at this time generally either with Dr. O'Riordan or Mr. Sean Hanratty, and a decision was taken on the products to be purchased for the following year. The NHSCC was then informed of the decision at its spring meeting. There is no record of the N.D.A.B. ever having being consulted in this process. In practice, it seems the decision was taken jointly between the treating doctors and the BTSB and presented to the NHSCC as something of a fait accompli. It would have been open to any member of the NHSCC to voice an objection to the product chosen. There is no record of this having occurred during this period. Almost all the commercial concentrate supplied into the country during this period came through this system. However, on occasions, doctors obtained product directly from a pharmaceutical company.

It was not inevitable that the supply of commercial concentrates to this country should have been organised through a central purchaser and distributor. The treating doctors could have dealt directly with the pharmaceutical companies or their agents. There were, however, advantages in having a central purchaser and distributor. It brought together whatever knowledge and expertise was available in this country. It improved the bargaining position of the central purchaser in dealing with the commercial companies, enabled continuity of supply to be planned for and organised in an orderly fashion and enabled the consumption of commercial products to be monitored.

It was not inevitable that the BTSB should have fulfilled the role of central purchaser and distributor. Some other body might have done so. The two most obvious alternatives would have been the NHSCC or the National Haemophilia Treatment Centre. The NHSCC was simply a co-ordinating committee without any staff or resources and could not have done so. While the National Haemophilia Treatment Centre presumably could have established a system for supplying products throughout the country, it did not then have such a distribution system in place. There might also have been resistance on the part of some treating doctors to the idea of obtaining products for the treatment of their patients through the National Haemophilia Treatment Centre. The BTSB had an existing national supply and distribution system for blood and blood products. Hospitals and doctors were accustomed to obtaining a supply of blood or blood products from the BTSB. The BTSB had and were known to have expertise in blood products. While the BTSB was not the only or inevitable choice for the role of central purchaser and distributor, it was, perhaps, a natural and appropriate choice.

The BTSB had a responsibility in respect of the safety of the commercial concentrates which they distributed. Their responsibility as distributor was less than their responsibility for the products which they produced or fractionated themselves. They were not, of course, the only body with responsibility in respect of the safety of the commercial concentrates they distributed. The fractionators of the products, the regulatory authorities which licensed them, the treating doctors who recommended them to the BTSB for purchase, the NHSCC which approved the decision to purchase and the doctors who prescribed the products for individual patients would all have shared in that responsibility. The BTSB nonetheless had a specific responsibility as distributor of the commercial products which, in the Tribunal's view, went beyond that of a purely commercial distributor. The BTSB was a public service body with expertise in blood products. There would have been greater reliance on the imprimatur of the BTSB in distributing the products than in the case of a commercial distributor.

The procedures adopted provided an appropriate opportunity and mechanism for the BTSB to discharge their responsibility as central purchaser and distributor of the commercial concentrates. Under the original informal practice the decision on what concentrates to import seems to have been taken after informal consultation between the treating doctors and the BTSB. The NHSCC met regularly and was multi-disciplinary in nature, involving representatives of a broad range of

persons and bodies concerned with persons with haemophilia. The written policy adopted in 1980 was innovative and forward thinking in giving the NHSCC a central role in the choice of commercial products to be imported. The practice which was adopted after 1980 of consultation among the treating doctors and between the treating doctors and the BTSB before a decision was presented to the NHSCC reduced the role of the NHSCC in the decision making process. The practice adopted gave the BTSB considerable influence in that process. Although the products to be purchased for the forthcoming year were initially proposed by the treating doctors they were not selected until after consultation between the treating doctors and the BTSB. In that consultation the BTSB had an opportunity to voice any objections or reservations they might have about proposed products. If the treating doctors and the BTSB had been unable to agree, the matter would presumably have been referred to the NHSCC for its decision, although there is no record of this ever having occurred.

The information about the risk of infection with non-A non-B hepatitis and its consequences described in the preceding section would have been available to the BTSB. Dr. O'Riordan, Medical Director of the BTSB, would have been exposed to this information through his attendance at medical and scientific meetings and conferences as well as through the relevant publications.

The tribunal believes a number of specific issues should be considered.

Should the BTSB have refused in principle to import and distribute commercial concentrates during this period in the light of the then known risk of transmission of non-A non-B hepatitis?

The use of commercial concentrates for Factor replacement therapy brought very considerable clinical, social and other advantages for persons with haemophilia – particularly in enabling major surgical procedures to be carried out and in facilitating the provision of home treatment for persons with moderate of severe haemophilia who required frequent treatment. These matters will be described more fully in considering the role of the treating doctors. The BTSB were unable during this period to provide products fractionated from plasma from voluntary Irish donors which were comparable to the commercial concentrates in clinical efficacy and ease of use. In those circumstances, the Tribunal's view is that the state of medical and scientific opinion and practice in respect of the risk of infection with non-A non-B hepatitis already described did not warrant the BTSB refusing, in principle, to import or distribute commercial concentrates.

Should the BTSB have advocated the use of BTSB cryoprecipitate where possible in preference to commercial Factor VIII concentrate to reduce the risk of infection with non-A non-B hepatitis?

The BTSB did advocate the preferential use of BTSB products. One example of such advocacy is recorded in a draft version of the written policy adopted by the NHSCC in January 1980. The draft recorded a divergence of opinion between the clinicians and the BTSB regarding the use of commercial concentrates for home therapy. This reference was dropped from the version of the policy finally adopted. This advocacy by the BTSB of the preferential use of home produced products was not prompted solely or perhaps even mainly by concern about the risk of non-A non-B hepatitis. They had broader ethical and practical reasons for advocating the use of such products. They were also, of course, not completely disinterested in that they were advocating the

use of products produced directly by the BTSB. It seems from the evidence of Professor Temperley that this was apparent to the treating doctors and may have lessened the impact of the promotion by the BTSB of the use of home produced products.

Did the BTSB make an appropriate contribution from the point of view of safety in the selection of concentrates for central distribution?

The two officials of the BTSB who dealt with the choice of pharmaceutical companies to supply commercial concentrates during this period were Dr. O'Riordan and Mr. Sean Hanratty. Both are now dead. The discussions between them and the treating doctors about the products to be purchased for a forthcoming year tended to be understandably conducted through personal contact. The written records of such discussions are limited. The Tribunal obviously had no direct evidence of the considerations which influenced Dr. O'Riordan and Mr. Hanratty in deciding between one commercial fractionator and another. The limited written records and the recollection of Professor Temperley in evidence suggest that matters such as price, continuity of supply and the presentation of the product in a manner which made it convenient for use, including home use, played a significant part in these discussions. There is no evidence that the BTSB sought information from the commercial fractionators which would have enabled it to differentiate their products in terms of the risks of transmission of non-A non-B hepatitis. Professor Temperley stated in evidence that he regarded the products from the commercial fractionators who supplied product to this country during this period as being equivalent in terms of the risk of transmission of non-A non-B hepatitis. All the commercial concentrates imported during this period were fractionated from large pools of plasma obtained from paid donors and were not subjected to any form of viral inactivation. The Tribunal heard no evidence to indicate that it would have been possible to differentiate between them in respect of the risk of transmission of non-A non-B hepatitis. In the absence of any evidence to the contrary, the Tribunal considers it should assume that the BTSB through Dr. O'Riordan and Mr. Hanratty would have shared Professor Temperley's view that the commercial concentrates were equivalent in their risk of transmission of non-A non-B hepatitis.

Did the BTSB have a duty to make sure that the risk of infection with non-A non-B hepatitis was made known to persons being treated with the commercial concentrates?

In the light of what is now known about the seriousness of the condition of hepatitis C and by the standards of disclosure of information to persons receiving medical treatment applicable today, it may seem extraordinary that this question should even be posed. The standards for the disclosure of information and the information which was available about non-A non-B hepatitis were both very different in the period prior to June 1982. The Tribunal nonetheless takes the view that even by the then applicable standards and in the light of the then available information the BTSB had such a duty.

The manufacturers of the commercial concentrates distributed by the BTSB included a warning about the risk of hepatitis on the vials in which the concentrate was supplied and in the information leaflets supplied with them. It was argued on behalf of the BTSB that they were entitled to rely upon this as a communication of the risk to persons being treated with the concentrated. It was also argued that the risk of hepatitis would have been known to treating doctors prescribing the use of commercial concentrates and that the BTSB were entitled to presume that the doctors would inform their patients of the risk. Both of these arguments have considerable force in relation to

persons receiving regular treatment under the care of a consultant haematologist.

An opportunity was, however, missed by the NHSCC to reinforce the communication of risk to individual patients. The minutes of the NHSCC meeting of the 5 October 1979 indicate that in the course of a discussion of the advantages of home therapy involving the use of commercial concentrates reference was made to the risk of contracting hepatitis. It was recorded that consideration should be given to the preparation of a leaflet setting out basic facts regarding home therapy and the risk of hepatitis. Unfortunately, there is no record of such a leaflet having been prepared and distributed.

The minutes of the same meeting of the NHSCC also record discussion of the policy for the central purchase and distribution of commercial concentrates which was subsequently adopted by the NHSCC in January 1980. There was a specific reference in that context to the position of hospitals not within the aegis of the National Haemophilia Centre who were understood to be administering haemophilia treatment. Evidence heard by the Tribunal would indicate that consultant haematologists were not employed at such hospitals. Whereas it may have been reasonable for the BTSB to presume that consultant haematologists would have been aware of the risk of hepatitis from commercial concentrates and would have communicated that risk to their patients, in the Tribunal's view the same presumption did not apply where the treatment was being prescribed by doctors who were not consultant haematologists. In the Tribunal's view steps should have been taken to draw the attention of such doctors to the risk of hepatitis attached to the use of commercial concentrates. It seems this was not done. It also seems that this was part of a larger problem of lack of information and communication to treating doctors providing treatment to persons with haemophilia outside the National Haemophilia Treatment Centre. Both the National Haemophilia Treatment Centre and the NHSCC may have had a role to play in providing such information and facilitating such communication and the general issue will, therefore, be examined in more detail when the work of the National Haemophilia Treatment Centre and the NHSCC is being considered, at Part V, Chapters 2 to 6 and at Part V, Chapter 9 respectively.

The BTSB, as a member of the NHSCC, was aware of whatever information was disseminated to treating doctors outside the National Haemophilia Treatment Centre by the NHSCC. It would also probably have been aware and, if not aware, could readily have ascertained, whether any such information was disseminated by the National Haemophilia Treatment Centre. It also should have been aware that there was more likely to be reliance on the knowledge and expertise of the BTSB as distributor of the commercial concentrates where they were being prescribed for treatment by or under the supervision of a doctor who was not a consultant haematologist. In the Tribunal's view, while the BTSB was not the only body with a responsibility to draw the attention of such treating doctors to the risk of hepatitis attached to the use of commercial concentrates, it did have a duty in all the circumstances as distributor of the commercial products to do so which it failed to discharge.

Self-sufficiency

National Self Sufficiency

The policy of national self-sufficiency involved the notion that each country should be self-contained in regard to blood resources – that the blood and blood products used should be derived exclusively from blood or plasma collected in that country. During this period, the BTSB, in common with many other national blood services, both promoted the policy and aspired to achieve it in practice. Various arguments in favour of national self-sufficiency were advanced by its proponents. Some were essentially ethical. A system of national self-sufficiency organised on the basis of voluntary donors was contrasted with the practices of the commercial fractionators and the

exploitation involved in obtaining blood or plasma from paid donors, sometimes from donors in one country for products to be sold in another and in all cases presumably from economically disadvantaged and vulnerable persons who would be attracted by the payment. Issues of safety were also raised. Donations from paid donors were believed to carry a higher risk of transmission of infection, including non-A non-B hepatitis than donations from unpaid donors. There was also a more general concern that if products fractionated from plasma collected in one country were used to treat persons in another country it might be a means of transmitting infection from one country to the other. It was argued that a country would have greater security of supply of blood products if they were produced from within its own resources. There were finally economic considerations – the notion that self-sufficiency would enable a country to have more control over the price to be paid for blood products and also that it was preferable money paid for blood products should be paid within a country rather than to foreign fractionators. Dr. O'Riordan was a known advocate of the policy of self-sufficiency. He frequently advanced these or similar arguments in its support.

Cryoprecipitate

The earliest treatment for persons with haemophilia, whether A or B, was by transfusion, initially of whole blood and then of plasma. The development of cryoprecipitate for the treatment of persons with haemophilia A represented a considerable advance. A letter of the 6 June 1967 from Professor Temperley to Dr. O'Riordan reported on what seems to have been one of the first uses of cryoprecipitate prepared by the BTSB in the treatment of a person with haemophilia. The letter referred to the fact that the cryoprecipitate had been prepared by Mr. Sean Hanratty and asked Dr. O'Riordan to thank Mr. Hanratty for his work on the development of the cryoprecipitate. BTSB cryoprecipitate was the standard product for treatment of persons with haemophilia A in this country until the advent of commercial concentrates from 1974 onwards. The cryoprecipitate was wet frozen cryoprecipitate and was significantly more difficult to store, reconstitute and use and significantly less clinically effective than the commercial concentrates.

Freeze–dried Cryoprecipitate

On 30 May 1974 Dr. O'Riordan complied a report on Hemophil, a commercial factorate concentrate fractionated by Travenol. In the report he drew attention to the possible disadvantages involved in the use of the commercial product and stated that "*An answer to the problems which the advances in therapy make desirable lies in making available a more acceptable and improved form of cryoprecipitate.*" He stated that the BTSB proposed to introduce a freeze-dried cryoprecipitate. In wet frozen cryoprecipitate the final product was a liquid which required to be frozen and kept frozen until thawed immediately prior to use. In freeze-dried cryoprecipitate the final product was in a powder form and was kept in that form until reconstituted with sterile water immediately prior to use. Freeze-dried cryoprecipitate was thus easier to store and reconstitute than wet frozen cryoprecipitate but it was less concentrated and more awkward and difficult to infuse than commercial concentrate.

The BTSB did not in fact supply freeze-dried cryoprecipitate until October of 1977. A memo prepared by Mr. Cann of the 13 October 1977 referred to successful clinical trials with freeze-dried cryoprecipitate. In the intervening period use of the commercial concentrates by the treating doctors had commenced. In March 1975 Professor Temperley had written to Dr. O'Riordan requesting that the BTSB prepare a freeze-dried Factor VIII concentrate expressly on the basis that this would facilitate a home treatment programme for persons with haemophilia. The freeze-dried cryoprecipitate produced by the BTSB three years later never gained general acceptance among the treating doctors as a product suitable for use for home treatment. Whether BTSB freeze-dried

cryoprecipitate would have gained general acceptance for home treatment if made available by the BTSB in 1974 or 1975 is a matter of speculation. It seems unlikely, having regard to the approach adopted by the treating doctors to the use of concentrates. Whatever chance there might have been in 1974 and 1975 was less in 1977 when the use of concentrates had become more established and accepted both in this country and internationally. It would have been difficult for doctors and persons with haemophilia who had become used to the advantages of using concentrates to revert to the more awkward freeze-dried cryoprecipitate. The explanation offered to the Tribunal for the delay by the BTSB in producing freeze-dried cryoprecipitate, involving delay in obtaining a necessary machine to carry out the freeze drying, does not seem adequate to explain the three year delay between Dr. O'Riordan's report in 1974 and the development of the product in 1977. That delay weakened the position of the BTSB in advocating the use of home produced product for the treatment of persons with haemophilia A during that period.

The 1980 Policy

In the years after 1977 the use of commercial concentrates as a proportion of the total treatment provided to persons with haemophilia A increased. *(See Appendix 11.)* This information was obviously available to the BTSB. Inherent in the policy document adopted by the NHSCC in January 1980 was an acceptance that the product produced by the BTSB was not sufficient to meet all the requirements of the treating doctors at that time. This was the inevitable implication of the policy for the central purchasing and distribution of commercial concentrates. The policy document expressly endorsed the importance of the national product of Factor VIII and Factor IX and concluded:

> "*It is therefore recommended that, as a matter of urgency, the Blood Transfusion Service Board be requested by the Department of Health to begin as soon as possible the production of a more concentrated form of Factor VIII than the present freeze-dried cryoprecipitate.*"

(See Appendix 12)

The Challenge

An attempt by the BTSB to produce a Factor VIII concentrate, as distinct from cryoprecipitate had to confront two major problems – whether it was possible for the BTSB to collect enough plasma to produce sufficient Factor VIII concentrate to meet the national requirement and whether the BTSB had the necessary expertise and financial and other resources to engage in the more complicated and demanding process of producing large volumes of Factor VIII concentrate. The first problem arose because the production of Factor VIII concentrate required significantly greater quantities of plasma than the production of cryoprecipitate. The total quantity of plasma which would have been required to supply sufficient Factor VIII concentrate to meet the national requirement for treatment would have been significantly higher than the amount of plasma required to produce sufficient cryoprecipitate to meet the same requirement. The BTSB attempted to solve the first problem by a project which became known during the course of the work of the Tribunal as the Heparin project. It never directly confronted the second problem in practice, in that the attempt to produce its own Factor VIII concentrate was ultimately abandoned at the beginning of 1984 in favour of a policy of custom fractionation before any attempt had been made to plan for or implement a large–scale production of Factor VIII concentrate.

The Heparin Project

The Heparin project essentially involved work by Mr. Sean Hanratty on a method of collecting and processing plasma developed by Dr. Gale Rock of Canada. The essential elements of that method were that blood was collected into the anti-coagulant Heparin rather than the usual Citrate anti-coagulants and the plasma was subjected to a modified form of cryoprecipitation. The advantage claimed for the method was a greatly increased yield of concentrate – double the yield of the usual cryoprecipitation of citrated plasma. Work on the Heparin project in the BTSB appears to have commenced in approximately 1980 and to have continued until the end of 1983 or beginning of 1984. It seems the work was carried out by Mr. Sean Hanratty personally with limited assistance in the practical aspects of the work from a laboratory technician. Although there were regular references to the project in the minutes of the NHSCC, and to a lesser extent the minutes of the BTSB, the surviving written records relating to the work are limited and, of course, since Mr. Sean Hanratty is dead the Tribunal did not have the benefit of his account of his work.

The Tribunal did have the benefit of very helpful expert evidence concerning the Gale Rock method from Dr. James Smith and Professor Van Aken. At the relevant time Dr. Smith, a scientist, was employed at the Plasma Fractionation Laboratory at the Oxford Haemophilia Centre which in turn was part of the Blood Products Laboratory at Elstree. The laboratory specialised in the development of concentrates. Dr. Smith stated in evidence that the Gale Rock method and the promise it held out of increased yield was of considerable interest to his laboratory. Approximately twenty to thirty people were employed in the laboratory at the time and Dr. Smith estimated that for approximately one year between 30 and 50 per cent of the laboratory's Factor VIII development efforts went into scrutinising the Rock procedure. Dr. Smith's evidence was that by the end of 1981 they had concluded that there was in fact no significant increase in yield and that the disadvantages for a Transfusion Centre in taking a large fraction of all their blood into Heparin rather than the normal citrated anti-coagulants far outweighed any potential there was to achieve a small improvement of yield from the Rock method. His centre, therefore, decided not to pursue research on the method any further. He also stated that he would have been in contact with other persons interested in the Gale Rock method including Mr. Sean Hanratty and that he would have informed Mr. Hanratty of their conclusion and decision not to pursue the matter further, at least informally, by the end of 1981.

Professor Van Aken's evidence was that in Holland the Central Laboratory for Blood Products was sceptical about the claims made for the Gale Rock method because they were unable to produce the claimed improvement in yield. He also stated they were concerned about the residual Heparin in the final product. He stated that Groningen, one of the Regional Centres in Holland, pursued the Gale Rock method to the point of producing a product for the treatment of patients which was subsequently reported in the scientific literature. He also, however, stated that he understood there were problems associated with the use of the product in clinical practice. Dr. Smith had informed the Tribunal that although he was aware of this development of the product by Groningen, it was not his understanding that they used the Gale Rock method as their routine method of producing cryoprecipitate or Factor VIII. He also stated that he understood the Gale Rock laboratory closed some time in the mid-1980s.

In the light of this expert evidence, the Tribunal has formed the view that the promise which the Rock method initially held out of greatly improving yield was not borne out on closer examination. It is also the Tribunal's view that the problems involved in pursuing the method were in general well established by the end of 1981 and, perhaps more importantly, that Dr. Smith had specifically made known to Mr. Sean Hanratty the results of the work of his laboratory by that time.

In the minutes of the NHSCC meeting of the 22 January 1982 it was recorded:-

> *"Mr. Hanratty advised that he had attended an international conference in the Netherlands on the production methods involving concentrate products. As a result he was pleased to report that, although the conference had introduced a certain caution, the volume of work already undertaken in Dublin in this regard was favourably advanced."*

In the same minutes it was further recorded:-

> *"Mr. Hanratty was hopeful that the trials would be completed in three months' time allowing for the introduction of home produced concentrates in about six months' time."*

The first entry clearly reflects negative information which Mr. Hanratty would have received about research into the Gale Rock method from, amongst others, Dr. Smith. The second entry contains what turned out to be a totally unrealistic forecast that concentrates produced by the Rock method could be introduced within a period of six months.

In the Tribunal's view, the BTSB probably ought to have realised by not later than approximately June 1982 that the Rock method was unlikely to be capable of being used for large–scale production of Factor VIII concentrates sufficient to meet the national requirement. In coming to that view, the Tribunal is not overlooking the disparity between the resources devoted to research on the project in Dr. Smith's laboratory and the position at the BTSB where it seems essentially all the significant work was done by Mr. Hanratty in whatever time he had available to him after pursuing his normal duties. It could be argued that it was understandable that the pace of Mr. Hanratty's work should be slower. However, it might also be thought that the disparity in resources and expertise was all the more reason why Mr. Hanratty should have taken due notice of the information made available to him by Dr. Smith. The Tribunal is also not overlooking Dr. Smith's careful and polite evidence that although he had decided to abandon the Rock method by the end of 1981 because of the results his laboratory were achieving, Mr. Hanratty at the BTSB might have been achieving more favourable results in his work. The state of the records do not enable the Tribunal to form a definite view on whether this was the case. Even, however, if Mr. Hanratty was achieving what appeared to be favourable results in the preparation of small–scale experimental quantities of product he should, having regard to the information available about the Rock method by June of 1982, have been wary and cautious about the possibility of being able to use the method for large scale production of concentrate. Whereas it might have been appropriate for research to have continued on the Heparin project after June of 1982 as one of a number of alternative strategies which might facilitate the achievement of self-sufficiency, it was quite unrealistic and inappropriate, as in fact occurred, for all efforts towards achieving self-sufficiency in Factor VIII concentrate production to have continued to focus on the Heparin project after June 1982.

Custom Fractionation

The policy ultimately adopted by the BTSB to achieve self-sufficiency was custom-fractionation. This will be considering in examining the work of the BTSB in the next chronological period, after June 1982. The issue which arises in this section is whether the BTSB ought to have adopted a policy of custom fractionation prior to June 1982. The system of custom fractionation eventually adopted by the BTSB can be simply described. Plasma was collected by the BTSB and sent to a commercial fractionator. Factor VIII was produced by the commercial fractionator from the plasma and returned to the BTSB. Although the fractionation was carried on outside the country, the concentrate was produced from voluntary donations collected in this country. Such a policy of custom fractionation, therefore, satisfied the requirements of self-sufficiency.

The Tribunal heard evidence from Dr. Lawlor and Dr. Horowitz that custom fractionation was carried out in the United States from 1979 onwards. However, there was no evidence of custom fractionation being carried out in Europe during this period and no evidence of an entire national collection of plasma being sent out of the country for the purpose of custom fractionation. In the circumstances, it is not surprising that there is no evidence of the BTSB having considered the possibility of a custom fractionation arrangement for the production of Factor VIII concentrate with a commercial fractionator prior to June 1982. Apart from its novelty, one could understand a reluctance on the part of the BTSB as a public service body, reliant on the altruism of voluntary donors to contemplate seeking assistance to achieve self-sufficiency from a commercial fractionator.

Scotland

The Tribunal also heard evidence of the possibility of co-operation between the BTSB and its equivalent body in Scotland – The Scottish National Blood Transfusion Service. The Tribunal was greatly assisted by the expert evidence of Dr. James Smith and Dr. Peter Foster in this regard. There had been considerable contact and co-operation between the BTSB and the SNBTS in developing the process for fractionating Factor IX concentrate which was used by the BTSB from 1972 onwards. In 1975 the SNBTS constructed the Protein Fractionation Centre at Edinburgh. This was a large scale purpose built Fractionation Centre, comparable in its scale and intensity to a commercial fractionation centre, designed to produce, amongst other things, Factor VIII and Factor IX concentrate,. From the outset it had a capacity to process more plasma than was collected in Scotland and to supply more concentrate than was necessary to meet Scotland's requirement. The Protein Fractionation Centre was anxious to utilise this surplus capacity to improve its economic efficiency. It had originally been intended that plasma collected in England would be sent to the Edinburgh Centre for fractionation. This did not in fact occur. From 1983 onwards plasma collected in Northern Ireland was fractionated in the Edinburgh centre. The evidence of Dr. Foster was, however, that the Plasma Fractionation Centre had surplus capacity at all stages from 1975 to 1985.

In a letter of 11 November 1975 to Dr. O'Riordan, Dr. Watt, then the Scientific Director of the Protein Fraction Centre, suggested that the BTSB might consider an arrangement whereby the BTSB would send their plasma to Edinburgh and the P.F.C. would fractionate the plasma and return all fractions to Dublin. There are no surviving records in either the BTSB or the P.F.C. in Edinburgh of any further correspondence concerning this suggestion. Dr. Smith stated in evidence, while he was not himself involved in any discussions which took place between the Edinburgh Centre and Dr. O'Riordan, his understanding was that there were some such discussions and that Dr. O'Riordan seemed more interested in the notion that the BTSB, having extracted cryoprecipitate and Factor IX from plasma, should then send the residue to the Edinburgh Centre for further processing to obtain other products. It seems clear that any such discussion remained at a very general and tentative level and never resulted in any concrete proposal. There is no record, during this period, of the BTSB ever again considering the possibility of sending plasma to the Edinburgh Centre for custom fractionation of Factor VIII and/or Factor IX.

In the Tribunal's view, the BTSB should at least have investigated the possibility of such an arrangement and their failure to do so represented a missed opportunity. The letter from Dr. Watt had referred expressly to the possibility of such an arrangement and had indicated a willingness in principal and indeed a desire to process Irish plasma to improve the economic efficiency of their centre. Whatever reluctance there might have been to sending plasma to a commercial fractionator would not have applied. The Scottish Blood Transfusion Service was, like the BTSB, a public service body entirely reliant on voluntary donors. There is some doubt as to whether the Edinburgh centre would have been willing to fractionate Irish plasma separately from Scottish plasma. It was

indicated in evidence that whereas it would have been possible to do so it would have involved more difficulty for the Edinburgh centre. Dr. Foster indicated that when plasma was sent from Northern Ireland to be fractionated in Edinburgh it was initially fractionated separately but subsequently the Northern Irish and Scottish plasma was pooled. Sending plasma to the P.F.C. would have given the BTSB access to expertise and a processing plant capable of producing Factor VIII concentrate. It would not in itself have solved the problem of collecting sufficient plasma to produce sufficient Factor VIII concentrate to meet the national requirement although the Edinburgh centre had in fact considerable expertise and success in maximising yield. An arrangement for the fractionation of the BTSB plasma in Edinburgh may not, therefore, have been straightforward to arrange and may not have provided a complete solution to self-sufficiency in Factor VIII concentrate. The Tribunal does, however, consider that it is a possibility which should have been explored by the BTSB perhaps in conjunction with its work on the Heparin project, and as one of a number of possible strategies for achieving self-sufficiency, and that it should have been revisited in or about the middle of 1982 by which stage the BTSB should have had serious doubts about the capacity of the Rock method to deliver self-sufficiency.

Factor IX

Factor IX concentrate was required for the treatment of persons with haemophilia B. There were much fewer persons with haemophilia B than persons with haemophilia A, both in this country and world wide. The total national requirement for Factor IX concentrate was, therefore, much less than for Factor VIII concentrate. The fractionating process to produce Factor IX concentrate appears to have been less complex than the process for producing Factor VIII concentrate. From 1972 onwards the BTSB produced Factor IX concentrate fractionated from Irish voluntary donors. This product was apparently comparable in clinical efficacy to commercial Factor IX. It was within the capacity of the BTSB to produce sufficient Factor IX to meet the national requirement. The records, however, show that from 1977 onwards increasing quantities of commercial Factor IX were imported and used *(see Appendix 11)*. The explanation for this surprising state of affairs offered by Professor Temperley was that the commercial Factor IX was supplied packaged in a form which made it suitable for home therapy – where infusion was carried out by the person with haemophilia himself or, in the case of a child, by a relative. BTSB Factor IX was not supplied with such home treatment kits. Indeed, it would seem from an entry in the NHSCC minutes of 11 May 1984 that even at that date the BTSB had not yet supplied such kits.

It seems extraordinary that the BTSB failed for so long to obtain and supply these home treatment packs. There was no evidence that there was any particular difficulty in doing so. Had they done so, self-sufficiency for the treatment of persons with Haemophilia B could apparently have been attained.

The Tribunal has already found as a matter of probability that no person with haemophilia B in this State was infected with HIV as a result of treatment with commercial concentrate. Neither the BTSB Factor IX concentrate nor the commercial Factor IX concentrate were at this stage subjected to any form of viral inactivation. It is now known that both would have carried a high risk of transmission of non-A non-B hepatitis. Unfortunately, a number of persons with haemophilia B were infected with non-A non-B hepatitis / hepatitis C. While these probably included persons who received commercial Factor IX for home treatment, the Tribunal does not believe as a matter of probability they would have avoided this infection had they been treated instead with BTSB Factor IX concentrate. While the Tribunal considers it appropriate to refer to these matters, they were not known to the BTSB at the time and do not, in the Tribunal's view, excuse the failure on the part of the BTSB to achieve self-sufficiency in Factor IX concentrate.

Self-sufficiency was a laudable policy. It was aimed at by virtually all European States but very few achieved it. It was promoted by the Council of Europe which provided a meeting place and forum for experts and a source of information and recommendations. However, the Council of Europe didn't have the executive power to ensure that self-sufficiency became a national policy for each member State. The reports and recommendations from the Council of Europe strongly advocated self-sufficiency but they contained less in the way of practical advice or information on how self-sufficiency might be attained. In that sense the recommendations of the Council of Europe were aspirational. Notwithstanding all the reports and recommendations promoting self-sufficiency, there was by June 1982 the ever growing reality in this country, as in most European countries, of an increasing demand for and reliance on imported commercial concentrates.

Part III

Division 1
Chapter 4

The BTSB: The Period from June 1982 to December 1986

Developing State of Knowledge of AIDS & HIV

HIV and AIDS are central to the Tribunal's examination of the work of the BTSB in the period June 1982 to December 1986. It seems appropriate at the outset to outline the development of scientific and medical knowledge about the condition of AIDS, the HIV virus and the risk of the transmission of the virus through blood products. The Tribunal was greatly assisted in this task by the evidence it heard from international experts. There seemed to be a considerable consensus amongst them on the essential elements in this developing state of knowledge. This consensus may have been facilitated by the considerable attention the topic has already received, both from the authors of published material and from bodies carrying out inquiries similar to this Tribunal.

Many of the experts stressed the elements of debate, doubt and confusion in this emerging state of knowledge and the difficulty of avoiding the distortion of hindsight in attempting to describe it. By the end of the period there was a general medical and scientific consensus that AIDS was a disease caused by the HIV virus which was transmissible through blood and blood products. The nature, cause, and means of transmission of the condition had all been matters of intense controversy with many different theories and explanations. The risk of hindsight is that by concentrating on information and developments consistent with the view which eventually prevailed to the exclusion of all other views advanced at the time, a distorted picture may emerge. The Tribunal is very much aware of this danger. It appreciates that the stream of knowledge did not, as it were, follow a straight and direct channel with a clearly visible course leading directly and inexorably from one point to another but rather meandered through many channels whose courses were difficult to discern, often doubling back or coming to a complete stop.

While keeping in mind this risk of distortion, it is nonetheless possible to identify the following landmarks in tracing the emerging knowledge:-

(1) An article in the *Mortality & Morbidity Weekly Report* (MMWR) of 5 June 1981 containing the first report of the condition which later became known as AIDS. The condition was reported in five homosexual men in Los Angeles, California, in the period October 1980 to May 1981.

(2) An Article in *MMWR* of the 16 July 1982 reporting the condition in three persons with haemophilia in the United States – the first report of the conditions in persons with haemophilia.

(3) A report in the *MMWR* of the 10 December 1982 of four or five further cases in persons with haemophilia and a suspected case in an infant caused by a transfusion from a donor who was subsequently diagnosed to have AIDS.

(4) An article by Ammann & Others published in the *Lancet* on the 30 April 1983 reporting the same infant case.

(5) An article by Montagnier & Others published in *Science Magazine* on the 20 May 1983 identifying a virus which appeared to be associated with the condition of AIDS.

(6) An article by Dr. Robert Gallo published in *Science Magazine* on 4 May 1984 identifying a virus as being causative of AIDS.

(7) Publication by the CDC in October 1984 of the results of research suggesting that the virus identified by Gallo could be inactivated in Factor VIII concentrate by the application of heat to the concentrate in its dried or lyophilised form.

When the condition, later called AIDS, was first identified in June 1981 there was much debate about its nature and perhaps even more as to its cause and means of transmission. The hypothesis that the condition was an infection caused by an infectious agent transmissible through blood or blood products was only one of a number of possibilities advanced. The report of the condition in three persons with haemophilia in July 1982 obviously provided support for that hypothesis but the situation remained very unclear. The editorial note in the MMWR of the 16 July 1982 contained the following comment:-

> "*The clinical and immunological features these three patients share are strikingly similar to those recently observed among certain individuals from the following groups: homosexual males, heterosexuals who abuse I.V. drugs and Haitians who recently entered the United States. Although the cause of the severe immune dysfunction is unknown, the occurrence among three haemophiliac cases suggests the possible transmission of an agent through blood products."*

The publication in December 1982 in the MMWR was also accompanied by editorial comment. The significance of the cases then reported was there described in the following terms:-

> "*The etiology of AIDS remains unknown but the reported occurrence among homosexual men, intravenous drug users and persons with haemophilia suggests it may be caused by an infectious agent transmitted sexually or through exposure to blood or blood products. If the infant illness described in this report is AIDS, its occurrence following receipt of blood products from a known AIDS case adds support to the infectious agent hypothesis.*"

The importance of the infant case lay firstly in the extreme un-likelihood of there being any coincidental source of infection and secondly in the fact that the donor of the transfusion had been identified as having AIDS. The combination of these two factors obviously provided significant support for the infectious agent hypothesis. The article by Ammann & Others in the *Lancet* in April 1983 published this information to a wider medical and scientific audience, especially in Europe, where the MMWR may not have been widely circulated in December 1982.

The Tribunal has formed a clear view from the expert evidence that a general awareness developed in the relevant scientific and medical communities in both America and Europe between January 1983 and June 1983 of a significant or substantial risk that AIDS was caused by an infectious agent transmissible by blood and blood products. This awareness was reflected in Recommendation No. R(83)8 adopted by the Committee of Ministers of the Council of Europe on the 23 June 1983 and the World Federation of Haemophilia Meeting at Stockholm in June 1983 referred to by a number of the experts.

It is important not to overstate the information which was available by the middle of 1983. Although the evidence in favour of the hypothesis of a transmissible infectious agent seemed to be growing, there was still uncertainty. Other hypotheses to explain the condition of AIDS continued to be advanced. The debate was not over. The infectious agent had not been identified. Although the then prognosis for any persons diagnosed with the condition of AIDS was appalling, involving progression towards a painful death, it was not known how widely the infectious agent was distributed in the population or whether exposure to it would lead inevitably to the development of the condition of AIDS.

In their May 1983 article Montaginier & Others did not claim to have identified a virus causative of AIDS. They called the virus they identified LAV and all they asserted for it was that it was found in association with the condition of AIDS. The breakthrough of the identification of a virus causative of AIDS came with the publication by Dr. Robert Gallo in May 1984. He called the virus he identified HTLV III. It seems that the virus identified by Gallo as HTLV III may in fact have been the same as that identified by Montaginier & Others as LAV. Within a relatively short time of the publication by Gallo a general, though not universal, consensus developed in the medical and scientific community that the condition of AIDS was caused by infection through a virus which came to be known as HIV and which was transmissible, amongst other ways, through blood and blood products. The identification of the HIV virus led to the development of tests capable of detecting HIV antibodies. The capacity which this gave to test donations of blood or plasma and recipients of blood or blood products, including persons with haemophilia, for evidence of exposure to HIV will be examined in other sections of the report. It also made possible the research on the application of heat as a means of inactivating the HIV virus in Factor VIII concentrate, the results of which were published by the CDC in October 1984.

Factor VIII and Factor IX were, apparently, regarded amongst fractionators as highly fragile and labile. There was, therefore, considerable initial resistance to the notion that heat should be applied to them in an effort to inactivate viruses. There was a fear that the application of heat would denature the protein and either interfere with its clinical effectiveness or, more seriously, increase the risk of the patient developing inhibitors. Work on heat treatment was initially carried out in an attempt to inactivate the hepatitis virus and in particular NANB hepatitis. The history of this work was well described for the Tribunal by the international experts and in particular Professor Mannucci, Dr. Prince, Dr. Snape and Dr. Foster. It seems that in the late-1970s and early 1980s research work was carried out on two different forms of heating – heating concentrate in solution, often in the presence of a stabiliser, before final lyophilisation and heating concentrate in its lyophilised or dried form. A German company, Behringwerke, fractionated a Factor VIII in 1982 which had been heat treated in solution in the presence of a stabiliser. However, their heat treatment resulted in an enormous loss of yield of concentrate and Professor Mannucci stated that the evidence which they produced at the time for its effectiveness in inactivating the hepatitis virus was unsatisfactory. It appears their method was not then generally considered practical for large-scale production of Factor VIII.

Work was also carried out on dry heat treatment – heat treatment of the concentrate in its final lyophilised form. Reference was made by some of the experts to the abstract of a paper describing

such a process at a meeting at Budapest in August 1982. The method seemed more promising than heating in solution in that it resulted in much less reduction in yield. Travenol developed a dry heat treated Factor VIII – "Hemofil T". Their method, as with all other methods of heat treatment at the time, was designed to prevent the transmission of hepatitis and particularly NANB hepatitis. There was considerable difficulty in ascertaining its effectiveness in doing so. The NANB hepatitis virus had not been identified and there was no specific means of testing for it or its anti-bodies. Persons with haemophilia who had received previous treatment might already have been exposed to NANB hepatitis, especially if the previous treatment had been with concentrate. Tests were carried out with the product on chimpanzees which suggested the method was effective in preventing the transmission of NANB hepatitis. The only truly effective test available at the time, however, was a clinical trial involving previously untreated patients. Professors Mannucci and Columbo organised such a trial of the Travenol product in Europe. The trial commenced in 1982. Unfortunately, within a relatively short time, some of the previously untreated patients, treated with "Hemofil T", showed clinical signs of hepatitis, identified to be NANB hepatitis. Although the results of the trial were not published in a formal paper until 1985, Professor Mannucci stated that he informed his colleagues of the failure of the Travenol dry heat treatment to prevent the transmission of NANB hepatitis at a meeting in Barcelona in September of 1983 and that this information would have been widely known in the relevant medical and scientific communities. Since the HIV virus had not then been identified, the effect, if any, upon it of dry heat treatment was also unknown. Professor Temperley's evidence was that the majority drew the inference that if dry heat treatment was ineffective to prevent the transmission of NANB hepatitis it would be unlikely to prevent the transmission of the unknown agent causative of AIDS.

The experts who gave evidence to the Tribunal were agreed that the publication by the CDC in October 1984 provided the first evidence that the HIV virus could be inactivated by dry heat treatment. The research work essentially involved spiking concentrate with the newly identified virus, subjecting the concentrate to dry heat treatment at various temperature and for various periods and then measuring the resulting reduction in virus. The results of this in vitro research, showing the HIV virus to be sensitive to heat inactivation, were considered highly significant by the CDC and were widely publicised, both formally and informally. There was not yet any clinical proof of the effectiveness of heat treatment against the transmission of the HIV virus but there was an immediate recommendation by MASAC that, "*Treaters using coagulation factor concentrate should strongly consider changing to heat treating products with the understanding that protection against AIDS is yet to be proved.*" The publication by the CDC did not end all debate on the matter. Doubts about the effectiveness of dry heat treatment as a means of viral inactivation of the HIV virus persisted. However, over the ensuing months evidence began to become available of its general effectiveness in clinical practice.

Professor Mannucci arranged with Dr. Montagnier for samples taken from the previously untreated patients who had been treated with "Hemofil T" in the clinical trial already described to be retrospectively tested for evidence of LAV/HTLV III antibody positivity. None were positive. Samples from a second group of patients, also previously untreated, who had been treated with equivalent amounts of non-heated commercial concentrates during the same period were also retrospectively tested. It was found that 5 out of 29 such patients were sero-positive. Professor Mannucci & Others published this information in the *Lancet* on 2 February 1985. This contributed to the developing confidence in the use of heat–treated commercial concentrates and the Tribunal is satisfied from the evidence that by June of 1985 there was a general consensus of both opinion and practice in favour of the use of heat treated concentrates as a means of reducing the risk of transmission of HIV.

Central Purchasing and Distribution Of Commercial Concentrates

The BTSB seemed to have shared in the general awareness, described in the preceding section, which developed in the first half of 1983 of a significant or substantial risk that AIDS was caused by an infectious agent transmissible by blood and blood products. The commendable speed with which the BTSB prepared and introduced an information leaflet for donors is described in Part IV, Chapter 1 of the report. It also seems clear that the BTSB were aware of the risk of transmission of AIDS by the commercial concentrates. Mr. Brian O'Mahony of the I.H.S. gave evidence to the Tribunal of a conversation with Mr. Sean Hanratty as a result of a chance encounter on the 10 May 1983. Mr. O'Mahony's recollection of the conversation was assisted by a note which he made at the time. While the conversation focused on the need for speeding up the development of a BTSB Factor VIII concentrate, the context for that discussion, expressly referred to, was the risk of transmission of AIDS by the commercial concentrates.

The minutes of an NHSCC meeting of 12 May 1983, two days later, contained the following record:-

> ***"Production of home products***
> *Mr. Hanratty reported that tests are continuing on the new home produced concentrate – the tests carried out, to date, have proved to be highly satisfactory. It was felt that the difficulties involved in home production were not insurmountable and that it would be desirable for the country to be self-contained in this area. This led to a discussion on Acquired Immune Deficiency disease (AIDS) which has been associated with the treatment of haemophiliacs. Publicised material on the subject was tabled by the Chairman, who advised that this matter was on the agenda for the next Council of Europe meeting which he will be attending. He believed that a recommendation for self-sufficiency will be made at this meeting and he will report back to the next meeting of the committee."*

AIDS was also expressly mentioned in the minutes of the meeting of the Board of the BTSB of 15 June 1983. Having referred to a report from Dr. O'Riordan on a recent Council of Europe meeting which he attended in Lisbon and to the preparation of the leaflet for donors, the minutes went on to record:-

> *"ND (i.e. National Director) again stressed the importance of making the BTSB self-sufficient in regard to the preparation of blood products for the treatment of haemophilia (Factors VIII and IX)".*

The recommendations adopted by the Committee of Ministers on the 23 June 1983 contained the following recommendations to governments of member states:-

> *"To take all necessary steps and measures with respect to the Acquired Immune Deficiency Syndrome and in particular:*
>
> - *To avoid wherever possible the use of coagulation factor products prepared from large plasma pools; this is especially important for those countries where self-sufficiency in the production of such products has not yet been achieved:*
> - *To inform attending physicians and selected recipients, such as haemophiliacs, of the potential health hazard of haemotherapy and the possibility of minimising those risks:*
> - *To provide all blood donors with information on the Acquired Immune Deficiency*

Syndrome so that those in risk groups will refrain from donating (an example of an information leaflet for donors is appended).

AIDS was again expressly mentioned in the minutes of the BTSB Board Meeting of Wednesday 20 July 1983. Having referred to the leaflet for donors, the minutes went on to record:-

> *"In respect of the current importation of a high purity concentrate Factor VIII for the treatment of haemophilia A, the ND indicated that there is an element of risk with its continuing use, but that the haemophiliacs currently wish to continue with its use for home as distinct from hospital therapy. It was also indicated that encouraging results had been achieved by the BTSB following the trial production, on a very small scale, of a concentrated product suitable for home therapy. It is hoped that in the future it may be possible to enter into large scale production to cater for the entire needs of this country. In this regard, the Council of Europe have recommended that 'each country should be self-sufficient'".*

Continued Importation and Distribution

The BTSB continued to import and distribute commercial concentrates. An issue obviously arises as to whether it was appropriate for them to do so. This is an area in which it is particularly difficult to avoid hindsight. In the light of what is now known of the havoc created in the haemophilia community by AIDS and the high risk of infection associated with commercial concentrates, it may seem inexplicable that the BTSB continued to import commercial concentrates. However, what seems obvious in the light of subsequent events and information may not then have been so. On this, as on all matters, the Tribunal is expressly required by its Terms of Reference, as by basic fairness, "*to have due regard to relevant medical and scientific opinion and practice prevailing at the relevant times*".

The Tribunal heard expert evidence of the state of international opinion and practice concerning the use of commercial concentrates in 1983 and 1984. This evidence will be referred to in more detail when examining the work of the treating doctors. It seems that opinion and practice varied, but the Tribunal could not detect in that evidence any general opinion in favour of abandoning or totally prohibiting the use of commercial concentrates in countries where they had an established usage or any general practice of doing so. Instead, the generally prevailing opinion and practice seems to have been to continue some usage of commercial concentrates, especially for those patients who had already been exposed to commercial concentrates and would require frequent treatment but to seek to avoid or reduce the use of commercial concentrates, especially for those patients who had not previously been exposed to them and who were not likely to require frequent treatment. In the light of this prevailing opinion and practice at the time, the Tribunal does not consider that the BTSB can properly be criticised for continuing to import and distribute commercial concentrates.

Communications with Treating Doctors and Persons with Haemophilia

Having regard to the prevailing international opinion and practice, the BTSB could have been expected to advocate to the treating doctors that they should avoid and restrict the use of commercial concentrates where possible. There seems to be very little surviving evidence they did so. The Tribunal again faces the difficulty that the two most relevant people in the BTSB, Dr. O'Riordan and Mr. Sean Hanratty, are dead. Professor Temperley stated that he may have had

some such discussions with Dr. O'Riordan or Mr. Hanratty but he has no recollection of them. The statement attributed to Dr. O'Riordan in the minutes of the 20 July 1983 "that the haemophiliacs currently wished to continue with its (i.e. commercial concentrates) use for home as distinct from hospital therapy" may have been made as a result of some contact between Dr. O'Riordan and either the Irish Haemophilia Society or, more likely, Professor Temperley but there is no specific record of any such contact. When Professor Temperley sent Dr. O'Riordan a draft of his written policy for treatment of persons with haemophilia in November 1983, he received no response.

The BTSB may have informally advocated avoiding and restricting the use of commercial concentrates where possible. The Tribunal considers it unlikely they did so in the considered, measured and comprehensive manner which the situation required. Had they done so, it is likely that there would have been some record of their doing so.

It was argued on behalf of the BTSB that it was not open to them to dictate to treating doctors what products should be used for the treatment of persons with haemophilia. It was suggested that the treating doctors and, in particular, the doctors in the National Haemophilia Treatment Centre would have been quick to resist any interference with their clinical independence. These arguments have some validity. It would, however, have been possible for the BTSB to advocate avoiding or limiting the use of commercial concentrates without compromising the clinical independence of treating doctors. As during the earlier period on the issue of communication of the risk of non-A non-B hepatitis, the Tribunal thinks it appropriate to distinguish between the National Haemophilia Treatment Centre and other hospitals providing treatment to persons with haemophilia. The BTSB might have taken the view that the National Haemophilia Treatment Centre had access to the relevant information and was capable of formulating its own policy. The same assumption could not properly have been made about consultant haematologists operating outside the National Haemophilia Treatment Centre, still less about treating doctors who were not haematologists. In the Tribunal's view the BTSB had a duty, both as distributor of the commercial concentrates and as a public service body responsible for blood and blood products to advocate to treating doctors, and particularly treating doctors operating outside the National Haemophilia Treatment Centre, to avoid or restrict the use of commercial concentrates where possible. It does not seem that they did so in any systematic way. The evidence heard by the Tribunal of the use of commercial concentrates by the regional centres and hospitals indicated a variety of practice. While there was evidence of the use of concentrates being avoided or restricted after 1984 there was no evidence that this occurred as a result of advice emanating from the BTSB.

In the Tribunal's view, the BTSB also had a duty, both as distributor of commercial concentrates and as supplier of the freeze dried cryoprecipitate and Factor IX which it produced itself, to inform both treating doctors and persons with haemophilia of the risk of transmission of AIDS. In 1983 the relevant information would have been the balance of risk as between commercial Factor VIII concentrate and the BTSB freeze dried cryo. The Tribunal could find no evidence that they did so in any systematic way. It is clear from the minute of the 12 May 1983 that Dr. O'Riordan provided information on AIDS to the NHSCC meeting of that date. It seems, however, from the minute that the discussion took place more in the context of the desirability of self-sufficiency than the relative risks of different treatment options. The Tribunal is also not overlooking the fact that Professor Temperley, at the request of the I.H.S., wrote a contribution for the I.H.S. newsletter on the risk of AIDS. This will be examined in more detail in Part V, Chapter 3. The BTSB may have been aware of that contribution by Professor Temperley. As on other issues, the Tribunal considers there was a greater onus on the BTSB to communicate the risk to doctors operating outside the National Haemophilia Treatment Centre and their patients. The responsibility of the BTSB in that regard may have been shared with the NHTC and the NHSCC.

Communications with Commercial Fractionators

There is no record of the BTSB having sought information from the commercial fractionators on their policy in respect of matters such as donor selection and donor screening in 1983. There is no reference to any such issues in the brief references to the discussions which took place in the autumn of 1983 to select the commercial concentrates for 1984. The BTSB had received unsolicited information from Travenol in what appears to have been a circular letter of the 9 May 1983. Professor Temperley received a similar circular letter from Armour dated 19 May 1983. It was addressed to all Haemophilia Centre directors. It is not clear whether a copy was sent to the BTSB. There is no record of the BTSB having received information on these topics from Cutter, the third commercial fractionator from whom product was obtained at this time. Cutter's policy on plasma collection was questioned by the NDAB. In the course of considering the Cutter application, the NDAB wrote to, amongst others, Dr. O'Riordan and Professor Temperley on the 4 May 1984 asking whether they would use product, "*knowing that the source was pooled plasma collected from many centres in the U.S.A., including New York, Miami and San Francisco*". Dr. O'Riordan apparently didn't reply to the letter. Professor Temperley did reply on the 9 May 1984 in the following terms:-

> "*I would be most unhappy about using FVIII concentrates whose original plasma was collected in New York, Miami and San Francisco. Armour, Travenol and Cutter have given me verbal guarantees that their collections are outside the areas associated with the acquired immune deficiency state. In view of the point made in your letter, it would be extremely helpful if NDAB were to receive a written guarantee from these firms that there verbal statements can be backed up.*"

If Professor Temperley sought and obtained verbal guarantees, the BTSB may also have done so or may have been informed by Professor Temperley of the guarantees he received. The Tribunal nonetheless feels it would have been appropriate for the BTSB to have sought such information from the companies concerned in writing. Since they did not do so, the likely reply must be a matter of speculation. However, from the information which these companies were making available at the time, it seems probable that the reply would have been in reassuring terms and would not have enabled the BTSB to differentiate between their concentrates in terms of the risk of transmission of AIDS.

One of the companies which had been supplying commercial concentrates was Immuno. That company supplied Factor VIII concentrate made from two different donor sources – American paid donors and European paid donors. Since AIDS was more prevalent in the U.S.A. than Europe, although not unknown in Europe, it might have been thought that the possibility of obtaining Immuno fractionated from paid European donors would have been considered in the autumn of 1983 when product for 1984 was being selected. There is no record that this occurred.

Heat Treatment

On 17 December 1984 Professor Temperley wrote to Dr. O'Riordan stating that he and Dr. Cotter, with the support of Dr. Walsh of the Department of Health, had agreed to purchase only heat treated Factor VIII and Factor IX concentrates from commercial firms in 1985 and that the BTSB were being asked to consider urgently the question of heat treating all BTSB products produced for the treatment of haemophiliacs. *(See Appendix 13.)*

There is no record of the BTSB having taken any initiative in respect of heat–treated commercial products prior to that date. The Tribunal finds this surprising. Having regard to the international

information opinion and practice concerning heat treatment already described, the Tribunal does not find it surprising or a matter for any adverse comment that the BTSB did not advocate the general use of heat treated commercial concentrate prior to the publication by the CDC in October 1984. The absence of any record of a reaction by the BTSB to the CDC publication or any initiative by them in respect of heat treated commercial products prior to receipt of the December letter from Professor Temperley is surprising and unacceptable. The circumstances leading up to Professor Temperley's letter included the diagnosis of AIDS in an Irish boy with haemophilia in November 1984, a meeting of U.K. Haemophilia Centre Directors in December 1984 attended by Professor Temperley and a meeting between Professor Temperley and Dr. Cotter and Dr. James Walsh of the Department of Health at which the BTSB were not present. Unheated commercial products were replaced with heated products with commendable speed, in the case of Factor VIII by January 1985 and in the case of Factor IX by February 1985. The BTSB, naturally, co-operated in the exercise but the full credit for the operation must go to the initiative of Professor Temperley and Dr. Cotter and the co-operation they received from the commercial fractionators.

It is also surprising that there is no record of the BTSB taking any detailed interest in or conducting any research or experiments of its own on heat treatment prior to December 1984. Although evidence for its effectiveness against the risk of transmission of HIV only became available in October of 1984, heat treatment had been the subject of discussion and research prior to that. It is not clear to the Tribunal why there is so little record of the BTSB taking an interest in heat treatment. The limited resources available to the BTSB for research may be part of the explanation. The fact that Dr. O'Riordan, for so long the driving force in the BTSB, was at the end of his career having served beyond the normal retirement age, may also have contributed. Whatever the explanation, the Tribunal is left with the impression that the BTSB may not have of itself developed a knowledge of or enthusiasm for heat treatment as a means of viral inactivation and that it may have simply acquiesced in the initiative taken by Professor Temperley and others in respect of commercial concentrates and have regarded the request that it should heat treat the products produced by itself as something imposed from outside.

Self-sufficiency

The Heparin Project

From June 1982 until December 1983/January 1984 the Heparin project continued to be the sole focus of efforts in the BTSB to achieve self-sufficiency in Factor VIII. There were positive and optimistic references to progress on the project in the minutes of the NHSCC, and to a lesser extent the Board of the BTSB during 1982 and 1983. As is clear from the conversation between Mr. Sean Hanratty and Mr. Brian O'Mahony and the minutes of the NHSCC and BTSB Board for May, June and July 1983 already referred to, the possibility of achieving self-sufficiency through the Heparin method was specifically relied upon by the BTSB as a response to the emerging knowledge of the risk of AIDS. That connection was also made in a draft letter prepared for submission to the Lancet in the names of Professor Temperley and Mr. Sean Hanratty in June 1983. The letter claimed to have achieved a yield of more than 60% of Factor VIII in the final product and referred to satisfactory results of clinical trials in four persons with haemophilia. The letter was never submitted for publication. Professor Temperley stated in evidence that he would have been aware that such a letter would have been regarded as being of particular significance at the time and that his recollection was that he didn't allow it to go forward for publication under his name because he wasn't entirely happy about the results of the clinical trials and also because he wasn't satisfied that he personally knew enough about the methodology to send the letter to the Lancet. Clinical trials of the efficacy of a Factor VIII concentrate would apparently have been concerned with two things, the rise in the level of Factor VIII brought about immediately after treatment and the period for which

that rise would have been maintained, referred to as the half-life. Professor Temperley stated in evidence that his general recollection, without having had any recent access to the results of the clinical trials, was that there was a problem with the half-life. When records of the results were subsequently found they confirmed Professor Temperley's recollection in that they showed the half-life of the Factor VIII concentrate produced by the Heparin method in some of the patients to have been less than expected and less than would be achieved by conventional commercial Factor VIII concentrates.

The optimistic references to the Heparin project continued to the end of 1983. The BTSB board minutes for the 8 December 1983 record:-

> "*The National Director advised that it was proposed to hold a meeting in February of 1984 with the National Haemophilia Co-ordinating Committee to discuss in detail the Board's proposals to produce Factor VIII by a new technique. At present fifteen patients are being treated with this new product and thus far the results are encouraging. If, at the end of this trial period, satisfactory results have been achieved, arrangement will then be made to discuss with the Department of Health the future of full-scale production of this product.*"

Custom Fractionation

The minutes of the board for the 18 January 1984 contain the following record:-

> "*ND (the National Director) advised that the possibility of fractionation of BTSB cryoprecipitate (Factor VIII), present stock 14,000 including 5,000 dried, by a Commercial Company is being pursued. In the event this would provide a more acceptable product for home therapy. It was indicated that the gene that produces Factor VIII has now been discovered. This major 'breakthrough' would permit production by artificial means but it is unlikely to be available for therapeutic trials for 3-5 years.*"

At the N.H.S.C.C. meeting of the 3 February 1984 Mr. Sean Hanratty also referred to the possibility of genetically engineered product becoming available in the future. He referred to work being done on developing a system to obtain sufficient plasma from the Irish donor population to produce Factor VIII and to the alternative possibilities that this could either be fractionated by the BTSB or by custom fractionation. In the minutes of the BTSB board of the 21 March 1984 there is a reference to plasma having been sent to Brussels for fractionation by Travenol on a trial basis and from this point on the efforts of the BTSB to achieve self-sufficiency focused on custom fractionation. During 1984 attention seems to have concentrated on planning a system of plasma collection. What was contemplated was a combination between obtaining plasma from whole blood donations and a programme of plasmapherisis. In January 1985 the BTSB received approval for the project from the Minister for Health and a decision was taken by the Board to proceed. A number of commercial companies were invited to submit proposals for custom fractionation. These proposals were considered by the BTSB and on 11 June 1985 Travenol was selected. A contract was entered into on the 1 July 1985, by which time a programme of plasmapherisis to collect plasma to be sent to Travenol for fractionation was in operation. The first consignment of plasma had been sent to Travenol before the Board Meeting of17th July 1985.

The Tribunal has already expressed the view that the BTSB probably ought to have realised, by not later than approximately June 1982, that the Rock method was unlikely to be capable of being used for large–scale production of Factor VIII concentrate, sufficient to meet the national requirement and that it was quite unrealistic and inappropriate that all efforts towards achieving self-sufficiency in Factor VIII concentrate production continued to focus on the Heparin project after June of 1982. It

was obviously all the more inappropriate for the Heparin project to have apparently remained the sole focus of efforts towards achieving self-sufficiency during 1983 in the light of the emerging information about the risk of AIDS. It is not entirely clear what caused the change of policy at the end of 1983 and beginning of 1984. It may have been simply as suggested in the minutes of the BTSB and the NHSCC that Dr. O'Riordan and Mr. Hanratty believed it was likely that genetically engineered product would be available in three to five years time, superseding plasma derived product and that the large scale investment in plant and equipment required to produce the national requirement of Factor VIII using the Rock method would, therefore, be wasted. It also seems likely, however, that the BTSB may finally have realised that there were problems associated with the Rock method and that it was unlikely they would be able to use it to provide for the national requirement of Factor VIII.

The Tribunal believes the decision taken in early 1984 to investigate the possibility of custom fractionation was appropriate. Indeed the Tribunal believes that the possibility of such an arrangement with Scotland ought to have been investigated during 1983 as part of the BTSB's response to the risk of AIDS. The possibility of custom fractionation with a commercial fractionator was still a novel idea in Europe in early 1984. It could have been investigated by the BTSB during 1983. Because of its novelty the Tribunal doesn't think that it can fairly conclude the BTSB should have done so. It is nonetheless noteworthy that the commercial fractionators appear to have been receptive to the idea and, in the BTSB minutes of January of 1984 containing the first record of a reference to custom fractionation with a commercial fractionator, there is no record of any debate or reservation being expressed at the notion of the BTSB, as a public service body co-operating with a commercial fractionator.

The Tribunal has examined the period from January 1984 until July 1985 to see whether the planning and implementation of custom fractionation was pursued with an appropriate degree of urgency during that period. The Tribunal does not underestimate the difficulties involved and, in particular, the difficulty of collecting sufficient plasma to meet the national requirement. It also appreciates that planning and implementing such a project would necessarily take some time. The Tribunal has formed an impression from the evidence that there was a difference in the degree of urgency with which the policy was pursued before and after November 1984. In that month the first Irish person with haemophilia was diagnosed to have the condition AIDS. He had been treated with commercial concentrates which were the probably source of his infection. From December 1984 to July 1985 the Tribunal considers the policy of custom fractionation was pursued and implemented with all reasonable speed. Progress seems to have been slower between January 1984 and November 1984. It was understandable that the diagnosis of AIDS in a person with haemophilia being treated with commercial concentrates should have given added impetus to the efforts to achieve self-sufficiency. By January of 1984, however, the incidence of AIDS among persons with haemophilia being treated with commercial concentrate in other countries should have made it clear that there was a high risk and indeed likelihood that at least some persons with haemophilia being treated with commercial concentrates in this country would develop AIDS. The Tribunal believes self-sufficiency through custom fractionation should have been pursued with greater urgency during 1984.

Factor IX

In the section dealing with self-sufficiency in the period to June 1982, the Tribunal has already referred to the failure of the BTSB to achieve self-sufficiency in Factor IX. The minutes of the NHSCC of the 11 May 1984 contain a reference to an order for "final packaging" of home kits being about to be placed. It is not clear whether home kits were made available by the BTSB at that time. Professor Temperley thought this did not occur until some considerable time later. It is clear from

the figures for Factor IX issues by the BTSB that a substantial quantity of commercial Factor IX was issued in 1984. As has also already been referred to, no person with haemophilia B in this country was apparently infected with HIV through treatment with commercial concentrate. This seems to have been due to a step in the fractionation process of the commercial Factor IX – Proplex – which fortuitously inactivated the HIV virus. This was not known to the BTSB at the time and does not excuse the failure on the part of the BTSB to achieve self-sufficiency in Factor IX concentrate.

Heat Treatment of BTSB Factor IX

Events in Ireland

On the 17 December 1984 Professor Temperley wrote to Dr. O'Riordan,

> "*Dr. P. Cotter and I with the support of Dr. Walsh of the Department of Health have agreed to purchase only heat treated coagulation Faction VIII and Factor IX concentrates from commercial firms in 1985. We have also agreed to ask you to urgently consider the question of heat treating all BTSB products produced for the treatment of haemophiliacs.*"

In a reply dated 2 January 1985 Dr. O'Riordan wrote to Professor Temperley,

> "*I wish to acknowledge receipt of your letter of the 17 December 1984 and to advise that the question of heat treatment of all products for the treatment of haemophiliacs is being given urgent attention by the Board.*"

(A copy of this letter can be found at Appendix 50.)

The only record of the issue being referred to at a BTSB board meeting at this time is the following entry in the minutes for the 16 January 1985:-

> "*At the outset the N.D. (National Director) provided the members with background information relating to the Department of Health requirements both in relation to the heat treatment of products (Factor VIII and IX) and the necessity for early attainment of self-sufficiency in regard to such products.*"

In December 1984 Ms. Cecily Cunningham carried out an experimental heat treatment of a small quantity of BTSB Factor IX. She also wrote to Dr. James Smith of the Plasma Fractionation Laboratory Oxford on 24 December 1984 seeking his advice about heat treating Factor IX. Ms. Cunningham made an undated, hand–written note of a telephone conversation with Dr. Smith. Both Ms. Cunningham and Dr. Smith think it probable that the telephone call took place shortly after Ms. Cunningham wrote to Dr. Smith and in effect contained his reply to her letter. It is clear from the note that heat treatment of Factor VIII, cryoprecipitate and Factor IX was discussed. In respect of Factor IX Ms. Cunningham noted,

> "*Factor IX*
> *Very dangerous, as worried about Thrombosis as AIDS*
> *Before dry heat Factor IX have dog infusions done.*"

The Factor IX which was produced at that time by the BTSB and in the United Kingdom at Elstree and Edinburgh contained a number of factors as well as Factor IX. Treatment with it was known to carry a risk of causing thrombosis and there were recorded incidences in the medical literature of

this complication having occurred. The Tribunal heard evidence from Dr. Smith of Oxford, Dr. Snape of Elstree and from Dr. Foster of Edinburgh. They explained their fear that the application of heat treatment to Factor IX would increase the risk of it causing thrombosis. The dog studies referred to were studies carried out jointly by Edinburgh and Oxford in which dogs were infused with heat–treated Factor IX and then observed for any signs of thrombosis.

On 17 January 1985 Professor Temperley wrote in the following terms to Dr. Scott, the Medical Director of the National Drugs Advisory Board:-

> "*During 1985 we are purchasing only two commercial heat treated Factor VIII concentrates from Cutter and Armour. We will be purchasing our usual quantity of cryoprecipitate from Pelican House and are assured this will be heat treated in about one month's time. We will be purchasing only heat treated Factor IX concentrate from Cutter and have been advised that Pelican House Factor IX concentrate will be shortly heat treated.*"

(See Appendix 41)

No written records survive of the assurances by the BTSB referred to in that letter. Professor Temperley stated in evidence that they must have been given in discussions between himself and a representative of the BTSB – most probably Dr. O'Riordan. The BTSB were never in fact able to heat treat their freeze–dried cryoprecipitate and did not commence heat treatment of their Factor IX intended for clinical use until August 1985. There is a remarkable absence of any surviving record of contact between the BTSB and the treating doctors from January to August 1985 on the question of when the BTSB would be able to heat treat Factor IX. There was correspondence between the BTSB and treating doctors on other topics and meetings, including NHSCC meetings, at which other topics were discussed but no recorded reference to this topic. Professor Temperley recalled in his evidence a debate which took place during the haemophilia session of the Federated Hospital/St. James Annual Conference held on 13 & 14 February 1985. He recalled a treating doctor expressing the view in decided terms that it couldn't be assumed that Irish plasma did not contain the HIV virus and a representative from the BTSB arguing forcibly that concentrate produced from Irish plasma without heat treatment posed less of a risk of HIV infection than imported heat–treated commercial concentrates. There is no record of, and Professor Temperley had no recollection of, any specific discussion at that conference or at the NHSCC meeting on the next day, the 15 February, of when the BTSB would be able to heat treat their Factor IX. Professor Temperley stated in evidence that he did have verbal discussions with the BTSB and that his recollection of those discussions was that initially he was given to understand heat treated BTSB Factor IX would be available by March 1985, then by April 1985 and finally, at the time he left to take sabbatical leave in May 1985, his understanding was that BTSB heat treated Factor IX would be available by September 1985.

The BTSB received a supply of heat–treated commercial Factor IX concentrate in February 1985. From that point onwards the BTSB was supplying both heat treated commercial Factor IX concentrate and its own unheated Factor IX concentrate.

On the 13 August 1985 a meeting took place between Dr. Helena Daly, Locum Director of the National Haemophilia Treatment Centre, and Dr. O'Riordan and Mr. Hanratty of the BTSB. There is no surviving record of the meeting by either Dr. O'Riordan or Mr. Hanratty. Dr. Helena Daly gave the Tribunal evidence of her recollection of the meeting. She was also able to refer to letters written by herself to Professor Temperley and to Dr. O'Riordan and Mr. Hanratty together with a letter from Professor Temperley to Dr. O'Riordan, all of which were written shortly after the meeting. Dr. Daly's evidence was that at the meeting on the 13 August she requested Dr. O'Riordan and Mr. Hanratty to heat treat BTSB freeze dried cryoprecipitate and Factor IX concentrate immediately. She was apparently informed that it was not technically possible to heat treat the freeze dried cryoprecipitate

and her evidence was that the BTSB appeared to be reluctant to accept the necessity to heat treat their Factor IX. After the meeting there was contact between Dr. Daly and Professor Temperley and between Dr. Daly and Mr. Hanratty by telephone. Dr. Daly, on Professor Temperley's instructions, informed the BTSB by letter that as and from 1 November 1985 Professor Temperley would use only heat treated product for persons with haemophilia and that he would not be prepared to use unheated BTSB Factor IX or cryoprecipitate after that date.

The BTSB did not reply to the correspondence from Dr. Daly or Professor Temperley. However, Mr. John Cann's diary contains an entry for the 14 August 1985 recording a decision to heat treat Factor IX. Ms. Cunningham was instructed in August 1985 by Mr. Hanratty to heat treat a batch of Factor IX. She did so and this batch of heat treated BTSB Factor IX was issued to St. James's Hospital on 4 October 1985. It was apparently intended that it should be supplied to patients in St. James's Hospital so that they could be observed for any unusual or adverse reaction to the heat treated product. The BTSB continued to issue non-heat treated Factor IX until December of 1985. From January of 1986 onwards all BTSB Factor IX issued by the BTSB was heat treated. The Tribunal has already found that two of the batches of non-heat treated BTSB Factor IX, issued during 1985, were the probable source of infection with HIV of seven persons with haemophilia B, namely batch no. 90633, issued from the 4 June 1985 to 23 July 1985, and batch no. 90753, issued from the 19 July 1985 to 28 October 1985.

The explanation suggested to the Tribunal on behalf of the BTSB for the delay in commencing heat treatment of BTSB Factor IX between December 1984 and August 1985 was that the BTSB was concerned about the risk of thrombogenicity and was following the course of events in the United Kingdom. It is, therefore, relevant for the Tribunal to examine what happened in the United Kingdom.

Events in the United Kingdom

The Tribunal heard very helpful evidence from Dr. Snape of the Blood Products Laboratory, Elstree, Dr. Smith of the Plasma Fractionation Laboratory, Oxford, Dr. Foster of the Protein Fractionation Centre, Edinburgh and from treating doctors, particularly Dr. Colvin and Professor Lee. From this evidence it is possible to form a clear picture of what occurred in the United Kingdom. Both Oxford and Edinburgh had carried out research on pasteurisation and dry heat treatment of concentrates commencing in approximately 1981. After evidence for the efficacy of dry heat treatment in inactivating the HIV virus was made available by the CDC in the autumn of 1984, they gave priority to developing a protocol for dry heat treatment of concentrates. The protocol they ultimately used was 80 degrees centigrade for 72 hours – a significantly higher heat than was being used by any of the commercial fractionators at the time. In the case of Factor VIII they initially used protocols involving heat treatment at a lower temperature and for a shorter period of time. In the case of Factor IX they used the protocol of 80 degrees centigrade for 72 hours from the outset. As already mentioned, they were concerned that heating the Factor IX complex might increase the risk of it having a thrombogenetic effect. They apparently detected some subtle changes in the Factor IX concentrate following heat treatment and to counteract the risk of thrombogenetic effect they added antithrombin III to the concentrate before the application of heat treatment. The Edinburgh and Elstree Centres apparently jointly took a decision not to issue heat treated Factor IX concentrate for general clinical use until after the product had been tested in experiments on dogs.

There was no significant usage of commercial Factor IX concentrate in the United Kingdom prior to January 1985. The requirement for treatment of persons with haemophilia B was met through products fractionated by Elstree and Edinburgh. Although the policies adopted by Elstree and Edinburgh during 1985 were essentially the same there were differences in detail. There were also differences in the policies adopted by the treating doctors in England and Wales and in Scotland.

England and Wales

Dr. Terence Snape gave evidence of the policies adopted by the Blood Products Laboratory at Elstree. He stated that they discontinued release of unheated batches of Factor IX early in the year of 1985 but that he would have expected to see unheated product still being used from stocks held in Haemophilia Treatment Centres until July 1985. He stated that the first BPL heat treated Factor IX was made available for clinical trials in July 1985 but did not become available for general issue until October 1985.

Dr. Snape did not specify the month when BPL discontinued releases of unheated batches of Factor IX. He stated they did so "early in the year" of 1985. Since he stated that he expected unheated BPL Factor IX to have continued to be used from stocks until July 1985, supply was obviously discontinued earlier than July. Professor Christine Lee was able to give precise evidence from the records of the Haemophilia Centre at the Royal Free Hospital London of what occurred at that Centre. The records showed that for the period January 1985 until the beginning of May unheated BPL Factor IX was used. From the beginning of May until the 17 July heated commercial Factor IX was used. From the 17 July onwards heated BPL Factor IX was used. Professor Lee stated that commercial heated treated Factor IX was used from the beginning of May until the 17 July because no more unheated BPL Factor IX was available after the beginning of May. It also seems that the issues of heated BPL Factor IX to the Royal Free Hospital from the 17 July 1985 onwards were part of the clinical trials referred to by Dr. Snape. It, therefore, seems BPL stopped issuing unheated Factor IX at the beginning of May 1985. Dr. Snape gave very clear evidence that from July, when he expected existing stocks in the centres of unheated BPL Factor IX to have been used up, until the general issue of heated BPL Factor IX in October 1985 there were, apart from the clinical trials, no issues of BPL Factor IX, whether heated or unheated. During that period he stated the treating doctors would have had to use commercial Factor IX. BPL did not recall unheated Factor IX until they had stocks of heated Factor IX available for general issue in October of 1985. A letter was sent to the Directors of the Treatment Centres on the 7 October 1985 instructing them to return any unheated BPL Factor IX to be replaced with heated BPL Factor IX. Dr. Snape also stated that BPL would have maintained good communication with the treating doctors throughout this process.

Treating doctors in England and Wales were faced with a difficult choice in the treatment of their haemophilia B patients at the beginning of 1985. They were accustomed to using BPL Factor IX, believed to be safer than commercially fractionated Factor IX. Since supplies of heat treated BPL Factor IX were not then available, they had to choose between continuing treatment with unheated BPL product or switching to heat treated commercial product. It seems that in the early part of the year the majority opted to continue using unheated BPL Factor IX. It also seems that as the year progressed the balance of opinion and practice shifted in favour of heated commercial concentrates. Two factors are likely to have contributed to this process. More evidence became available of the effectiveness of heat treatment in inactivating the HIV virus, increasing the confidence in heat treated commercial products. Evidence began to emerge of the infection of persons with haemophilia A and B in the United Kingdom who had been treated with unheated NHS Factor VIII and Factor IX. Letters from Dr. Craske to the U.K. Haemophilia Treatment Directors of the 13 July 1985 and a published letter from Drs. Bloom, Forbes & Rizza to the British Medical Journal of the 22 June 1985 both reflect and are likely to have contributed to this changing climate of opinion. Any remaining debate was presumably brought to an end by the decision of the BPL to stop issuing unheated Factor IX concentrate. The option of continuing to use unheated BPL Factor IX was thereafter no longer available in practice.

Scotland

Dr. Foster gave evidence of what occurred at the Protein Fractionation Centre Edinburgh. The course of events was similar to BPL, with whom they cooperated closely. The Edinburgh Centre ceased issuing unheated Factor IX in May 1985. The first issues of heated Factor IX were made available for clinical trials in July 1985. These were satisfactory and more general supplies were then made available firstly in the Edinburgh centre from the 12 August 1985 and then generally in Scotland and Northern Ireland from 1 October. As at BPL, unheated product was not recalled until October 1985 when general supplies of heated Factor IX were available. Dr. Foster explained that the Edinburgh Centre did not supply or distribute commercial concentrates and that they didn't recall unheated product in May 1985 in case a problem should occur with the supply of heated commercial concentrates, leaving the treaters with no product for treatment at all. It seems from Dr. Foster's evidence that there was a concerted decision by the Scottish treating doctors to switch to heat treated commercial Factor IX concentrate in or about April 1985 and that the Edinburgh centre would have been aware of this when they discontinued issuing unheated Scottish Factor IX in May 1985. It was also clear from Dr. Foster's evidence that the Edinburgh Centre maintained close communications with the treating doctors.

Did the BTSB Follow Events in the United Kingdom?

Can the policies adopted by the BTSB in respect of their Factor IX concentrates during 1985 be explained by reference to their having followed what occurred in the United Kingdom? There is no surviving written record of any contact between officials of the BTSB and either Oxford/Elstree or Edinburgh after the contact already referred to between Ms. Cunningham and Dr. Smith at the beginning of 1985. The Tribunal thinks it probable if Ms. Cunningham had any further relevant significant contact she would have noted it. Ms. Cunningham was not a policy maker. The decision as to whether and when to heat treat Factor IX was taken at a more senior level in the BTSB and communicated to her. When the decision was in fact taken to heat treat Factor IX in August 1985 it was communicated to Ms. Cunningham by Mr. Sean Hanratty. It seems the relevant policy makers within the BTSB would have been Dr. O'Riordan and Mr. Sean Hanratty. The Tribunal thinks it likely that if there had been significant contact between either Dr. O'Riordan or Mr. Hanratty and either Elstree or Edinburgh during 1985 there would be some reference to it in the surviving records. However, since both Dr. O'Riordan and Mr. Hanratty are dead the Tribunal, in fairness to the BTSB, has carefully considered the possibility that there was unrecorded contact between the BTSB and Edinburgh or Oxford/Elstree on this issue during 1985. The actions taken by the BTSB do not suggest that they followed the policies adopted in the United Kingdom. At the time of the meeting with Dr. Daly on 13 August the BTSB had taken no steps towards heat treating Factor IX apart from Ms. Cunningham continuing to heat small experimental quantities not intended for clinical use. They were still issuing unheated Factor IX. In the United Kingdom clinical trials had been carried out, all issues of non-heat treated Factor IX had stopped and stocks of heat treated Factor IX were being generated for general release in October. In Scotland issues of heat treated Factor IX commenced to the Edinburgh Centre on the 12 August. Dr. Daly has no recollection of Mr. Hanratty or Dr. O'Riordan having referred to events in the United Kingdom at the meeting on the 13 August. If the BTSB were following events in the United Kingdom, one would expect them to have said so either at the meeting or in response to the correspondence they received from Dr. Daly and Professor Temperley after the meeting. The decision to heat treat Factor IX was apparently taken on the 14 August, the day after the meeting with Dr. Daly, suggesting strongly it was prompted by Dr. Daly's intervention and not any contact with the United Kingdom. Ms. Cunningham described in her evidence the instructions she received from Mr. Hanratty in August 1985 on the process to be used in the heat treatment of Factor IX. There was no reference to adding antithrombin III, the step taken

by the U.K. fractionators specifically to deal with the risk of increased thrombogenicity through heat treatment. It may be that the addition of antithrombin III would not have been required for heat treatment at the lower temperatures used by the BTSB. However, If the BTSB had been following the work of the U.K. fractionators, Mr. Hanratty would surely have made some reference to the heat treatment protocol used in the United Kingdom and to the use of antithrombin III. It seems he referred to neither. The Tribunal believes the decision to heat treat Factor IX was probably taken in response to Dr. Daly's intervention.

Ms. Cunningham undoubtedly contacted Dr. Smith in December 1984 and/or January 1985. The BTSB became aware through that contact of the concern of the United Kingdom fractionators that heat treatment of Factor IX complex might increase the risk of thrombogenicity. The Tribunal does not think it probable any significant contact took place between the BTSB and either Edinburgh or Oxford/ Elstree on this issue after January 1985. If there was any such contact, the BTSB did not model their policies on those adopted in the United Kingdom. In the light of Ms. Cunningham's contact with Smith in December 1984/January 1985, it was reasonable for the BTSB not to commence heat treating their Factor IX immediately. Having regard to the much greater research and development resources available to the U.K. fractionators, it would have been reasonable for the BTSB to maintain close contact with the U.K. fractionators and to seek to benefit from their work. To achieve this it might have been appropriate for the BTSB's schedule to have followed slightly behind the U.K. For instance, it might have been appropriate for the BTSB not to commence clinical trials of heat treated BTSB Factor IX until at least the initial results from clinical trials in the U.K. were known. In June 1985 no evidence had emerged that any person in this country had been infected with HIV as a result of being treated with blood or blood products from Irish donors. There was not, therefore, the same direct evidence of the risk of using unheat treated indigenous blood products for the treatment of persons with haemophilia as existed in the United Kingdom. This could not be a reason for believing that the Irish blood supply was immune from the risk of transmission of HIV. There was no rational basis for such a belief. It might, however, be an explanation and justification for a short delay on the part of the BTSB in assimilating and reacting to the change of opinion and practice in the United Kingdom in favour of heat treated commercial concentrates.

What Should Have Occurred?

The Tribunal has come to the view that if the BTSB had maintained proper contact with events in the United Kingdom they should, by the beginning of August 1985, have had a sufficient quantity of BTSB Factor IX heat treated to enable clinical trials to commence and they should also have ceased by that date issuing non-heat treated BTSB Factor IX. It is clear they had taken neither of these steps. It seems unlikely the BTSB were in contact with the U.K. fractionators at the time of their meeting with Dr. Daly on 13 August. If they were not, they should have contacted the U.K. fractionators as part of their response to that meeting and to obtain the benefit of their advice on how to proceed. If the BTSB had contacted either Edinburgh or Oxford/Elstree in or about the 13 August they would have discovered that no issues of unheat treated Factor IX had been released in the United Kingdom since May. The Tribunal, therefore, believes that, had the BTSB responded appropriately to Dr. Daly's intervention on the 13 August, they would not only have immediately commenced heat–treated Factor IX, as they did, they would also have ceased issuing unheated BTSB Factor IX and have advised treating doctors to use heated commercial Factor IX until heated BTSB Factor IX became available. The Tribunal believes such a response was required from the BTSB whether by reference to the policies adopted in the United Kingdom or by reference to the more general information then available as to the risk of using unheated concentrated and the effectiveness of heat treatment in inactivating the HIV virus

The Tribunal also believes the BTSB should have recalled its unheated Factor IX and offered to replace it with heat treated commercial Factor IX, either on its own initiative by the beginning of August 1985, or in response to Dr. Daly's intervention on the 13 August. In coming to this view the Tribunal is not overlooking the fact that neither Edinburgh nor Elstree recalled their unheated Factor IX until they were in a position to supply their own heat treated Factor IX for general use. Their reason for not doing so as explained by Dr. Snape and Dr. Foster was a fear the treating doctors might not have able to obtain supplies of commercial Factor IX concentrate and might, therefore, have been left without any product. This difficulty did not apply in the case of the BTSB. In its capacity as central distributor of commercial concentrates it was in a position to know what supplies of heat treated commercial Factor IX were available. The evidence was that the BTSB had available to it, by the beginning of August 1985, sufficient supplies of commercial heat treated Factor IX to meet the requirements of persons with haemophilia B in this country. There would, therefore, have been no difficulty in the BTSB recalling unheated BTSB Factor IX and replacing it with heat treated commercial product.

In October 1985 the BTSB started supplying heat–treated Factor IX concentrate to St. James's Hospital. They continued to issue unheated Factor IX until the end of December 1985. This was clearly inappropriate and was accepted to be so by Counsel for the BTSB in his closing submissions to the Tribunal.

The BTSB commenced testing individual donations of blood for HTLV III antibodies in October 1985. Within two weeks of the commencement of testing a regular donor to the anti-D programme was found to be HTLV III antibody positive. A number of other donors were also found to be positive within a short time of the commencement of testing. This confirmation that the Irish blood supply was exposed to the risk of contamination with the HIV virus was a further matter which should have prompted the BTSB to cease issuing unheated Factor IX which would, of course, have been made from donations of blood or plasma received before the introduction of testing of individual donations for HTLV III antibodies in October 1985.

The discovery of anti-HTLV III positive donors should also have prompted a recall of unheated BTSB Factor IX. This was not done. There was a recall of the batches of anti-D to which it was believed the positive donor had contributed. Since it had been established that there were potential donors in October 1985 who were HTLV III antibody positive there was a clear and obvious risk that some of the donations which had been used to produce BTSB Factor IX would also have been from positive donors. The BTSB, however, took no step to withdraw its unheated Factor IX between October and December 1985.

The Notice of 30 January 1986

The BTSB did issue a notice to the Medical Officer in charge of each hospital blood bank regarding the then status of blood products on 30 January 1986. The Tribunal heard a considerable amount of evidence of the events preceding the issuing of this notice, the most significant being from Dr. Terence Walsh, Professor Ernest Egan, Dr. James Walsh, Dr. Barry and Ms. Cecily Cunningham. Based on the evidence which was heard, the Tribunal believes that what occurred was as follows.

On or about the 6 or 7 January 1986 Professor Ernest Egan became aware that one of his patients, "Fionn", a patient with haemophilia A, had been found to be HIV–antibody positive. He had been treated with BTSB cryoprecipitate, as were all Professor Egan's haemophilia A patients. Professor Egan had no knowledge that he had been treated with any other product. It would, therefore, have been apparent to Professor Egan that the most likely source of his infection was BTSB cryoprecipitate. Professor Egan stated in evidence that the relevance of the fact that "Fionn" had

only received cryoprecipitate as the sole potential source of his HIV infection may not have sunk in or been apparent to him at that time and that he may not have been aware of its critical significance. Professor Egan also administered a dose of 1,700 units of BTSB Factor IX to a haemophilia B patient in Galway Regional Hospital on the 12 January 1986. These units were from batch no. 90753, a non-heated batch of BTSB Factor IX.

On the 14 January 1986 Professor Egan wrote to Dr. Terence Walsh, referring to conversations and discussion on Monday 13 January and seeking to have non-screened cryoprecipitate replaced by screened cryoprecipitate; that commercial Factor VIII would be available for treating his patients with haemophilia A and seeking to have the Galway stock of Factor IX concentrate, if not heat treated, replaced by heat–treated material. He also sought replacement of non-screened fresh frozen plasma and dried plasma with screened stock. The letter said that Ms. Kearney from the blood bank in the Regional Hospital would be in contact with the BTSB and stated that it was timely the BTSB should issue some guide-lines around the country. *(See copy of this letter at Appendix 14.)*

Neither Professor Egan nor Dr. Walsh had any positive recollection of the telephone conversation referred to in Professor Egan's letter. Professor Egan stated in evidence that he believed he would have discussed the seroconversion of "Fionn" and informed Dr. Walsh he was being treated with cryoprecipitate. Dr. Walsh stated that he had no recollection of Professor Egan referring to a specific case or to infection with cryoprecipitate and did not believe he had done so. Dr. Walsh stated it was possible that Professor Egan might have referred in passing to a case he was worried about but that he didn't heighten it in terms of saying it was due to cryoprecipitate. It seems clear from Professor Egan's letter of the 14 January that he was concerned about a number of issues relating to blood products and that the conversation between himself and Dr. Walsh ranged over those issues. There is no specific reference in Professor Egan's letter to the seroconversion of "Fionn". The letter does specifically and pointedly refer to the conversation of the previous day. The Tribunal believes the seroconversion of "Fionn" was probably one of a number of matters which prompted Professor Egan's telephone call to Dr. Walsh. The Tribunal believes it to be probable that Professor Egan did inform Dr. Walsh in the course of the phone call that one of his patients had seroconverted and that he was being treated with BTSB cryoprecipitate. It seems clear that Professor Egan was concerned about the continued use of non-heated and non-screened product including cryoprecipitate and Factor IX. One of the probable reasons for that concern was the seroconversion of "Fionn". It seems to the Tribunal to be inconceivable that he would not have referred to the seroconversion during his phone call with Dr. Walsh and improbable that he would not have mentioned that he was being treated with cryoprecipitate.

Ms. Kearney contacted the BTSB on or about the 16 January 1986 and spoke to Ms. Cunningham. She indicated that Galway Regional Hospital had on hand five vials of BTSB Factor IX from batch no. 90716 and 40 vials from batch no. 90753. The purpose of her inquiry would appear to have been to find out whether such stock was heat treated. Ms. Cunningham in her note of the conversation recorded that neither batch was heat treated and both had been issued before testing. The Tribunal is satisfied that she brought the query to the attention of Dr. Terence Walsh and Mr. Sean Hanratty who indicated that she should carry out a HTLV III antibody test on a sample from batch no. 90753. Ms. Cunningham did so and the result was negative. It is now clear from the expert evidence and, in particular, that of Professor Leikola and Professor Van Aken that such a test would not be a satisfactory method of ascertaining whether the product was free from infection.

Dr Terence Walsh replied to Professor Egan by letter dated the 15 January, 1986. He asked him to indicate the amount of Cryoprecipitate which he would require for 1986; and told him that commercial Factor VIII could be obtained directly from the manufacturers or, dependant on supply and demand, from Pelican House, which would be heat treated and prepared from Irish plasma. He

said that it was hoped that heat-treated Factor IX prepared in Pelican House would shortly be available. He also pointed out that Travenol Factor IX issued since January 1985 had been heat-treated. Finally, he confirmed that all donations had been tested for HTLV III antibodies since mid October 1985 and asked Professor Egan to check how much material he had which predated that time. *(See copy of this letter at Appendix 15).*

A meeting took place between the Consultants in the BTSB and Dr James Walsh and Dr Buttimer of the Department of Health on the 21 January 1986. This meeting would appear to have been called to discuss the question of a possible withdrawal of stock and the Tribunal is of the opinion that the main concern of at least the Department representatives may well have been the continued use of product made from non-screened donations. The Tribunal is of the opinion that it is unlikely that the discovery of the recent seroconversion was mentioned at that meeting with the doctors from the Department.

On the following day the 22 of January 1986 an internal meeting of officials in the BTSB took place which was attended by Dr Barry, Dr Wilkinson, Dr Terence Walsh, Mr Cann, Mr Hanratty and Mr Keating. A decision was taken that certain products should be withdrawn and it would appear that a draft letter had been prepared by Dr Terence Walsh. Having regard to the hand written note of what occurred at that meeting it would appear that BTSB Factor IX was discussed. It was realised that some non-heat treated BTSB Factor IX was still being issued; it was decided that the issue of such products should stop; that only heat treated products should be issued and that if necessary commercial product should be used. The note records that there was also discussion about BTSB Factor IX stock already in the hospitals and that Dr Terence Walsh's letter covered this. *(See copy of the note of meeting at Appendix 16).*

On the 22 January 1986 Dr Barry wrote to Mr Flanagan the Secretary of the Department of Health to the effect that Dr James Walsh of the Department had recommended, and the BTSB consultants had agreed, that certain blood products such as Cryoprecipitate, fresh frozen plasma and dried plasma, issued prior to the introduction of donor screening, should be withdrawn from hospitals. The letter went on to say that hospitals would require replacement stocks of tested material and this would have significant financial implications. He said that the Board was seeking approval for this course of action and would expect financial compensation from the Department. *(See copy of the letter of the 22 January 1986 at Appendix 17)*. Mr Flanagan replied by letter dated the 28 January, 1986 to the effect that it was imperative that all blood products issued to hospitals prior to the introduction of HTLV III antibody testing which were still held in stock should now be withdrawn and accordingly steps should be taken by the BTSB to do so immediately. *(See copy of the letter of the 28 January 1986 at Appendix 18).*

On the 30 January 1986 Dr Terence Walsh issued a letter to the medical officer in charge of each hospital blood bank enclosing a notice regarding the then status of blood products and HTLV III antibody testing. The notice dealt mainly with the question of HTLV III antibody testing and the status of particular products in relation to such testing. It sought the return of certain products for example all Cryoprecipitate issued prior to January 1986. The final paragraph of the notice dealt with Factor VIII and Factor IX concentrates and it was in the following terms:

> ***"Factor VIII and Factor IX concentrates** – all commercial Factor VIII now issued is heat treated. Non-heat treated material should be returned to the manufacturer. Heat-treated commercial Factor IX concentrate is now available. It is hoped that heat treated Factor IX prepared by the BTSB will shortly be available."*

(See copy of the letter of the 30 January 1986 and accompanying notice at Appendix 19.)

The notice does not in terms seek a return of any unused non-heated BTSB Factor IX which was still held in stock by hospitals nor does it explicitly say that only heat treated Factor VIII and Factor IX should be used. The Tribunal can see no justification for its failure to do so. While the notice dealt with a variety of products made from blood collected before the introduction of HIV antibody testing of individual donations, it did address the question of BTSB Factor IX and it is clear from the note of the BTSB meeting of the 22 January that the BTSB officials present specifically directed their minds to the question of stock of unheated BTSB Factor IX already in the hospitals. Dr. Terence Walsh stated in evidence that the notice of the 30 January was never intended to effect a withdrawal of such stock. The Tribunal has already stated its view that a withdrawal of unheated Factor IX should have taken place by August of 1985. Since this did not occur, the Tribunal is satisfied that the withdrawal notice on the 30 January 1986 should have contained an explicit and clear instruction to hospitals to only use heat treated Factor VIII and Factor IX products from then on and also a clear and explicit instruction to return any non-heat treated BTSB Factor IX which was held in stock. The relevant officials in the BTSB who were involved in the drafting and the issue of the notice should have ensured this was done.

The Tribunal has come to this view for a number of reasons. By the beginning of 1986 the Tribunal believes there was a clear consensus of medical opinion both internationally and in Ireland that the continued use of non-heated unscreened product was unacceptable. The risk of contamination of the Irish blood supply with HIV should have been apparent from the discovery of HIV antibody positive donors in October 1985. If, as the Tribunal believes probably was the case, the BTSB were informed through Dr. Terence Walsh of the infection of "Fionn" with cryoprecipitate, they had further evidence of the risk. As and from the beginning of January 1986 the BTSB was issuing only heat treated BTSB Factor IX and the Tribunal cannot see any good reason why it could not have required the return of unheated product so that heat treatment could be carried out. It is clear from the note of the meeting of the 22 January that supplies of commercial heat–treated Factor IX were available if the BTSB did not have sufficient supplies of heat treated BTSB Factor IX.

There seems to have been confusion within the BTSB itself in regard to the purpose and effect of the notice of the 30 January 1986. The minutes of the management meeting held on the 25 March 1986 referred to a reduction in sales arising from the return of non-heated product even though what was sought in the notice was the return of certain products made from non-tested donations. Likewise, in the minutes of the BTSB board meeting of the 26 March 1986 there is a reference to "*products not heat treated, following directions by the Minister, have been withdrawn*". Again this would appear to show confusion between products made from non-tested donations and products which had not been heat treated.

The Tribunal has already found that two batches of non-heat treated BTSB Factor IX were the probable source of infection with HIV of seven persons with haemophilia B, batch no. 90633, issued from the 4 June 1985 to 23 July 1985 and batch no. 90753 issued from the 19 July 1985 to 28 October 1985. The evidence which has enabled the Tribunal to do so was not available to the BTSB in 1985. At the time they had no more reason to suspect those two particular batches of Factor IX to be infective than any other batches of unheat treated Factor IX. The Tribunal has considered the steps which ought to have been taken by the BTSB by reference to information available to the BTSB in 1985 and the then prevailing medical and scientific opinion and practice and without specific reference to the probable dates of infection of the seven persons with haemophilia B. Having done so, it may be relevant to refer to the probable consequences had the BTSB taken such steps. In this context the Tribunal has considered carefully the detailed evidence supplied to it by Dr. Emer Lawlor and others about the treatment received and the anti-HTLV III testing of the seven persons with haemophilia B who were infected. The Tribunal has formed the view that had the BTSB ceased issuing and recalled unheat treated Factor IX by the beginning of August 1985 it is probable that most, though not all, of the seven persons would have avoided

infection. Had the BTSB done so at the beginning of October 1985 there was still a prospect that some of the patients may have avoided infection although it seems probable that the majority were already infected by that date. The Tribunal believes it probable that all but one of the patients were infected before January 1986 and that patient received his final relevant treatment of BTSB product on the 20 February 1986. It seems, therefore, that any action taken by the BTSB in January of 1986 could only have affected that patient and no action taken by the BTSB after the 20 February 1986 had any relevance to the infection of even that patient.

Response to Seroconversions of Persons with Haemophilia B

On 22 April 1986 Professor Temperley wrote to Dr. Terence Walsh:-

> "*I am becoming very concerned about positive tests for HTLV-III antibody occurring in our patients with haemophilia B. These positive tests have been noted since the Pharmaceutical companies and the Blood Transfusion Service Board agreed to provide only heat treated product. I would suggest that urgent attention should be given to the problem and I would be happy to meet with appropriate representatives.*
>
> *It must be appreciated that it will be necessary to stop treatment from any supplier who may be supplying infected products.*"

Dr. Walsh did not reply in writing. In or about the same month, April 1986, Dr. Walsh completed a Council of Europe questionnaire in which he recorded four persons with haemophilia B to be HTLV III antibody positive. Dr. Walsh's evidence was that he would have obtained that information, together with other information for the questionnaire from a conversation with Professor Temperley. There is a record in Mr. Cann's diary which suggests Professor Temperley probably called to the BTSB on the 28 April 1986. Professor Temperley and Dr. Walsh think it likely they then discussed the letter of the 22 April. Professor Temperley's letter does not identify unheat treated BTSB Factor IX as the likely source of infection. Indeed, it seems to point more towards heat treated product, whether supplied by the pharmaceutical companies or the BTSB. It seems Professor Temperley expressed the same concern that the seroconversions were being caused by heat treated product in his conversation with Dr. Walsh. It also seems he indicated to Dr. Walsh that he was carrying out investigations to establish what products had been used to treat the patients who had seroconverted.

Professor Temperley gave public expression to his concern at the haemophilia B seroconversions at a Scientific Meeting at UCD in June 1986. A report of the meeting in the *Irish Times* of the 9 June 1986 by Dr. David Nolan, Medical Correspondent, commenced with the sentence, "*Native Irish human blood products used in the treatment of certain cases of haemophilia may still carry the virus which causes AIDS, a leading haematologist has warned.*" Professor Temperley was reported to have stated that four patients with haemophilia B who had negative HTLV III antibody tests in the previous year had converted to positive since January. The report then continued:-

> "*He emphasised that there was no proof that these four patients had been exposed to the virus through the administration of native Factor IX. They had also received commercial blood concentrates in their treatment but it was very worrying, he said, that the native Factor IX might have been the cause of their seroconversion.*"

It was obviously significant that Professor Temperley expressed his concern publicly. However, his reported contribution to the meeting did not advance upon the information he had already made available to Dr. Walsh. He did not identify the product likely to have caused the seroconversion, whether commercial or BTSB, and if BTSB, whether heated or unheated.

A meeting of the BTSB Board took place on the 18 June 1986, ten days after the *Irish Times* report. Paragraph 9 of the minutes is headed "Production of Factor VIII". Having referred to a number of matters relevant to the agreement with Travenol for custom fractionation of Factor VIII, the minutes went on to record:-

> "*The Executive Consultant informed the Board that the situation with Factor IX was unsatisfactory and that he was examining this as a matter of urgency, and that he requested that one of our Consultants meet Professor Temperley to review standards. The Board expressed its serious concern on the position and asked to be advised at the next Board meeting about progress to resolve these problems.*"

Mr. Ted Keyes, the Executive Consultant, gave evidence to the Tribunal. He stated that the "unsatisfactory" situation with Factor IX referred to in that extract from the minutes was the seroconversions among patients with haemophilia B referred to by Professor Temperley. Mr. Keyes said he would have been aware of Professor Temperley's letter of the 22 April. He had no recollection, however, of having seen the *Irish Times* report of the 9 June.

Dr. Walsh met Professor Temperley on Wednesday 25 June. Dr. Walsh made a record of the meeting in a memorandum of the same date which he sent to Dr. Barry, Chief Medical Consultant, and Mr. Keyes. The memorandum noted that there were now five and possibly six haemophilia B patients with HTLV III antibodies. The memo then went on:-

> "*From the clinical evidence shown to me by Professor Temperley, there is a very strong possibility that these antibodies developed from a batch, or batches, of Pelican House material. It would appear that the material used was non-heat treated. However, in the most recent case of antibody development, this needs to be confirmed and Professor Temperley is investigating the matter.*
>
> *Professor Temperley and I agreed that non-heat treated Factor IX should not be used. I am issuing a circular to hospitals today to advise return of any non-treated material that may still be in circulation.*
>
> *With regard to the future, Professor Temperley has indicated that he will use heat treated material already prepared. However, it is his wish, and I concur, that any future batches of Factor IX prepared should not only be heat treated but also be prepared from donations accepted following introduction of HTLV III screening of donors.*"

(See Appendix 20 for a copy of the Memorandum.)

Through this meeting Professor Temperley made available to the BTSB for the first time clinical evidence indicating a "*very strong possibility*" that the seroconversions among haemophilia B patients were caused by BTSB Factor IX and, more specifically, non-heat treated BTSB Factor IX, although this needed to be confirmed in the most recent seroconversion. An obvious priority was to ensure that no further unheated BTSB Factor IX was used. A circular was sent by Dr. Walsh to medical officers in charge of hospital blood banks on the same day, 25 June. He advised that only heat treated Factor IX should be used for the treatment of Haemophilia B patients and that "any non-heat treated Factor IX concentrate produced by the BTSB should be returned to Pelican House". *(A copy of the circular is at Appendix 21.)*

Although the principal focus was on non-heat treated BTSB Factor IX, it is clear from Dr. Walsh's

memorandum that Professor Temperley also expressed continuing concern about heat treated BTSB Factor IX. He had not yet confirmed that the latest seroconversion was caused by non-heated product, he required that all future BTSB Factor IX should not only be heat treated but also prepared from donations which had been individually tested for HTLV III antibodies. Professor Temperley, in his evidence, accepted the memorandum as being a generally accurate account of his discussions with Dr. Walsh. The only matter which puzzled him was the suggestion that he would be prepared to use BTSB Factor IX which had already been prepared from donations accepted prior to the introduction of anti-HTLV III testing provided it was heat treated. Professor Temperley didn't think this represented his thinking at the time. In the event he didn't agree to use such product.

Mr. Keyes set up a committee to deal with Factor IX consisting of himself, Dr. Barry, Dr. Terence Walsh, Mr. Cann, Mr. Hanratty and Ms. Cunningham. The committee, apart from Dr. Walsh who was away on holidays, met on 1 July 1986. Mr. Keyes prepared a memorandum of that meeting. It seems the meeting considered the general question of how Factor IX was to be produced in the context of the custom fractionation agreement with Travenol, whether it was to be fractionated by the BTSB from material returned by Travenol or to be fractionated by Travenol. A decision was also taken at the meeting to increase the heat treatment applied by the BTSB to Factor IX from their existing protocol of 60 degrees centigrade for 20 hours to 60 degrees centigrade for 72 hours. The memo made no direct reference to BTSB product having caused seroconversions to haemophilia B patients yet did note, "In a discussion with Dr. T. Walsh, Professor Temperley had agreed to use our existing stock of Factor IX which had been heat treated." The memo also stated that one of the purposes of the committee was to:-

> "*consult with Professor I. Temperley and other appropriate consultants and officers of Department of Health, particularly Dr. Jimmy Walsh, to ensure that our policies are in line with theirs.*"

The next meeting of the Board of the BTSB occurred on the 16 July 1986. One would expect the minutes to contain a record of what transpired at the meeting between Professor Temperley and Dr. Walsh on 25 June 1986 having been brought to the attention of the members of the Board and discussed by them. The minutes contain no such record. The only reference to Factor IX is the following paragraph, noted under the heading, "Report of the Executive Consultant":-

> ***"Factor IX**: The manufacture of Factor IX from plasma sent to Travenol is being explored and evaluated. The present stage of evaluation is due to be completed by 1/8/1986. A decision has been taken to heat treat existing stocks (about £37,000 value) in 60 degrees of heat for 72 hours. We will probably lose about 10 per cent of our stocks as a result of this decision.*"

The next monthly meeting of the Board occurred on the 20 August 1986. In the minutes of this meeting the only references to Factor IX are contained in a section headed Finance. Mr. Keyes is noted to have explained to the Board that it would be difficult to achieve a break-even situation by the end of the year because of increased wage costs and "*because of the fact our Factor IX programme was in abeyance pending a complete reappraisal of the entire programme.*" After noting a number of decisions designed to achieve a break-even situation, the minutes went on to record:-

> "*Board members were concerned about the Factor IX programme and asked that they be advised, if possible, at the next meeting on what action is proposed in relation to this area.*"

On the 26 August 1986 Professor Temperley wrote to Dr. Walsh in the following terms:-

> "*As you are aware, I have come to the conclusion that patients with severe haemophilia B may have HIV-antibody seroconverted due to BTSB FIX concentrate. I thought that I should*

put the evidence before you as representing the BTSB so that you will be in a position to assess the information available to me."

The letter went on to refer to six patients with haemophilia B who had been found to be HIV antibody positive. It appended particulars of their HIV antibody tests and of the treatment they received. The letter referred to a further sero-positive patient from Cork. Particulars for that patient were not included but stated to be available. This increased the number of HTLV III antibody positive Haemophilia B patients identified to the BTSB to seven. At the meeting of the 25 June Professor Temperley had referred to five and possibly six patients. The letter otherwise consisted of a more formal and detailed exposition of the information made available by Professor Temperley at the meeting of the 25 June.

The next meeting of the BTSB Board occurred on the 17 September 1986. The minutes record the following reference to Factor IX as an item in the report of the Executive Consultant:-

> "*Factor IX: A memo on the Factor IX position was circulated. Production has ceased in Pelican House. Full time production will be dependant on negotiations the Executive Consultant will carry out with Travenol, but he is not hopeful of resuming production in Pelican House, at least in the current year. The most practical way of dealing with this product is to get whoever processes our plasma to produce Factor IX. It will be noted that the material withdrawn has been re-entered into stock, but there is difficulty with most of this as well as some of the material was manufactured from non-tested donors. This will be discussed with Professor Temperley on his return from leave.*
>
> *During the ensuing discussion, Board members strongly expressed a view that Professor Temperley should take the stocks that had been re-heated and they requested that the Chief Medical Consultant and other appropriate staff should meet Professor Temperley urgently to resolve this matter.*"

There is again no reference to seroconversions among haemophilia B patients recorded in these minutes.

Dr. Barry, Dr. Terence Walsh and Mr. Sean Hanratty met Professor Temperley on Friday 26 September to discuss Factor IX. A memorandum from Dr. Terence Walsh to the Chief Technical Officer, Mr. Cann, records that, "*Development of HTLV III antibodies in haemophilia B patients was reviewed, as was the policy of the Board re. issue of Factor IX concentrate.*" The memo also recorded that Professor Temperley was to have discussion with colleagues abroad about the use of Factor IX concentrate which had been heat treated but made from donations of plasma which had not been individually tested for HTLV III antibodies. As has already been noted, Professor Temperley ultimately refused to accept such product.

Conclusions

The Tribunal has considered carefully the manner in which the BTSB recorded and responded to being informed by Professor Temperley of seroconversions among haemophilia B patients. The circular of the 25 June 1986 advising that only heat treated Factor IX be used and that any non-heat treated BTSB Factor IX be returned to Pelican House and the decision to review and increase the BTSB heat treatment protocol were clearly appropriate reactions to the information made available by Professor Temperley at the meeting of the 25 June. The Tribunal, however, believes both steps should have been taken earlier. The Tribunal has already expressed the view that non-heated BTSB Factor IX should have been withdrawn at a much earlier stage. The Tribunal also believes that a specific withdrawal of unheated BTSB Factor IX and a review of the BTSB heat treatment protocol should have been carried out in response to Professor Temperley's letter of the 22 April 1986.

Although the information in the April letter was much less specific, it did inform the BTSB that positive tests were occurring among haemophilia B patients and raised at least the possibility that this was due to BTSB product. If BTSB product was to blame, it was more likely to be non-heat treated than heat treated. If a query was raised about heat treated product, it was logical to review the heat treatment protocol.

There were further important steps which should have been taken by the BTSB. The information conveyed by Professor Temperley to Dr. Walsh at the meeting of the 25 June 1986 and confirmed and expanded in his letter of 26 August should have been brought formally to the Board, discussed by them and their discussion noted in the minutes. The BTSB also ought to have notified a number of bodies, and particularly the NDAB, the Department of Health and treating doctors using BTSB product of the "*very significant possibility*" that HIV seroconversions had been caused by BTSB Factor IX.

As is obvious from the examination of the Board minutes for July, August and September of 1986, they do not contain any direct record of the information contained in Dr. Walsh's memo of the 25 June or Professor Temperley's letter of the 26 August 1986 having been brought to or discussed by the Board. Dr. Terence Walsh did not routinely attend Board meetings in 1986. He appropriately communicated the information he received from Professor Temperley to Dr. Barry and Mr. Keyes who did attend the Board meetings. Dr. Barry gave evidence to the Tribunal. He is now an elderly man who has been retired since 1987. The Tribunal formed the view that although Dr. Barry made considerable and genuine efforts to assist the Tribunal, he no longer had any clear recollection of the events being enquired into and was not in a position to explain or elaborate upon the written records. The Tribunal has, therefore, formed a view of the information which was given to the Board on this issue based primarily upon its assessment of the evidence of Mr. Keyes and its analysis of the minutes.

The Tribunal thinks it probable that the "unsatisfactory" situation with Factor IX which the minutes of 18 June record Mr. Keyes as having reported to the Board was, as Mr. Keyes stated in evidence, a reference to Professor Temperley's letter of April and his concern at seroconversions occurring among haemophilia B patients. It is very difficult to discern from the brief and cryptic entry in the minutes exactly what information was given to the Board. Mr. Keyes stated he was aware of the April letter but was certain he had not seen the Irish Times report. The Irish Times report may have come to the attention of some of the members of the Board at that time. The most which could then have been reported to the Board or discussed by them was a general concern that seroconversions were occurring which might be due to either commercial concentrate or BTSB Factor IX.

The Tribunal thinks it unlikely the much more specific information conveyed by Professor Temperley at the meeting of the 25 June and in his letter of the 26 August was brought to the Board. The minutes contain no direct record of this having been done. Neither do they appear to contain any covert or indirect reference. Mr. Keyes suggested the sentence already referred to from the minutes of the 20 August 1986:-

> "*Board members were concerned about the Factor IX programme and asked that they be advised, if possible, at the next meeting on what action is proposed in relation to this area.*"

might have been a reference to the seroconversions.This doesn't seem probable to the Tribunal. From the context in which it is recorded, it seems to refer simply to concern about the proposals for future production of Factor IX.

The BTSB did not notify the NDAB, the Department of Health or treating doctors using BTSB product of the "*very significant possibility*" that HIV seroconversions had been caused by BTSB

Factor IX. The relationship between the BTSB and the NDAB will be examined more closely in the section of the report dealing with the NDAB, see *Part V, Chapter 10*. The seroconversions clearly ought to have been reported to the NDAB as a probable "adverse reaction" to the use of BTSB Factor IX. The matter was clearly of sufficient importance and consequence to warrant a specific report to the Department of Health. The failure of the BTSB to make such a report had important consequences at a later date for the approach adopted by the Department of Health to the campaign for recompense and litigation brought by persons with haemophilia. This is considered by the Tribunal at *Part V, Chapter 11*. The Tribunal believes the BTSB had an obligation to inform treating doctors using their product of the seroconversions and to ensure that the infected patients were informed of the source of their infection. Although the circular from Dr. Walsh of the 25 June was an appropriate urgent communication, focusing on the priority that only heat– treated Factor IX should be used and that any non-heat treated BTSB product should be returned, there should have been a further and more detailed communication informing the treating doctors of the seroconversions, of the changes made by the BTSB in their heat treatment protocol and of whether BTSB Factor IX then being supplied was made from donations which had been individually tested for anti-HTLV III antibodies. In the aftermath of the seroconversions, treating doctors were entitled to such information.

The fact that the information provided by Professor Temperley at the meeting of the 25 June and by letter of the 26 August was not brought to the Board, discussed and recorded in the minutes and disclosed to the appropriate bodies involved a serious failure on the part of the BTSB as an organisation. If the Tribunal is correct in its analysis of what occurred, Dr. Barry and Mr. Keyes were principally responsible for the failure to bring the information to the Board. They received the information from Dr. Walsh. Dr. Barry should have reported on the matter to the Board as Chief Medical Consultant. However, if he did not do so, Mr. Keyes should have done so or, if necessary, asked for Dr. Walsh to attend a Board meeting to report on the matter to the Board. On the Tribunal's analysis, the Board were not entirely blameless. If seroconversions among haemophilia B patients were referred to at the Board meeting of the 18 June, the Board should have enquired about them at subsequent meetings and should also have enquired about the outcome of the meeting between Professor Temperley and a BTSB consultant. An unwillingness to accept and acknowledge that BTSB product caused HIV seroconversions may partly explain, though not excuse, the failure of the BTSB to respond appropriately to the information made available to it in 1986. As a result, the probable association of the haemophilia B seroconversions with unheat treated BTSB Factor IX was not properly recorded in the BTSB Board minutes or disclosed to other parties. This allowed an ambivalence and blurring of the facts within the BTSB and a failure to disclose them which, as can be seen from later sections of the report, persisted in the dealings between the BTSB and the Department of Health.

BTSB Freeze-dried Cryoprecipitate

Events in Ireland

The exchange of correspondence between Professor Temperley and Dr. O'Riordan in December 1984/January 1985 and the entry in the Board minutes for the 16 January 1985, set out in the previous section dealing with Factor IX, referred to "heat treating all BTSB products produced for the treatment of haemophiliacs". These products were Factor IX for the treatment of persons with haemophilia B and freeze-dried cryoprecipitate for the treatment of persons with haemophilia A. Although both products were frequently referred to together in correspondence and at meetings, and there were many common themes there were also differences and it is, therefore, convenient to deal with BTSB cryoprecipitate separately, although with frequent references to the section dealing with BTSB Factor IX.

In her conversation with Dr. Smith in December 1984/January 1985, Ms Cecily Cunningham notes him to have stated "*cryo would probably not*" – apparently indicating cryoprecipitate would not be suitable for heat treatment. It is, therefore, surprising in the letter of the 17 January 1985 from Professor Temperley to Dr. Scott, already quoted, to find him making a distinction between cryoprecipitate where he states, "*We are assured this will be heat treated in about one month's time*" and Factor IX which, he says, "*will be shortly heat treated.*" As already stated, these assurances were apparently given verbally in discussions between Professor Temperley and representatives of the BTSB. It is difficult to understand how any such concrete assurance could have been given at the time by the BTSB about heat treating cryoprecipitate.

Heat–treated commercial Factor VIII became available to the BTSB in January 1985. From that point onwards it was supplying heat treated commercial Factor VIII and BTSB freeze-dried cryoprecipitate, unheat treated.

As in the case of Factor IX, there is no record of any contact between the BTSB and treating doctors about heat treating cryoprecipitate between January 1985 and the meeting with Dr. Helena Daly on the 13 August 1985. Neither is there any surviving record of contact between the BTSB and other producers of cryoprecipitate during that period. At the meeting of the 13 August 1985 Dr. Daly was apparently told by Dr. O'Riordan and Mr. Hanratty that the cryoprecipitate could not be heat treated, because the fibrinogen would gel. As already noted, Dr. Daly, on Professor Temperley's instructions, informed the BTSB by letter dated 21 August that Professor Temperley would not be prepared to use BTSB cryoprecipitate after 1 November 1985.

The contract with Travenol for custom fractionation of Factor VIII had been entered into in July 1985 and the programme of collecting plasma to be sent to Travenol had commenced. The BTSB had apparently originally intended to continue to supply some cryoprecipitate for the treatment of persons with haemophilia A as well as the Factor VIII concentrate from the custom fractionation agreement. The refusal by the treating doctors to continue to use cryoprecipitate made it necessary to change this plan. This resulted in an increased demand for plasma to enable the total requirement for treatment of haemophilia A patients to be met from the custom fractionated concentrate. This in turn resulted in a situation in which from approximately August 1985 almost all the available plasma was sent for custom fractionation and the production by the BTSB of significant quantities of freeze-dried cryoprecipitate for the treatment of persons with haemophilia A ceased.

The BTSB, however, had stocks of freeze-dried cryoprecipitate already made which they continued to supply until the end of 1985.

HTLV III antibody testing of individual donations commenced in mid-October 1985. The notice of the 30 January 1986 to the medical officer in charge of hospital blood banks dealt with cryoprecipitate in the following terms:-

> "***Cryoprecipitate*** *– all cryoprecipitates issued prior to January 1986 have not been tested. Any unused units issued prior to that time should now be returned.*"

It seems from this notice the BTSB did not have cryoprecipitates, prepared from donations received after mid-October 1985 and, therefore, subjected to individual HTLV III antibody testing, until January 1986 and they continued to issue cryoprecipitates prepared from untested donations until the end of December 1985. The notice specifically directed the return of any such units and offered to replace them with cryoprecipitates prepared from tested donations.

Events leading up to the issuing by the BTSB of the notice of the 30 January 1986 have been examined in detail in the preceding section, including the information which the Tribunal believes was probably given by Professor Egan to Dr. Terence Walsh about the seroconversion of his patient, "Fionn".

In the Council of Europe questionnaire, completed by Dr. Walsh in April 1986, already referred to, he recorded one person who had been treated with cryoprecipitate as being positive for anti-HTLV III. As in the case of the four haemophilia B patients recorded by Dr. Walsh, he stated that he would have got the information from the National Haemophilia Treatment Centre. It seems likely the patient referred to by the National Haemophilia Treatment Centre was in fact "Fionn". Dr. Walsh stated in evidence that some doubt was expressed to him at the time as to whether the patient had received only BTSB cryoprecipitate and that he did not pursue the matter further.

The BTSB does not seem to have issued freeze-dried cryoprecipitate as a standard product for the treatment of persons with haemophilia A after January 1986. Their standard product was Factor VIII concentrate, custom fractionated from Irish plasma, supplemented in the event of shortage of stock by commercial Factor VIII, both product, of course, at this time heat treated. Some cryoprecipitates continued to be issued for other clinical use after January 1986. These would still not have been heat treated but they would have been made from donations which had been tested for HTLV III antibodies.

Expert Evidence

The Tribunal had the assistance of expert evidence on heat treating cryoprecipitate from Professor Van Aken of Holland and Professor Leikola of Finland. Both were agreed that heat treating cryoprecipitate was a difficult process and known to be such in the medical and scientific community. Professor Van Aken explained the difficulty to lie in the fact that there were a variety of proteins present in cryoprecipitate making it more difficult to heat than a more purified product. Professor Van Aken stated that in Holland the Central Laboratory for Blood Transfusion, the CLB, a public service body similar to the BTSB, developed a process for heat treating freeze–dried cryoprecipitate by December 1985. He described the process as being difficult to achieve. In Finland, Professor Leikola explained, they developed a process for heat treatment of intermediate purity Factor VIII concentrate by October 1985 but they were unable to develop a process to heat treat cryoprecipitate until 1987 or 1988. They obtained assistance from the CLB in Amsterdam in developing the process. Professor Leikola thought it would probably have been generally known that the CLB in Amsterdam had developed a method of heat treating freeze–dried cryoprecipitate but that it also would have been very well known that it was difficult to heat treat cryoprecipitate.

Heat Treatment of Cryoprecipitate

The Tribunal formed the view that although heat treatment of freeze–dried cryoprecipitate was not impossible it was, in practical terms, beyond the resources of the BTSB to develop a process for doing so during the course of 1985. It took the CLB, with much greater resources available to it, until December 1985 to develop a process and Finland were not able to do so until 1987 or 1988. Although there does not seem to be any surviving record of contact by the BTSB with other fractionators on this issue apart from Ms. Cunningham's record of her phone conversation with Dr. Smith, the Tribunal is prepared to accept that the relevant officials in the BTSB would have been aware of the difficulty involved and may have obtained unrecorded information through their attendance at international meetings or seminars. The BTSB was also devoting considerable energy and resources during 1985 to developing custom fractionation of Factor VIII from Irish

donations. In all the circumstances, the Tribunal considers it was reasonable for the BTSB not to have pursued an attempt to heat their cryoprecipitate. The Tribunal also, however, believes that had the question been given the urgent attention referred to by Dr. O'Riordan in his letter of 2 January 1985 or indeed a reasonable and appropriate degree of attention, the BTSB ought both to have realised their inability to heat treat cryoprecipitate and informed the treating doctors significantly before August 1985.

Balance of Risk

Since the BTSB were unable to heat treat their cryoprecipitate, a similar balance of risk issue arose between cryoprecipitate made from voluntary Irish donors on the one hand and heat–treated commercial Factor VIII on the other as between non-heat treated BTSB Factor IX and heat–treated commercial Factor IX. There was an important difference between BTSB cryoprecipitate and Factor IX. Cryoprecipitates were generally prepared from approximately five donations whereas Factor IX was fractionated from pools of 500 to 1,000 donations. The use of cryoprecipitate therefore involved less exposure to risk than the use of unheated BTSB Factor IX. The Tribunal considers it was appropriate for the BTSB to continue making cryoprecipitate available in the early part of 1985 where the only available alternative was heat treated commercial Factor VIII. As with Factor IX, the Tribunal believes the balance of opinion and practice shifted in the United Kingdom as the year progressed as more evidence became available of the effectiveness of heat treatment in inactivating the HIV virus and evidence began to emerge of the infection of persons with haemophilia A and B in the United Kingdom who had been treated with unheated NHS Factor VIII and Factor IX. The published letter from Doctors Bloom, Forbes and Ritza to the *Medical Journal* of 22 June 1985, already referred to, specifically referred to cryoprecipitate as well as concentrates and stated that the authors no longer considered the use of cryoprecipitate or other non-heat treated concentrates to be justified. The authors referred to the necessity to introduce testing of individual donations for HTLV III antibodies as soon as possible and stated that when cryoprecipitate made from individually tested donations became available its role in the treatment of haemophilia could be reassessed. It nonetheless does not seem to the Tribunal that the shift in opinion and practice against the use of cryoprecipitate was quite as decisive and general as that against the use of unheat treated concentrate. The Tribunal believes this is likely to have been because of the smaller number of donors and therefore reduced risk involved in the use of cryoprecipitate as compared to the use of unheated concentrate. While, therefore, the BTSB could have withdrawn BTSB cryoprecipitate as a treatment for persons with haemophilia A in or about August 1985 and recommended that heat treated commercial Factor VIII concentrate should be used until Factor VIII custom fractionated from Irish plasma became available, the Tribunal does not consider the situation was so clear cut as to require they should have done so.

Communication of Risk

If the BTSB did not withdraw cryoprecipitate as a treatment for persons with haemophilia A in or about August 1985, it was essential that they should have drawn the attention of treating doctors using the product to the fact that cryoprecipitate was not and would not be subjected to heat treatment, that it was made from donations which had not been tested for HTLV III antibodies and that heat-treated commercial Factor VIII was available as an alternative treatment. It would also have been appropriate for the BTSB to have informed such treating doctors of their plans to have custom fractionated Factor VIII available by January 1986. When anti-HTLV III antibody screening of individual donations was introduced in mid-October 1985 it would have been appropriate for the BTSB to have informed the treating doctors that the cryoprecipitate which continued to be supplied at that time had been made from donations which had not been tested and to inform them of when cryoprecipitate prepared from tested donations would be available.

A considerable amount of this information was available to doctors in the National Haemophilia Treatment Centre. It is clear from the minutes of the NHSCC that the BTSB did report to that body on the custom fractionation project and on the introduction of anti-HTLV III testing of donations. The Tribunal, however, believes in the circumstances the BTSB had a specific obligation as producer of cryoprecipitate to make the information known to treating doctors to whom it was supplied. There is no record of them having done so. Information made available to the NHSCC did not necessarily reach all the treating doctors. It is clear, for instance, from his evidence that Dr. Egan was not receiving information from the NHSCC at this time. Neither were doctors providing treatment in hospitals outside the National Haemophilia Treatment Centre, Cork or Limerick.

Seroconversion of "Fionn"

The Tribunal believes Dr. Terence Walsh ought to have pursued the information he received suggesting that a patient had seroconverted due to the use of BTSB cryoprecipitate. Dr. Walsh accepts he received such information from the National Haemophilia Treatment Centre when he was completing the Council of Europe questionnaire in April 1986. Whether or not the seroconversion of "Fionn" was, as the Tribunal believes probable, also referred to in the phone conversation between Professor Egan and Dr. Walsh on the 13 January, the Tribunal believes Dr. Walsh should have pursued the matter. The information which Dr. Walsh received about the seroconversion of "Fionn" was not as clear and definite nor was it presented to him as formally as the information he received from Professor Temperley about the seroconversion of the haemophilia B patients. It may well have been indicated to him that there was uncertainty as to whether "Fionn" had received other treatment. The matted should, however, have been investigated further by the BTSB to ascertain whether the seroconversion was likely to have been due to the use of BTSB cryoprecipitate. If it had been established this was likely, it should have been brought to the Board of the BTSB, discussed and noted in the Board minutes and notified to the Department of Health, NDAB and treating doctors using BTSB products as the Tribunal has already found should have occurred in respect of the haemophilia B seroconversions.

"Fionn" was the only persons with haemophilia identified as likely to have been infected by treatment with BTSB cryoprecipitate. The Tribunal does not think it likely that any other person with haemophilia was infected with HIV by BTSB cryoprecipitate. "Fionn" received his last relevant treatment of cryoprecipitate in May 1985. It was not possible to identify which treatment of cryoprecipitate caused "Fionn's" infection. It may have been a much earlier treatment. Even if his infection was caused in May 1985, unfortunately, none of the steps which the Tribunal believes should have been taken by the BTSB after May 1985 in relation to cryoprecipitate could have had any relevance to his situation. Fortunately, it does not seem that the failure of the BTSB to take those steps resulted in the infection of any other person with haemophilia with HIV.

Viral Inactivation 1985/6

Relevant international developments will first be described and the work of the BTSB will then be examined in the light of those developments.

Viral Inactivation Against the Risk of Transmission of HIV

The Tribunal has already described the increasing confidence during 1985 in dry heat treatment in the lyophilised state as a protection against the risk of transmission of HIV. This confidence would have been strengthened by publications by McDougal & Others in the *Journal of Clinical Investigation*, Inc. Volume 76, August 1985, "Thermal Inactivation of the AIDS Virus, HTLV III/LAV,

with special reference to AHF" and a letter to the *Lancet* of the 19 October 1985 from Petricciani, McDougal & Evatt, "Case for concluding that heat treated, licensed anti-haemophiliac factor is free from HTLV III". These publications were from the same group of scientists whose work had formed the basis for the publication by the CDC in autumn 1984 of the efficacy of dry heat treatment. The combined effect of the 1985 publications was to suggest that even the minimum temperature and heating time used by commercial manufacturers of Factor VIII, stated to be 60 degrees centigrade and 10 hours respectively, should be more than sufficient to inactivate any HIV virus which was likely to be in Factor VIII concentrate.

Dr. Peter Jones referred in his evidence to the Tribunal to a publication of a letter in the *Lancet* of the 22 June 1985 from Levy & Others of the University of California and Cutter which stated, in effect, that heating lyophilised Factor VIII for 72 hours at 68 degrees centigrade or heating in the liquid state for ten hours at sixty degrees centigrade was sufficient to eliminate the HIV virus. Dr. Jones stated in evidence that he drew the inference that heating in the lyophilised state at a lesser temperature or for lesser periods would not be sufficient to inactivate the HIV virus. The Tribunal does not consider that this was an inference generally drawn from the publication at the time. The Tribunal believes that in the second half of 1985 the generally held view was that the heat treatment protocols applied by the commercial fractionators to lyophilised concentrates were sufficient to inactivate the HIV virus.

Rumours apparently circulated during the second half of 1985 and early 1986 of seroconversions having occurred in patients being treated with heat treated concentrates. In a paper he delivered to a conference on AIDS at Newcastle in February 1986 Dr. Jones referred to four possible breakthroughs of HIV infection through dry heat treated commercial concentrates. The first published accounts of probable HIV seroconversion following treatment with heat treated Factor VIII concentrate were letters to the *Lancet* from White & Others and Van Den Berg & Others dated respectively 15 March 1986 and 5 April 1986. These reports of seroconversions were referred to in a letter to the *Lancet* of 31 May 1986 from Dr. Prince, "*Effect of heat treatment of lyophilised blood derivatives on infectivity of human immuno-deficiency*". In that letter experimental laboratory work carried out on the effect of heat treatment of Factor VIII concentrate at 60 degrees centigrade was described. The virus inactivation resulting was reported to be "*surprisingly modest, varying between 0 and 1 log at 10 hours and between 2 and 4 logs after 72 hours of heating*". These results contrasted strongly with the results described by McDougal & Other in the publications or August and October 1985. Dr. Prince explained this discrepancy to the Tribunal. McDougal & Others had measured the degree of viral inactivation resulting from one hours heating at 60 degrees centigrade and had predicted that heating for longer periods would result in more or less linear progression of viral inactivation so that heating for 10 hours would result in approximately ten times the viral inactivating resulting from heating for 1 hour. Dr. Prince explained that the application of heat actually has a diminishing effect as time progresses so that, for instance, the viral inactivation resulting from the fifth hour of heating would be significantly less than that resulting from the first hour. For this reason McDougal and Others over-estimated the extent of viral inactivation which would be achieved by the heat treatment protocols applied by the commercial fractionators.

The Lancet letter of May 31, expressed Dr Prince's conclusion from his laboratory experiments in moderate terms:-

> "*The finding of only modest sterilisation process efficacy for HIV adds to concern about the efficacy of this procedure. It should, however, be stressed that this finding does not mean that dry-heat treated products are unsafe with respect to transmission of AIDS. Indeed three studies have reported absence of anti-HIV seroconversion in recipients of dry-heat treated Factor VIII preparations. Purification and processing steps before lyophilisation can remove or inactivate virus, and lyophilisation alone under commercial conditions probably*

inactivates more virus than is observed with shell freezing. Furthermore, some products are heated above 60 degrees centigrade. Nevertheless, these findings indicate the need for caution in relying on the efficacy of dry-heat sterilisation. Long-term surveillance or recipients of such products for seroconversion to anti-HIV is still required."

The reports of seroconversion from White and Van Den Berg had not specified the heat treatment protocol involved. In an editorial note in the *Lancet* of the 14 June 1986 in response to a letter from Ralph Rousell of Cutter Laboratories, in effect protesting at this absence, it was stated that the heat treatment was, in both cases, at 60 degrees centigrade for 30 hours in a lyophilised state. This identified the product as Armour. They were the only fractionator using that heat treatment protocol – the Travenol dry heat treatment protocol being 60 degrees centigrade for 72 hours and Cutter, 68 degrees centigrade for 72 hours.

Dr. Prince informed the Tribunal that the research he reported to the *Lancet* in May 1986 had originally been carried out at the request of Armour and had then been repeated by Dr. Prince when Armour refused to permit him to publish the result of his research. His letter made no specific reference to Armour and Dr. Prince stated he was anxious to express concern about the efficacy of dry heat treatment in general although clearly the shorter the period applied the greater the concern. In October 1986 Armour withdrew its dry heat treated product from the United Kingdom and Ireland as a result of reports of further seroconversions in patients in the United Kingdom. By the end of 1986 it would seem there were serious misgivings about the effectiveness of the Armour dry heat treatment protocol of 60 degrees centigrade for thirty hours as protection against the risk of transmission of HIV. There was not the same concern about products treated with the Travenol (60 degrees centigrade for 72 hours) or Cutter (68 degrees centigrade for 72 hours) protocols although such products were gradually replaced in the period after the 1 January 1987. It seems this development was prompted primarily by the search for a form of viral inactivation effective against the risk of transmission of NANB hepatitis, although general misgivings about the effectiveness of dry heat treatment at temperatures of in the region of 60 degrees centigrade against the risk of transmission of HIV may have contributed to the development.

Viral Inactivation against the Risk of Transmission of Non-A Non-B Hepatitis

Studies published in 1983 – "Non-A Non-B Hepatitis after Transfusion of Factor VIII in Infrequently Treated Patients", Fletcher & Others, *British Medical Journal*, 10 December 1983, and 1985 – "High Risk of Non-A Non-B Hepatitis after a First Exposure to Volunteer or Commercial Clotting Factor Concentrates", Kernoff & Others, *British Journal of Haematology* 1985, 60 469/479, confirmed the probability that patients who had not been previously been exposed to concentrates would develop NANB hepatitis after first exposure to concentrates, whether these concentrates were of commercial or NHS voluntary origin. In the second study the overall infection rate following a first exposure was described as approaching 100 per cent. The patients in these studies received commercial or NHS concentrates which had not been subjected to any form of viral inactivation. The clinical trial organised by Professor Mannucci & Others with Hemofil T – Factor VIII concentrate heated according to the Travenol method of 60 degrees centigrade for 72 hours – has already been referred to as has Professor Mannucci's evidence that he informed his colleagues of the failure of this protocol to prevent the transmission of NANB hepatitis at a meeting in Barcelona in September 1983. The results of the study were published in a paper in the *Lancet* of the 6 July 1985, "Transmission of non-A non-B hepatitis by heat treated Factor VIII concentrate", Colombo & Others. Eleven of thirteen previously untreated patients treated with Hemofil T were reported to have developed NANB hepatitis.

In 1984 the International Committee on Thrombosis & Haemostasis (ICTH) drew up criteria for the design and performance of clinical studies designed to evaluate the efficacy of viral inactivation

procedures against the risk of transmission of NANB hepatitis. These criteria were described by Professor Mannucci in his evidence to the Tribunal and also in a review article in the *Lancet*, 1 October 1988 – "Virucidal Treatment of Clotting Factor Concentrates" – Mannucci & Colombo. The essential elements of the ICTH recommendations were that previously untreated patients – patients who had not previously been exposed to blood or blood products – should be enrolled in the study; persons with underlying liver disease or with markers of HB infection (except patients vaccinated against HBV) should be excluded; patients should be followed and blood tests taken for a specified period and at specified intervals; the presence of NANB hepatitis should be diagnosed by a rise in AST to more than 2.5 times the upper normal limit on two occasions fifteen days apart, between fourteen and one hundred and eighty days after transfusion and the study should follow approximately twenty patients. Until the identification of the hepatitis C virus in 1989, clinical trials provided the only generally accepted evidence of the effectiveness of methods of viral inactivation of NANB hepatitis. These recommendations were, therefore, of considerable importance in establishing standards to be used in such trials.

During this period products were developed using the following systems of viral inactivation:-

(1) Pasteurisation or heating in solution;
(2) Heating n-Heptane suspension and vapour/steam heating;
(3) Dry heat treatment at 80 degrees centigrade for 72 hours;
(4) Solvent detergent treatment.

1. Pasteurisation or Heating in Solution

As already described, a German company, Behringwerke, fractionated a concentrate heat treated in solution at 60 degrees centigrade for 10 hours in the presence of a stabiliser. The process resulted in a very significant loss of yield of concentrate and it was not considered practical for large scale production. In 1986 Armour were licensed to market Haemate P, the pasteurised Factor VIII manufactured by Behringwerke in the U.S.A., and Cutter were licensed to market a pasteurised Factor VIII, Koate HS. Satisfactory formal evidence of the effectiveness of pasteurisation against the risk of transmission of NANB hepatitis was not published until 1987. An article in the *New England Journal of Medicine* 9 April 1987, "Absence of Hepatitis after Treatment with a Pasteurised Factor VIII Concentrate in Patients with Haemophilia and no previous Transfusions", Shimpff, Mannucci & Others, showed no infection in 26 previously untreated patients treated with pasteurised Factor VIII.

2. Heating in n-Heptane Solution and Steam/Vapour Heating

Alpha produced a Factor VIII and Factor IX concentrate heated in n-Heptane suspension which was licensed in the U.S.A. in 1984. The results of a study of the use of the Alpha Factor VIII in patients in the United Kingdom were published informally by letter in the *Lancet*, 28 September, 1985, "Wet heating for safer Factor VIII concentrate?", Kernoff and Others and more formally in a paper in 1987 – "Reduced Risk of Non-A Non-B Hepatitis after a First Exposure to Wet Heated Factor VIII Concentrate", Kernoff & Others. *British Journal of Haematology*, 1987, 67, 207-211. Five of eighteen previously untreated patients treated with the product developed NANB hepatitis. While this result was clearly better than in the case of the study of Hemofil T, it still showed a significant transmission of non-A non-B hepatitis. The process of vapour or stem heated concentrates was developed by Immuno. Professor Mannucci described using this product in clinical practice in Italy. He stated in evidence that some cases of hepatitis B and one case that developed both hepatitis B and hepatitis C were associated with the initial use of the product but that following an improvement in the method subsequent studies showed it to be reasonably safe.

3. Dry Heat Treatment at 80 Degrees Centigrade for 72 Hours

The development at Oxford/Elstree and Edinburgh of a dry heat–treatment protocol of 80 degrees centigrade for 72 hours was described to the Tribunal by Dr. Snape and Dr. Smith of Oxford/Elstree and by Dr. Foster of Edinburgh. Factor VIII and Factor IX treated in this way became available from Elstree in 1985. In Scotland Factor IX was available from 1985 and Factor VIII from April 1987. The 80 degrees temperature used was significantly higher than the 60 to 68 degrees used in all other forms of heat treatment. It was viewed with some astonishment by other fractionators at the time. It required special adaptations of the fractionation process to produce a concentrate which was capable of withstanding being heated in its lyophilised state to 80 degrees. The developers of the protocol apparently sought to use the highest temperature possible without interfering with the Factor VIII or Factor IX on the basis that the higher the temperature the greater the likelihood of viral inactivation of both HIV and non-A non-B hepatitis. They were able to conduct some laboratory experiments in Scotland on heating viruses other than HIV and NANB which showed greater inactivation at 80 degrees centigrade than at 70 degrees or 60 degrees. They did not, however, carry out laboratory experiments on heating concentrates spiked with HIV, nor did they have access to chimpanzees to study whether hepatitis was transmitted to chimpanzees by concentrates heated at 80 degrees. Evidence for the efficacy of dry heat treatment at 80 degrees centigrade would therefore essentially have to come from the results of clinical trials and clinical use. It could readily be inferred that heating at 80 degrees would be at least as effective and probably more effective against the risk of transmission of HIV than heating at 60 degrees or 68 degrees centigrade. It was reasonable to hope that heating at 80 degrees might be more effective against non-A non-B hepatitis than heating at the lesser temperatures and the laboratory results with surrogate viruses were encouraging. However, there was no basis for assuming that heating at 80 degrees would prevent the transmission of non-A non-B hepatitis. Any evidence for the efficacy of dry heat treating at 80 degrees centigrade in preventing the transmission of non-A non-B hepatitis would have to come from clinical trials and clinical use.

Results of the clinical use of BPL Factor VIII and Factor IX heat treated to 80 degrees centigrade were published in a paper by Fletcher & Others to the Haemophilia Congress in Milan, May 1986, a paper by Smith & Others to a Symposium in Melbourne Australia in 1986 and by way of an interim report by Dr. Smith to U.K. Haemophilia Centre Directors in Septembers 1986. The paper delivered to the Melbourne Symposium described in detail the patients who had been treated and the manner in which they had been followed up after treatment. In these areas there was not strict compliance with the ICTH recommendations for clinical trials. The authors, therefore, describe their paper as a report on a "surveillance" rather than a clinical trial. The paper nonetheless reported that none of the patients observed showed signs of infection with NANB hepatitis according to the accepted criteria. The discussion in the paper concluded with the following two paragraphs:-

> *"Let me again concede that this collection of data of variable quality does not carry the full authority of a formal prospective clinical trial. However, when all reservations have been made about imperfect follow-up data, the weight of this varied evidence justifies our asking clinicians to put many more previously untreated patients into a more formal trial, using even more batches of product.*
>
> *Although these are only interim results on a limited number of batches, we think we are justified in thinking that the severe heating has been more effective in preventing transmission of NANBH than the milder heating accorded to the Hyland and Armour products in studies published last year. It is too early to know whether NANBH transmission has been eliminated by severe dry heating, or whether we may see transmission by only a few batches, as has occurred with Alpha's Factor VIII concentrate heated in Heptane."*

It would seem to the Tribunal that this summary represents an accurate statement of the inferences which could properly be drawn for the surveillance of the clinical use of the product up to the end of 1986. Dr. Snape stated in evidence that the absence of NANB infection following the use of the NHS product would have been generally known among the U.K. doctors and scientific community by the autumn of 1986 and increasingly internationally also.

The Study Group of the U.K. Haemophilia Centre Directors published the results of further surveillance of the use of the products in a paper in the *Lancet*, 8 October 1988, "Effect of dry heating of coagulation factor concentrates at 80 degrees centigrade for 72 hours on transmission of non-A non-B hepatitis". In the discussion, the authors summarise the results of their study as follows:-

> *"In none of 32 patients exposed to Factor VIII or Factor IX concentrate, dry heated at 80 degrees centigrade for 72 hours, did NANBH develop as defined by ICTH criteria. This may be interpreted statistically as indicating a true incidence (95% confidence limits) of NANBH transmission in a range of between 0 and 9% - a range similar to that for pasteurisation in solution and better than that for Factor VIII treated in non-aqueous immiscible fluid. However, the quality of the date requires careful assessment."*

The authors went on to explain that the study reported on in 1988 had still not complied strictly with ICTH recommendations, but also why, in their view, the departures from the recommended criteria were not significant. A further publication in 1993 of the results of a study complying strictly with the ICTH recommendations confirmed the absence of NANBH transmission.

There were never any reported incidents of HIV seroconversion following the use of Factor VIII or Factor IX heated at 80 degrees centigrade for 72 hours.

4. Solvent Detergent

The solvent detergent method of viral inactivation was developed at the New York Blood Centre. The Tribunal had the advantage of having evidence from Dr. Prince and Dr. Horowitz who played a prominent part in its development. The basic principle of the method was to introduce a solvent and detergent into both Factor VIII and Factor IX concentrates with the intention of inactivating lipid-enveloped viruses without interfering with the Factor VIII or Factor IX protein. An article by Drs. Prince, Horowitz & Others submitted in July 1983 and published in *Vox Sanguinis* in 1984 provided evidence, through chimpanzees studies, that the hepatitis B virus and one strain of NANB hepatitis virus could be effectively inactivated by exposure to Tween 80 and ether. It also provided evidence that neither Factor VIII nor Factor IX coagulation activity were significantly interfered with by exposure to Tween 80 and ether. The article referred to a limitation of the process. It was only effective in inactivating lipid coated viruses. The article referred to a recent report by Bradley & Maynard suggesting the possible existence of a strain of NANB virus which was not lipid coated. The article submitted in 1983 made no reference to the HTLV III virus. The HTLV III virus was lipid coated and, therefore, capable of being inactivated by the solvent detergent method. The New York Blood Centre was licensed to produce Factor VIII using the solvent detergent method in 1985. An article by Drs. Prince, Horowitz & Another was published in the *Lancet* of 29 March 1986, "Sterilisation of Hepatitis and HTLV III Viruses by Exposure to Tri (n-Butyl) Phosphate and Sodium Cholate". As the title would suggest, by the time this article was published tri (n-butyl) phosphate (TNBP) and sodium cholate (CA) had replaced ether and Tween 80 as the solvent/detergent. The article again referred to chimpanzees studies as evidence for the effectiveness of the solvent detergent method in inactivating the hepatitis B and NANB viruses and to laboratory experiments on Factor VIII concentrates spiked with HTLV III virus as proof of its efficacy in inactivating that virus. It

also again referred to the inability of the solvent detergent method to inactivate "*non-lipid-membrane-coated viruses*" and to the possible existence of such a strain of NANB hepatitis. The authors went on to state that they had taken a pool of thirteen lots of Factor VIII from five different manufacturers, therefore containing approximately 15,000 donations, and treated it with TNBP/CA. The treated material did not produce hepatitis in two chimpanzees whose susceptibility was confirmed by subsequent exposure to the untreated pool. The authors concluded,

> "*Thus, we are unable to confirm the existence of a TNBP/CA-resistant NANB agent in a pool of about 15,000 donations. It is possible that the Bradley agent originated in the chimpanzee from which it was isolated, rather than from the human inoculum; alternatively, the agent is uncommon or easily neutralised by antibody enlarged pools.*"

The 1986 article did not contain any evidence of the results of clinical use of solvent detergent product. Indeed it concluded by saying,

> "*Careful clinical surveillance of newly diagnosed haemophiliacs who received TNBP/CA treated Factor VIII concentrate will be necessary to confirm the sterility of this product.*"

The solvent detergent method held out great promise. If it was capable of inactivating the HIV, NANB hepatitis and hepatitis B viruses without interfering with the Factor VIII or Factor IX proteins or causing any significant loss of yield, it would obviously be of immense benefit to fractionators. However, where all the other forms of viral inactivation involved some form of application of heat, the solvent detergent method involved a new departure and a different process. It was perhaps naturally viewed with some caution at first. Dr. Foster described to the Tribunal how he became aware of the work of the New York Blood Centre in 1985, but stated that he was concerned about the possibility that there might be a non-enveloped NANB virus and about how effectively the chemicals used in the solvent detergent process could be removed from the product. There was also scepticism about the reliability of the chimpanzees' studies because of the earlier experience with the Travenol dry heat treated product where promising results for NANB hepatitis viral inactivation in chimpanzees' studies had not been borne out in clinical practice.

The New York Blood Centre produced solvent detergent Factor VIII from 1985. It did not itself produce Factor IX although it developed a process for solvent detergent treatment of Factor IX concentrate. Dr. Horowitz described in evidence how the New York Blood Centre, a not for profit organisation, contacted fractionators in 1985 to inform them of the solvent detergent method and of the willingness of the New York Blood Centre to licence the method to them at a modest cost. Dr. Horowitz said they contacted fractionators as distinct from blood banks because the process was suitable for incorporation into the fractionation process but not the work of a blood bank as such. Dr. Horowitz stated that the solvent detergent process was not unduly complex and did not involve processes which would be outside the normal scope of activity of a fractionator. He did say, however, that since the solvent detergent step was incorporated into the fractionation process and not applied after final lyophilisation particular care had to be taken to avoid post-treatment contamination–the risk of contamination of treated material by untreated.

Dr. Horowitz produced evidence to the Tribunal from the records of the New York Blood Centre of the European organisations which first produced solvent detergent under licence from the New York Blood Centre. In summary, solvent detergent Factor VIII and Factor IX began to be produced from 1987 and 1988 with, in most cases, Factor VIII being produced somewhat earlier than Factor IX. Among the organisations involved were the Swiss Red Cross and German Red Cross, an Italian company, Aima, CNTS in Lille and Kabi in Sweden. The first commercial fractionator to produce concentrate using the solvent detergent method in America was Hyland in 1988.

There was a publication of some results of clinical use of solvent detergent product in Thrombosis and Haemostasis in 1987 and a fuller and more detailed publication in the *Lancet*, 23 July 1988, "Virus Safety of Solvent/detergent-treated Anti-haemophilic Factor Concentrate", Horowitz & Others. The *Lancet* article showed no transmission of NANB hepatitis or HIV to sixteen and seventeen patients respectively treated with solvent detergent product. No reference was made to the possible existence of a non-lipid enveloped strain of NANB virus and it seems from the evidence of Dr. Prince and Dr. Horowitz that they were satisfied by this time that such a strain did not exist.

Monoclonal Concentrates

Fractionation processes using monoclonal antibodies were developed. The primary purpose was to achieve a highly purified and concentrated product with high specific activity but there was also some degree of viral inactivation. The process of immunoaffinity chromatography utilising monoclonal antibodies was thus described in Kasper & Others, "Recent evolution of clotting factor concentrates for haemophilia A and B", *Transfusion* Volume 33 No. 5,

> "*Immunoaffinity chromatography was assisted by the development of monoclonal antibodies to specific clotting factors, such as Factor VIII. The antibodies can be coupled to a matrix through which plasma or one of its fractions is poured, thus attaching the targeted clotting factor. The matrix can then be rinsed to decrease contamination with unwanted proteins and viruses and the clotting factor can be eluted. Other chromatographic purification steps may follow. Such extensive purification in itself results in a high degree of separation from viruses.*"

Factors fractionated using the monoclonal method and treated with various forms of viral inactivation were licensed in the United States from 1987 and 1988 onwards.

Appreciation of the Clinical Significance of NANB Hepatitis

The Tribunal has already traced the developing state of knowledge of the clinical significance of non-A non-B hepatitis up to June 1982. In the period after that date the results of further studies were published tending to show the condition to have potentially serious long term consequences. One such study was an article by Hay, Preston & Others in the *Lancet*, 29 June 1985, "Progressive Liver Disease in Haemophilia: An Understated Problem?" In their introduction the authors referred to the hitherto generally benign view of non-A non-B hepatitis:-

> "*Little concern has been expressed about the long term implications of liver disease associated with haemophilia; few clinical features of chronic liver disease have been reported in haemophiliacs and few deaths attributed to it. Liver biopsy studies have shown chronic persistent hepatitis in most of these patients, leading various workers to conclude that liver disease in haemophilia is benign and non-progressive.*"

In their discussion the authors reported:-

> "*Our observations show that progressive liver disease is a potentially serious problem in haemophilia. Of seventy-nine haemophilic patients, selected solely on the basis of previous exposure to blood products, seventeen had evidence of progressive liver disease (nine cirrhosis, eight chronic active hepatitis). Serial liver biopsies showed progression of chronic persistent hepatitis to chronic active hepatitis and cirrhosis within a period of two to six years.*"

In their concluding paragraphs the authors observed:-

> "*Although few reports of death attributable to liver disease in haemophilia have appeared, we predict that this will become more common.*"

In his evidence Dr. Prince referred to an article by Dienstag & Alter in *Seminars in Liver Disease* - Volume 6, No. 1, 1986, "Non-A Non-B Hepatitis: Evolving Epidemiologic and Clinical Perspective".

The authors commenced their review with the following paragraph:-

> "*More than a decade has elapsed since non-A non-B (NANB) hepatitis entered our lexicon. After all this time, after the publication of hundreds of articles, after the emergence and maturation of now stalemated controversies over the agents and the disease, our understanding of NANB hepatitis is still unsettled and evolving … Frustration persists over our inability to identify the agents of NANB hepatitis definitively; however, by observing the disease for more than a decade, we have gained insight into its natural history and its unusual pattern of insidious, silent progression. Strikingly clear is just how much we do not know about NANB hepatitis.*"

At a later stage in the paper the authors summarised the emerging knowledge of the clinical significance of NANB:-

> "*In the decade since its discovery, the concept of NANB hepatitis has evolved from that of a benign elevation of aminotransferase activity to that of a serious disease with significant long-term consequences. The longer patients are followed, the more obvious it becomes that chronic active hepatitis and cirrhosis are a real part of the natural history of non-A non-B hepatitis.*"

At the conclusion of their survey of studies of chronic non-A non-B hepatitis in persons with haemophilia, they concluded:-

> "*The experience in patients with haemophilia confirms the accumulating evidence in other transfused populations, namely, that NANB hepatitis leads to chronic hepatitis in more than 50% of patients and that 10 to 20% of those with chronic hepatitis will progress to cirrhosis.*"

In an 1987 review article in the *European Journal of Epidemiology*, "The Development of Virus Free Labile Blood Derivatives – A Review", which Dr. Prince published with Dr. Horowitz & Others they concluded a section dealing with non-A non-B hepatitis:-

> "*The clinical significance of NANB infection, as is the case for HBV infection, lies largely in the complications of the chronic carrier state which appears to occur in 20 to 40% of those infected by transfusion of coagulation factors. This chronic carrier state is associated in 10 to 20% of cases with development of chronic hepatitis and, in a so far ill defined proportion, in the eventual development of cirrhosis, no evidence has been found to suggest that NANB infection is associated with development hepatocellular carcinoma.*"

In his evidence, Dr. Prince naturally confirmed that in 1987 he held the view of the potential seriousness of non-A non-B hepatitis summarised in that paragraph, as did a number of his colleagues. He stated, however, that he did not think such views represented a consensus in the international scientific and medical community in 1987 and that such a consensus was not reached

until after 1989 with the identification of the hepatitis C virus and the availability of a specific test for hepatitis C antibodies. Dr. Prince's evidence in this regard was supported by other expert witnesses who gave evidence to the Tribunal. Professor Lee and Dr. Smith referred to two school of thought on the seriousness of non-A non-B hepatitis. It was clear from Dr. Dietrich's evidence that non-A non-B hepatitis was not a major concern for her before 1989. She referred to the fact that she was aware that there was more concern among European treating doctors about hepatitis than there was in the United States.

Dr. Prince attached considerable importance to the absence of a specific test for NANB hepatitis before 1989 in explaining the failure of the medical and scientific community to reach a consensus appreciation of the seriousness of NANB. The slow rate of progression of the disease in many cases and the non-specific symptoms in the early stages were also probably relevant factors. It is also clear from the expert evidence that between 1983 and 1987 attempts to avoid the transmission of HIV were the major preoccupation of the relevant scientific and medical communities.

The Tribunal has formed the view from this evidence that the consensus which existed in the late 1970s and early 1980s that NANB hepatitis was relatively mild or benign did change as the results of studies became available showing the condition to have potentially serious consequences for some people infected by it. A number of experts came to regard it as a serious disease with significant long term consequences, especially and increasingly in the period after approximately 1985. That view did not, however, come to be universally held in the relevant medical and scientific communities until after 1989.

Viral Inactivation Decisions taken by the BTSB during 1985 and 1986.

The agreement with Travenol for custom fractionation of Factor VIII from Irish plasma in June 1985 involved heat treatment at 60 degrees centigrade for 72 hours, the heat treatment protocol applied by Travenol to its own product, Hemofil T. Information available in June 1985 suggested it was effective against the risk of transmission of HIV. As already described, the misgivings about the efficacy of dry heat treatment in the lyophilised state which emerged in the second half of 1986 focuses on the Armour product. In the Tribunal's view, the Travenol protocol continued to be regarded as appropriate against the risk of transmission of HIV. There was no evidence that Factor VIII custom fractionated by Travenol from Irish plasma was the probable cause of infection with HIV of any person.

When Ms. Cunningham was instructed to commence heat treating BTSB Factor IX in August 1985 she was initially instructed by Mr. Sean Hanratty to heat at 68 to 70 degrees centigrade for 72 hours. She described in evidence applying this protocol without any apparent difficulty. However, she was almost immediately instructed to change to 60 degrees centigrade for 20 hours. No real explanation for this change emerged from the evidence. 60 degrees centigrade for 20 hours was obviously at the lowest end of the scale of heat treatment. However, according to the information then available, it would have been regarded as sufficient to inactivate the HIV virus. A decision was taken to change the protocol to 60 degrees centigrade for 72 hours in July 1986. This decision was taken partly as a result of the suggestion by Professor Temperley that the seroconversions in haemophilia B patients might have been caused by heat treated BTSB Factor IX and partly as a result of information brought back by Mr. Keating from an international conference to the effect that 72 hours was now regarded as the minimum period for dry-heat treatment in the lyophilised state. It seems likely the view reported by Mr. Keating from the international conference was a reaction to Dr.

Prince's letter to the *Lancet* and the publication of the seroconversions of patients being treated with the Armour heat treated product. 60 degrees centigrade for 72 hours was the protocol being used by Travenol for Factor VIII. In the Tribunal's view it would have been regarded as appropriate against the risk of transmission of HIV in June 1986, although it is perhaps surprising that when the BTSB increased the length of time of heating to provide a greater margin of safety they did not also increase the temperature from 60 degrees to 68 degrees centigrade. The Tribunal believes the decision taken in July 1986 to change the protocol was taken reasonably promptly. The seroconversions in persons with haemophilia B were caused by unheated BTSB Factor IX. There was no evidence that heated BTSB Factor IX, whether for 20 hours or 72 hours, was the probable cause of infection of any person with HIV.

It was known by 1985 that exposure to unheated concentrates carried a high risk of infection with non-A non-B hepatitis. It was also known that heat treatment in the lyophilised state of Factor VIII at 60 degrees centigrade for 72 hours was ineffective to prevent transmission of NANB hepatitis. Since it was known to be ineffective in the case of Factor VIII, there was no reason to suppose it would be effective for Factor IX. It would, therefore, have been known to the BTSB that both the Travenol custom fractionated Factor VIII and their own Factor IX continued to carry the risk of transmission of non-A non-B hepatitis.

It is clear that during 1985 and 1986 the focus and priority was viral inactivation against the risk of transmission of HIV. The Tribunal further does not believe that in 1985 and 1986 there was a method of viral inactivation, known to be effective in preventing the transmission of non-A non-B hepatitis and available in practice to the BTSB, either through custom fractionation or to be applied to their own product.

Satisfactory evidence of the effectiveness of pasteurisation was not published until 1987. Because of its low yield, it is unlikely that sufficient plasma could have been collected to supply the national requirement through pasteurised product. There was no evidence that any firm would have offered to custom fractionate for the BTSB using the pasteurisation method. It seems unlikely that it would have been technically within the competence of the BTSB to apply pasteurisation to its own Factor IX product. Any attempt to do so would certainly have involved much greater delay which in fact occurred in applying the dry heat treatment method. The initial evidence for the effectiveness of heating in n-heptane suspension and vapour/steam heating suggested it wasn't fully effective against the transmission of non-A non-B hepatitis. There was no evidence of the effectiveness of heating at 80 degrees centigrade for 72 hours against the transmission of non-A non-B hepatitis in 1985 and the evidence was only emerging during 1986. This protocol was not being used by commercial fractionators in 1985 and 1986 and could probably not have been applied by the BTSB to its own Factor IX without a significant modification of the fractionation process. Elstree was not in a position to fractionate plasma for the BTSB at this stage and the plasma fractionation laboratory at Edinburgh did not produce Factor VIII heated at 80 degrees until April 1987. No clinical evidence had been produced for the effectiveness of the solvent detergent method in inactivating NANB hepatitis before the end of 1986. There was no evidence that any firm would have been prepared to custom fractionate BTSB plasma using the solvent detergent method before the end of 1986. It seems unlikely the solvent detergent method could have been applied by the BTSB to its own Factor IX – again certainly not without considerable difficulty and delay. Concentrates using the monoclonal method were not produced before the end of 1986.

In these circumstances, the Tribunal does not think the BTSB can fairly be criticised for having failed to achieve a satisfactory system of viral inactivation against the risk of transmission of NANB hepatitis for its custom fractionated Factor VIII concentrate or its own Factor IX concentrate in the period prior to the 1 January 1987. It seems, however, from the evidence of international developments that during 1985 and 1986 work was carried out on a number of processes in the

hope of finding a more effective means of inactivating NANB hepatitis. It seems to the Tribunal that the BTSB might have been expected to follow these developments and inquire into them. This would especially apply in the latter part of 1986. The BTSB were then dissatisfied with the performance of Travenol on the custom fractionation contract. They were achieving poor yields of Factor VIII concentrate. It was intended that Travenol should return some processed plasma to the BTSB so that it could fractionate Factor IX from it. Some bulk product was returned but the BTSB was unable to fractionate Factor IX from it. In the latter part of 1986 the BTSB were therefore actively seeking to replace the custom fractionation agreement with Travenol. One might have expected that a search for an effective form of viral inactivation against the risk of transmission of NANB hepatitis would have received some consideration in this search. There is very little evidence that it did so.

On the 29 October 1986 Dr. Lane and Mr. Norman Pettit of the Elstree Fractionation Centre visited the BTSB. They had a meeting with Dr. Barry, Dr. Walsh, Mr. Keyes, Mr. Sean Hanratty and Mr. John Cann. Mr. Cann's hand written note of the meeting records the visitors describing their Factor VIII and Factor IX heated at 80 degrees centigrade for 72 hours. The yield described was satisfactory. In respect of Factor VIII he records:-

> "*No evidence non-A non-B in 18 months (previously all developed it). Presumed safety HIV.*"

In respect of Factor IX he records:-

> "*Non-A non-B appears o.k.*"

There was a discussion of the possibility of Elstree fractionating Irish plasma and of the costing involved. It was made clear that because of its own development work Elstree would not be in a position to carry out fractionation of Irish plasma until after 1 January 1988. At that time Elstree had a surplus of Factor IX but not of Factor VIII. The possibility of BTSB purchasing Factor IX from Elstree was discussed. A memo from Dr. Walsh to Mr. Keyes of the 31 October 1986 records having discussed the possibility with Professor Temperley in the following terms:-

> "*He would be happy to take the U.K. product on a 50/50 basis with commercial product for next year provided the price was right. The price quoted by the U.K. people of 20p is too high.*"

Mr. Keyes stated in evidence that there may have been some further contact by telephone with Mr. Pettit who indicated that Elstree would not be prepared to reduce their price. The matter was not pursued any further.

Mr. Keyes paid a visit to the Scottish Blood Transfusion Service on the 25/27 November 1986. In a memorandum of 8 December 1986 of the visit he recorded:-

> "*There appeared to be interest in fractionating our plasma, but such a request would have to be processed through the General Manager of the Common Services Agency.*"

The Tribunal considers the direct communication from the visitors from Elstree in October 1986 of no evidence of non-A non-B hepatitis in 18 months' use of Factor VIII heated at 80 degrees centigrade should have led the BTSB to inquire further as to whether clinical trials had been carried out with the product. They would then have learned of the results of the "surveillance" published in the paper to the Melbourne Symposium if these had not already come to their knowledge. Since Elstree were not in a position to fractionate BTSB plasma until January 1988 at the earliest, the BTSB should have pursued the apparent willingness of Scotland to do so. The extent to which the BTSB pursued that possibility will be examined in the next section dealing with the period after the 1 January 1987.

Although Dr. Walsh asked Professor Temperley if he would be prepared to use Factor IX produced by Elstree, he does not record having advised Professor Temperley that it had any special advantage in terms of NANB hepatitis viral inactivation and the Tribunal does not think it probable he did so. It seems to the Tribunal this was an opportunity missed by the BTSB. Although in 1986 evidence for the efficacy of inactivation of NANB hepatitis by heating at 80 degrees centigrade did not go beyond the careful summary in the paper by Smith & Others to the Melbourne Symposium, it was clearly a better product from this point of view than concentrate heated at 60 or 68 degrees centigrade and the fact that it had been in clinical use without evidence of transmission of non-A non-B was very encouraging.

In November 1986 Mr. Ted Keyes visited the New York Blood Centre. It was one of a number of matters he attended to while on a visit to America. His purpose in visiting the Centre was to obtain information about its administrative and financial organisation. He did not make any inquiry about or receive any information about the solvent detergent method of viral inactivation. One would expect the BTSB at least to have been aware of the development of the solvent detergent method by the New York Blood Centre by November 1986. In a note prepared by Dr. Terence Walsh of his attendance at a meeting of the Committee of Experts of the Council of Europe of 10 June 1986 he noted:-

> "*A new chemical inactivation procedure is being actively developed using a lipid solvent and detergent that appears to inactivate hepatitis B, non-A non-B and HTLV III.*"

The article by Drs. Prince, Horowitz & Others published in the *Lancet* of the 29 March 1986, has already been referred to. It seems surprising that Mr. Keyes' visit to the New York Blood Centre in 1986 should not have been the occasion of some inquiry from the BTSB about the solvent detergent method. This is not to criticise Mr. Keyes. He explained that his interest in the New York Blood Centre at that time was confined to its administrative and financial structure. He might have been accompanied by somebody with medical or scientific knowledge or briefed by such a person to make inquiries about the solvent detergent method. The Tribunal does not want to make too much of this visit by Mr. Keyes to the New York Blood Centre. It may be that his intention of making the visit was simply not known to the relevant medical and scientific personnel within the BTSB. It is referred to as a particular example of a general impression which the Tribunal has formed that the BTSB were not, at this time, actively pursuing inquiries into alternative methods of viral inactivation which might be more effective against the risk of non-A non-B hepatitis.

Part III

Division 1
Chapter 5

The BTSB: The Period after 1 January 1987

There is no evidence that any product produced or distributed by the BTSB and issued after the 1 January 1987 caused the infection with HIV of any persons with haemophilia in this country. 1987, however, started with a letter of 13 January from Professor Temperley to Dr. Walsh informing him of the seroconversion of his patient “Simon”. The Tribunal has already accepted evidence that this seroconversion was probably caused by treatment with an Armour dry heat treated product on 21 February 1986. The Armour product was not distributed by the BTSB in 1986. It was purchased directly by the National Haemophilia Treatment Centre from Armour. The use of the Armour product in 1986 by the National Haemophilia Treatment Centre will be examined when the Tribunal is examining the work of the National Haemophilia Treatment Centre at Part V, Chapter 3. In his letter of the 13 January 1987 Professor Temperley listed the products to which ‘Simon’ had been exposed which included cryoprecipitate, and Factor VIII fractionated by Hemofil from both Irish and non-Irish plasma as well as the Armour product. He suggested in effect that a question mark should be put against all of these products. In his letter of reply of 16 January 1987 Dr. Walsh suggested the Armour product was the most likely cause of the seroconversion, "*In view of the doubts raised re. the heat treatment that Armour applied to their product and its subsequent withdrawal following reported seroconversion*".

The late seroconversion of “Simon” was obviously a very unfortunate reminder of the continuing risk of HIV infection. However, since there were no further HIV infections after 1 January 1987 and since products supplied by the BTSB continued to carry a risk of transmission of non-A non-B hepatitis/hepatitis C and probably caused such infection, it is inevitable that the focus of attention in this period will be on the risk of transmission of non-A non-B hepatitis/hepatitis C. In examining those issues, the Tribunal will always bear in mind that the prevention of transmission of HIV continued to be the paramount concern and that the measures taken were successful in preventing any further HIV seroconversions.

Viral Inactivation Against the Risk of Transmission of NANB Hepatitis/Hepatitis C.

In January 1990 the BTSB began to supply Factor VIII and Factor IX treated with the solvent detergent method of viral inactivation. Between January 1987 and that date the Tribunal believes four critical decisions were taken relevant to the issue of viral inactivation and it intends to examine the work of the BTSB by reference to them. The four decisions were:-

(1) The decision in 1987 to enter into a custom fractionation agreement with Armour, providing Factor VIII heat treated at 68 degrees centigrade for 72 hours by Armour and Factor IX to be heat treated by the BTSB.

(2) The decision to heat the Factor IX at a temperature of 60.6 degrees centigrade for 152 hours.

(3) The decision in June of 1988 to continue the arrangement with Armour for 1989.

(4) The decision to enter into a custom fractionation agreement with Octapharma providing for a solvent detergent product.

The 1987 Custom Fractionation Agreement with Armour.

In late 1986 and early 1987 the BTSB examined a number of possible alternatives to the custom fractionation contract with Travenol. The Wellcome HIV antibody test used by the BTSB was not acceptable to the FDA in the U.S.A. It was therefore not possible for the BTSB to send plasma to the U.S.A. for custom fractionation. This limited their potential choice of fractionators. One of the possibilities referred to was an arrangement with Elstree or Edinburgh. Since Elstree indicated it could not consider such an arrangement before January 1988 and Edinburgh indicated an interest in fractionating BTSB plasma, Edinburgh obviously offered the more immediate prospect. In a memo to the Board of the BTSB on 4 December 1986, Mr. Keyes referred to a proposal to send plasma to Armour and Cutter to have it fractionated on a trial basis. He then went on to say:-

> "*I would expect the entire operation to be completed in April of 1987, and at that point in time I will be recommending to the Board that we seek terms from all major companies for the fractionation of our plasma, and obviously we will also give consideration to the fractionation plants in Edinburgh and Elstree.*"

On the 13 February 1987 Mr. Sean Hanratty visited the Blood Transfusion Service, Belfast. In his report of the visit he described the arrangement which existed between the North of Ireland Blood Transfusion Service and the Protein Fractionation Centre at Edinburgh. Plasma was sent from Northern Ireland to Edinburgh and fractionated with plasma collected in Scotland. Fractionated products, including Factor VIII and Factor IX, were returned from Edinburgh to Northern Ireland but the product returned was not necessarily from Northern Ireland plasma. The Factor VIII was an intermediate purity product heat treated at 68 degrees centigrade for 24 hours. Mr. Hanratty reported the product to be not very satisfactory for clinical use. He then went on to report:-

> "*However, Dr. McClelland informed me that Edinburgh are about to launch a new product with a 30% yield from fresh plasma. This product will have a specific activity of greater than 2.5 and will be heat treated at 80 degrees centigrade for 72 hours.*"

Mr. Keyes prepared a further report to the Board of the BTSB dated the 7 April which was noted at the Board meeting of the 15 April 1987. In his report Mr. Keyes referred to possible future arrangements, including an arrangement with Armour. He also included Scotland as a possibility in the following terms:-

> "*Scotland has changed its procedures quite substantially and can now produce Factor VIII and IX and possibly albumin as well to a standard which would be acceptable for use in this country.*"

A further report from Mr. Keyes of the 12 May 1987 was considered by the Board at its meeting of the 20 May. The memo reported on progress in discussions with Armour but included the following further reference to Scotland:-

> "*Finally, it is our intention to look further at Scotland who have, I am informed, changed their system.*"

There is no written record of any further contact between the BTSB and Scotland at this time. Mr. Keyes referred in evidence to the possibility that there may have been further informal contact between officials from the BTSB and officials from the Protein Fractionation Centre in Edinburgh, but he accepted that he himself did not personally follow up the possibility of an arrangement with Scotland at the time.

The Tribunal finds the failure of the BTSB to pursue the possibility of an arrangement with the Protein Fractionation Centre, Edinburgh, to fractionate plasma for the BTSB inexplicable. The willingness of Scotland to consider such an arrangement had been recorded in November 1986. The BTSB knew of the change in Edinburgh to a high purity Factor VIII heat treated at 80 degrees centigrade for 72 hours. They were aware from Elstree of the absence of NANB infection following clinical use of concentrate heated according to that protocol. The explanation offered by Mr. Keyes in evidence for not dealing with Scotland was that they were unable to fractionate Irish plasma separately and, therefore, to provide concentrates to the BTSB which had been fractionated from Irish plasma. Mr. Keyes stated that this issue was raised during the visit by the BTSB to the SNBTS in November 1986 and that the BTSB were told it would not be possible to fractionate Irish plasma separately. The Tribunal has a number of difficulties with this explanation. If it was an insuperable difficulty, communicated to the BTSB in November 1986, why did Mr. Keyes' subsequent reports to the Board continue to refer to the possibility of an arrangement with Scotland? It does not seem that this difficulty was reported to or considered by the Board. Dr. Foster, of Edinburgh, gave evidence that at one time the Protein Fractionation Centre did fractionate plasma collected in Northern Ireland and in a number of Scottish regions discretely. They did so because different methods of collection were used and they wanted to ascertain whether this affected the final product. When they had obtained the information they wanted, they stopped fractionating discretely, having no reason to continue. Dr. Foster stated that there would have been some extra difficulty and trouble from the point of view of the Protein Fractionation Centre in fractionating Irish plasma discretely from Scottish or Northern Ireland plasma but that it would have been possible. The Tribunal thinks it probable that any indication of inability or unwillingness by Edinburgh to fractionate Irish plasma discretely during the November visit by the BTSB to Scotland was made in general terms. It did not result in the BTSB abandoning the possibility of entering into an arrangement with Edinburgh. If the BTSB had pursued the matter seriously, it seems from Dr. Foster's evidence, Edinburgh would probably have agreed to fractionate BTSB plasma discretely. Even if this were not so, and the only arrangement on offer from Scotland was that which applied at the time with Northern Ireland the possibility of an arrangement with Scotland should still have been considered. If the alternative was to have Factor VIII and Factor IX fractionated from Irish plasma,

heat treated at 60 or 68 degrees centigrade, there was a balance of risk issue in which the advantages of having product heat treated at 80 degrees centigrade would have to be measured against any disadvantage in having it fractionated from plasma from Northern Irish or Scottish voluntary donors, collected according to similar procedures and subjected to the same tests as those used by the BTSB. There is no indication that the BTSB ever pursued the possibility of an arrangement with Scotland to the extent of considering such a balance of risk. The Tribunal believes the BTSB ought to have pursued the possibility of an arrangement with Edinburgh and their failure to do so represented a significant missed opportunity.

The custom fractionation agreement entered into by the BTSB with Armour in 1987 provided for Factor VIII to be fractionated by Armour from plasma supplied by the BTSB and heat treated in the lyophilised state at 68 degrees centigrade for 72 hours. It was a protocol which was generally regarded as being effective against the risk of HIV infection. Cutter Factor VIII, heat treated to that protocol, was widely used in the United Kingdom, the United States and this country at the time. It was regarded as being different from the discredited Armour protocol of 60 degrees centigrade for 30 hours. There do not seem to have been published results of clinical trials conducted according to the I.C.T.H. recommendations. It would not generally have been regarded as providing effective protection against the risk of transmission of NANB hepatitis although it probably reduced the incidence of transmission. It was not regarded by the BTSB as providing full protection against the risk of transmission of NANB hepatitis.

Apart from the possibility of an agreement with Edinburgh, the Tribunal does not think it probable that in 1987 there was available to the BTSB a fractionator who would have fractionated the national requirement for Factor VIII from Irish plasma using a system of viral inactivation proven to be more effective against the risk of transmission of NANB hepatitis. Heating in the lyophilised state at 80 degrees centigrade was not applied at that time by the commercial fractionators. Evidence for the efficacy of pasteurisation in inactivating NANBH was published in the article of April 1987 in the *New England Journal of Medicine* by Schimpf, Mannucci & Others, already referred to, but the problem of yield remained. The Tribunal believes it would have been beyond the capacity of the BTSB to supply sufficient plasma to meet the national requirement of Factor VIII from a pasteurised product. Although there were bodies in Europe using the solvent detergent method under licence from the New York Blood Centre, there was no evidence they were offering custom fractionation at this time. There was also not sufficient published evidence of the clinical efficacy of the solvent detergent method to make it reasonable to suggest that the BTSB should have committed the entire national production of Factor VIII and Factor IX to that method in 1987.

Although it may not have been within the capacity of the BTSB to have the national requirement for Factor VIII fractionated from Irish plasma using a system of viral inactivation effective against non-A non-B hepatitis, the Tribunal believes it was within its capacity to obtain and supply sufficient quantities of Factor VIII and Factor IX effectively protected against the risk of transmission of NANB hepatitis to treat previously untreated patients or those who had only previously received very little treatment, Pasteurised Factor VIII was commercially available. Pasteurised Factor IX may not have been commercially available in 1987 but the BTSB had been offered Factor IX heated at 80 degrees by Elstree in October 1986. At a meeting on the 19 June 1987 between Armour and representatives of the BTSB, including Professor Temperley who by then had been appointed to the Board of the BTSB, reference was made to the possibility of Armour arranging for Behring to produce a small quantity of pasteurised Factor VIII fractionated from Irish plasma. That possibility doesn't seem to have been pursued.

The Tribunal is not overlooking the fact that protection against the risk of transmission of HIV remained the paramount consideration. However, by 1987 the Tribunal believes the BTSB should also have been seeking protection against the risk of transmission of NANB hepatitis. If it wasn't

possible to achieve this for the standard Factor VIII, the Tribunal believes the BTSB ought to have obtained and provided a special product for previously untreated patients. Treating doctors had a responsibility in this area and the Tribunal will examine their work in Part V, Chapters 1 to 7. The Tribunal, however, believes the BTSB had a role to play as supplier, particularly as supplier of concentrates to be used outside the National Haemophilia Treatment Centre.

The Decision to Heat Treat Factor IX Returned by Armour at 60.6 Degrees Centigrade for 152 Hours.

On the 19 August 1987 Mr. Sean Hanratty wrote to Mr. Alan Tate of Travenol Laboratories asking if Travenol would permit the BTSB to apply Travenol's heat treatment regime to the Factor IX concentrate returned by Armour to the BTSB. No written reply to that letter has survived in the records of the BTSB but an entry in the minutes of the BTSB Board for the 15 December 1987 recorded that an agreement had been reached with Travenol which allowed the BTSB to use the Travenol patent for Factor IX production. Ms. Cunningham described in evidence having been given by Mr. Sean Hanratty a document from Travenol containing the heat treatment protocol to be used. She stated the protocol involved heating the lyophilised concentrate in air at 60.6 degrees centigrade for 152 hours. In the course of her evidence Ms. Cunningham's attention was drawn to a review article by Kasper & Others, "Recent Evolution of Clotting Factor Concentrates for Haemophilia A & B", *Transfusion* Volume 33 No. 5 1992 in which the Travenol/Hyland/Baxter dry-heat treatment protocol licensed in the U.S.A. in 1984 and 1986 is described as 60 degrees centigrade for 144 hours. Ms. Cunningham suggested the protocol of 60.6 degrees centigrade for 152 hours in the Travenol document supplied to her may have been a modification by Travenol of the protocol which was originally licensed. The Tribunal thinks this a likely explanation. It accepts that Ms. Cunningham applied the heat treatment protocol supplied to her by Mr. Hanratty. The Tribunal also considers the only probably effect, if any, of a variation in a heat treatment regime from 60 degrees centigrade for 144 hours to 60.6 degrees for 152 hours would be to increase its efficacy in viral inactivation.

In the Tribunal's view the Travenol protocol of 60.6 degrees for 152 hours would have been regarded as approximately equivalent in its efficacy in viral inactivation of both HIV and NANB hepatitis to the Cutter protocol of 68 degrees centigrade for 72 hours. It was regarded as being effective against the risk of HIV infection. There were no published results of clinical studies carried out according to I.C.T.H. recommendations. It was not generally regarded as providing protection against the risk of NANB hepatitis, although it probably reduced the incidence of transmission. It was not regarded by the BTSB as providing full protection against the risk of transmission of NANB hepatitis.

Armour initially sent a partially processed batch of Factor IX to Pelican House for finishing but this proved unsatisfactory. They then sent finished lyophilised Factor IX which was heat treated by the BTSB. Operating within that system, the Tribunal does not believe there was available to the BTSB a system of viral inactivation to be applied to the lyophilised Factor IX which was proven to be more effective against the risk of transmission of NANB hepatitis. Pasteurisation and solvent detergent treatment could not be applied to a finished lyophilised product. Although heat treating to 80 degrees centigrade was applied to a lyophilised product, it was essential to that system that special steps be taken in the fractionation process to produce concentrate capable of withstanding heating to 80 degrees centigrade.

The Decision in June 1988 to Continue the Arrangement with Armour for 1989.

In December 1987 six haemophilia A patients in Canada were reported to have seroconverted as a result of treatment with Armour Factor VIII dry-heat treated according to the original Armour protocol of 60

degrees centigrade for 30 hours. Armour withdrew its product heated according to that protocol. On 27 January 1988 C. R. Bishop of Armour wrote to Mr. Keyes with copies to Dr. Walsh and Mr. Hanratty informing him that Armour intended to discontinue the production of conventionally fractionated products and to switch entirely to fractionation using monoclonal antibody techniques. The letter stated that Armour would not be prepared to continue the existing custom fractionation agreement with the BTSB beyond the end of 1988 and demanded, as a condition of Armour continuing the arrangement until that date, that the BTSB should furnish Armour with an indemnity in respect of "liability in respect of HIV, hepatitis and other viral infection".

No reference was made in the letter to the Canadian seroconversions or withdrawal of the Armour product. The BTSB Board were aware of the reported seroconversions. There is a record of Professor Temperley having referred to them at a Board meeting of Wednesday 20 January 1988. It seems likely the seroconversions played a part in prompting the Armour letter of the 27 January. Although the seroconversions were associated with product dry-heat treated at 60 degrees centigrade for 30 hours and not the 68 degrees centigrade for 72 hours protocol applied in the custom fractionation agreement, the declared unwillingness of Armour to continue that agreement and their demand for an indemnity was a clear and worrying indication of concern on their part about the safety of the product. The Armour letter also created a serious problem for the BTSB in seeking to supply the annual requirement for Factor VIII for 1989.

On 11 May 1988 Mr. Keyes prepared a memorandum for the chairman and members of the Board of the BTSB on blood products. He referred to the policy of self-sufficiency:-

> "*The policy of the Minister for Health is that blood products, particularly Factor VIIIc and Factor IX should be obtained from plasma collected in this country and that policy is in line with World Heath Organisation policy.*"

He went on to review the history of the contracts with Travenol and Armour and referred to the proposed new monoclonal products:-

> "*These products have the advantage of being very highly purified and it is believed that the method of production, combined with the viral inactivation procedures used, virtually eliminates any risk of viral disease transmission.*"

He then set out three options open to the Board:-

> "***(1) Continue production of Factor VIIIc.***
> *This may be possible for a very limited time with Armour, but when the factory changes over to Monoclonal derived Factor VIIIc, Factor VIIIc will cease. I am not aware of any other plant in Europe which will measure up to Armour's efficiency in producing Factor VIIIc, but this can be explored. We do not have access to the United States for this purpose. Continuation of Factor VIIIc may present product liability problems.*
>
> ***(2) Change to Monoclonal derived Factor VIIIc.***
> *The cost of Monoclonal derived Factor VIIIc will be at least double the cost of Factor VIIIc. Additional plasma may also be required as I am informed the yield is lower, but this may be compensated for by improved patient response to this treatment.*
>
> ***(3) Change to pasteurised product.***
> *It is my belief that a policy of self-sufficiency could not be achieved with pasteurised product.*"

(The Memo forms Appendix 22.)

It was obviously appropriate that the Board of the BTSB should carry out a full review of arrangements for the provision of concentrates in response to the Armour letter. In the Tribunal's view there were two important omissions in the options referred to by Mr. Keyes. There is no reference to the possibility of having Irish plasma fractionated at Elstree or Edinburgh and heated at 80 degrees centigrade. The Tribunal has already expressed the view that opportunities were missed at earlier stages to pursue this option. There is no evidence of any contact having been made by the BTSB with either Elstree or Edinburgh in 1988. The Tribunal finds this quite inexplicable. Edinburgh had earlier indicated an interest in fractionating BTSB plasma and Elstree had indicated that such an arrangement might be considered after January 1988. It would seem to the Tribunal that such an arrangement was an obvious option to be considered in response to the Armour letter.

While a less obvious option for the BTSB in 1988, the Tribunal also finds it surprising that there was no evidence of the BTSB having investigated the possibility of solvent detergent viral inactivation. The BTSB Board minutes of 16 March 1988 record Professor Temperley having referred to developments by Cutter of that method. There was an increasing use of solvent detergent by European fractionators under license from the New York Blood Centre during 1987 and 1988. Although the *Lancet* article containing clinical evidence for the effectiveness of solvent detergent viral inactivation was not published until the 23 July 1988, there had been an earlier publication in *Thrombosis and Haemostasis* in 1987 and the results of the study published in July 1988 would presumably have been known and ascertainable by the BTSB if they had pursued inquiries about the solvent detergent method in the first half of 1988.

On the 16 May 1988 the U.K. Haemophilia Reference Centre Directors drew up a paper entitled, "Recommendations on choice of therapeutic products for the treatment of non-inhibitor patients with Haemophilia A, Haemophilia B or Von Willerbrands disease". The paper described its own purpose as being, "*To present a consensus view of the U.K. Haemophilia Reference Centres Directors on the relative merits of therapeutic products which are either currently available in the U.K., or likely to become so in the near future.*" The Tribunal regards the paper as an important source of prevailing opinion amongst U.K. treating doctors. A copy of the paper was sent to the BTSB and to Professor Temperley.

The paper addressed the issues of HIV and NANB in the following terms:-

> "*Recognition of HIV infection/Aids as a hazard of blood product therapy for haemophilia has caused a heightened awareness of the general problem of transfusion-transmitted disease, particularly as regards non-A, non-B hepatitis (NANBH). Whilst it is clear that risk can never be completely eliminated, major advances have been made in risk reduction, and physicians are faced with the problem of choosing between therapeutic products of possibly differing risks.*"

It went on to review products available and the evidence for their viral safety, grouping products into first, second and third generation. A difference was made between Elstree Factor VIII and Factor IX where it was stated:-

> "*Virgin patient studies "soft" data suggests minimal risk of NANBH transmission*"

and Edinburgh Factor VIII and Factor IX where it was stated:-

> "*Virgin patients studies: insufficient data*".

The recommendations for treatment started with general observations including the following:-

"*We regard it as self-evident that all patients should be treated with the safest possible therapeutic products. HIV and the hepatitis viruses cause serious and often fatal disease, and every effort should be made both to prevent initial infection and re-exposure. In attempting to meet this ideal, however, there remains several problems.*"

The paper went on to state that the data on which judgements should be based to differentiate risks between different products was to a large extent unavailable and that not all products listed were easily obtainable. It then stated,

"*If there are supply problems, patients at highest risk (e.g. those previously unexposed or only lightly exposed to blood products) should take priority in the use of products perceived to carry the least risk of viral transmission. It should be appreciated that it is not known whether re-exposure to HIV or hepatitis viruses in an already infected patient causes any additional hazard.*"

It was stated that Monoclonal Factor VIII was advocated by its proponents,

"*not so much because of its presumed lack of viral contamination, but because of its possible immune modulating effect in anti-HIV sero-positive patients.*"

The directors went on to say,

"*We do not consider current evidence sufficiently strong to justify adoption of such products as routine therapy, outside the context of formalised clinical trials.*"

The specific recommendations for haemophilia A patients with little or no previous exposure to blood products were, in descending order, NHS product (heated at 80 degrees), Haemate P (pasteurised) and Profilate HT (heated in n-Heptane). For multi-transfused patients with haemophilia A, it was recommended that any of those products plus Koate HT (dry-heated at 68 degrees centigrade for 72 hours) might be used.

(The paper forms Appendix 23.)

Mr. Keyes' memorandum on blood products was prepared for a Board meeting of the 18 May 1988. On that day consideration of Mr. Keyes' report was deferred to the June meeting of the Board because Professor Temperley and another Board member were unable to be present. Professor Temperley found himself unable to attend the Board meeting on the 15 June 1988. He, therefore, set out his views in a letter of the 14 June 1988 to Mr. Keyes which was also copied to the chairman and members of the Board. *(The full text of this letter forms Appendix 24.)*

Professor Temperley addressed the issue of Factor VIII production for 1989. It is clear from his letter that he had available to him the U.K. Haemophilia Reference Centre Directors' recommendations and drew heavily on that paper for the following general summary of the situation:-

"*All products mentioned are considered to have a negligible risk of HIV infection. Factor VIII concentrates, following the Aids disaster, may be regarded as belonging to first, second and third generation products. The present product using Irish plasma fractionated by Armour is heat treated for 72 hours at 68 degrees centigrade and belongs to the first generation group. This group is being rapidly removed from the world market partially because of previous HIV disasters and also because dry heat treatment seems inadequate to destroy the non-A, non-B hepatitis (NANBH) virus. There are likely to be commercial considerations also.*

Only one first generation product has retained its reputation in relation to HIV infection and remains on the market – Cutter Koate HT, a product which until recently was used intensively by the National Haemophilia Treatment Centre. The heat treatment conditions of this product are those insisted upon by the Board and the Centre when the recent contract to fractionate Irish plasma was granted to Armour ...

Second generation products are either "wet" heat treated, or are dry heat treated to 80 degrees centigrade, rather than 68 degrees, as for the first generation products, or are solvent/detergent treated. These products decrease the risk of NANBH infection. Of these Haemate P (Bohringer), a pasteurised product, and NHS 8Y (heated to 80C) have been given adequate trials. The former is available commercially and will be used by the National Haemophilia Centre for infants and children who have not come in contact with blood products …

Third generation products are monoclonal purified (Armour and Baxter). They are as yet unlicensed and still involved in clinical trials. They would appear to be associated with minimal risk of NANBH transmission."

Professor Temperley referred to the fact that commercially available pasteurised products were at least twice the price of dry heat–treated products and while the price of monoclonal products was not yet known it was likely to be no less. He then continued:-

"*The Board should understand that in the present period of financial stringency the hospitals could not be expected to meet a doubling of the cost of concentrates in 1989. Some balance will have to be struck between cost and the infection dangers associated with blood products. Using Cutter Koate HT and the Irish plasma/Armour product no new HIV seroconversion has occurred for at least twelve months. Virtually all of our treated haemophiliacs have had NANBH. There is no definite evidence that crude products such as Irish plasma/Armour FVIII produces immune deficiency despite their large content of protein.*"

Professor Temperley suggested the Board should seek to persuade Armour to custom fractionate Factor VIII for 1989 in the same manner as for 1988. He concluded his letter:-

"*This would have my support as the Director of the National Haemophilia Centre. For "virgin patients" (i.e. usually infants) Haemate P will be used protecting them from NANBH.*"

The minutes of the Board meeting of the 15 June 1988 recorded that Professor Temperley's letter was discussed and, "*after detailed consideration, the Board approved the recommendation of Professor Temperley*" that Armour should be asked to continue the present arrangement to the end of 1989.

Professor Temperley referred to the high cost of commercial pasteurised products where Mr. Keyes, in his memorandum had referred to the difficulty of achieving self-sufficiency with pasteurised product, presumably resulting from the poor yield and the large volume of plasma which would have been required. There were also difficulties with supply of commercial pasteurised product and it seems unlikely it would have been possible to obtain a sufficient quantity of commercial pasteurised Factor VIII to supply the national requirement. The Tribunal does not think it was feasible in 1988 to have pasteurised Factor VIII, whether commercial or fractionated from Irish plasma, as the standard national product.

In his letter Professor Temperley did not favour the option of changing to monoclonal product. He referred to the financial burden which would be imposed on hospitals. In evidence Professor Temperley stated the monoclonal product was then somewhat unproven in terms of viral inactivation. He referred to the fact that the Armour monoclonal product was then heated at 60 degrees centigrade for 30 hours, the protocol discredited for treating conventionally fractionated Factor VIII in the lyophilised state. The U.K. Directors were also cautious in their statement about the claims for monoclonal product. In the circumstances the Tribunal thinks it is understandable that Professor Temperley did not then advise the BTSB to pursue monoclonal product.

If the problem is considered within the parameters set in Mr. Keyes' memo of the 11 May 1988, that Factor VIII and Factor IX concentrate should be obtained from Irish plasma and by one of the three alternative methods outlined, continuing the existing arrangement with Armour was the only remaining option. In advocating that course, Professor Temperley made it absolutely clear that first generation dry heat treatment did not inactivate the NANB hepatitis virus and that there were products available which were capable of doing so. This was expressly stated in his descriptions of first and second generation products and implicitly in his statement that virtually all treated persons with haemophilia had had NANBH and his two references to using Haemate P to protect "virgin patients" or children from infection with NANBH. In the Tribunal's view, by June 1988, the Board of the BTSB ought to have been distinctly unhappy and uncomfortable at the prospect of continuing to supply a product treated with a system of viral inactivation believed to be inadequate to destroy the NANB hepatitis virus. It ought to have looked for alternatives. Pointers to possible alternatives already discussed were contained in Professor Temperley's paragraph on second generation products. In addition to pasteurised products he referred to treatment by solvent detergent and heating at 80 degrees. It is noteworthy that he stated that both the pasteurised product and the NHS 8Y had been given adequate trials. He did not express any reservation of qualification about the clinical evidence available for the efficacy of heating at 80 degrees centigrade.

The Tribunal believes the BTSB ought to have investigated the solvent detergent method and the possibility of an arrangement with Elstree or Edinburgh in preparation for the review carried out at the Board meeting on the 15 June 1988. Since they had not done so, they ought to have done in response to Professor Temperley's letter. There is no evidence they contacted Elstree or Edinburgh at this time. They did make contact with Octapharma within a matter of weeks and investigated the possibility of using solvent detergent viral inactivation and their work in that regard will be examined in the next section.

Professor Temperley wrote his letter of the 14 June in a dual capacity – as a member of the Board of the BTSB giving the benefit of his knowledge and advice to other Board members but also specifically as Director of the National Haemophilia Treatment Centre. It was in the latter capacity that Professor Temperley referred to financial considerations. It was the hospitals, not the BTSB, which he stated could not be expected to meet a doubling of the cost of concentrates in 1989. He also specifically stated that the policy he advocated would have his support, "*as the Director of the National Haemophilia Centre*". It was entirely proper and reasonable that the advice and wishes of the director of the National Haemophilia Treatment Centre should carry considerable weight with the BTSB in the matter of blood products for persons with haemophilia. However, the BTSB ought also to have brought its own expertise to bear. At this time the BTSB seems to have relied to a considerable extent upon Professor Temperley's contributions as a Board member thus creating a somewhat circular situation.

The Tribunal believes, from 1987, the BTSB ought to have had a policy of providing a special product to previously untreated patients or those who had only previously received very little treatment. Such a policy was fundamental to the thinking behind Professor Temperley's letter. If the

BTSB continued to provide first generation dry heat treated product, it was essential they should obtain and make available appropriate special product for previously untreated patients. The Tribunal again believes the BTSB had a particular responsibility in this regard to patients who were being treated outside the National Haemophilia Treatment Centre. The BTSB might have presumed from Professor Temperley's letter of the 14 June that he would have such a policy in operation for haemophilia A patients in the National Haemophilia Treatment Centre although it might have been expressly discussed with him. Professor Temperley's letter referred only to Factor VIII. Mr. Keyes' memo had referred to blood products and to both Factor VIII and Factor IX. The decision recorded in the minutes of the 15 June 1988 was to ask Armour to continue to produce Factor VIII concentrate in accordance with the existing arrangements. The existing arrangements for Factor IX were also continued without receiving any recorded separate consideration. The heat treatment protocol applied by the BTSB to Factor IX of 60.6 degrees centigrade for 152 hours provided no better protection against NANB hepatitis than dry heat treatment at 68 degrees centigrade for 72 hours. A similar policy of providing special product for previously untreated patients should have been adopted by both the BTSB and the National Haemophilia Treatment Centre.

The Tribunal will examine the special treatment provided for previously untreated haemophilia A patients by the National Haemophilia Treatment Centre in Part V, Chapter 4. No special treatment was provided by the National Haemophilia Treatment Centre for previously untreated patients with haemophilia B. No special policy was adopted by the BTSB to provide special products for previously untreated patients whether with haemophilia A or haemophilia B.

In the Tribunal's view the BTSB ought to have made greater efforts in the first half of 1988 to find an alternative to its existing arrangements with Armour for Factor VIII and Factor IX. These efforts should probably have focused on the possibility of an arrangement with Elstree or Edinburgh. When the BTSB decided in June 1988 to continue the existing arrangements with Armour the Tribunal believes they should have obtained and made available suitable special product for the treatment of previously untreated or previously infrequently treated haemophilia A and haemophilia B patients, and that they failed to do so.

The Decision to Enter into a Custom Fractionation Agreement with Octapharma.

Contact was established between Dr. Terence Walsh and a representative of Octapharma in July of 1988. A letter from a representative of Octapharma to Dr. Terence Walsh of the 21 July 1988 set out proposals for custom fractionation of Factor VIII and Factor IX from Irish plasma using solvent detergent viral inactivation. At that time, it was proposed fractionation should be carried out at the C.R.T.S., Lille, France. It was obviously to the credit of Dr. Walsh and the BTSB that, notwithstanding the decision taken by the Board to seek to continue the Armour contract for 1989, contact was made with Octapharma and the possibility of a custom fractionation arrangement providing solvent detergent product pursued. The initial contact was followed up by a visit by representatives from the BTSB including Professor Temperley to Lille and Norway to obtain information about the Norwegian custom fractionation contract with Octapharma. In November 1988 a decision was taken to send a batch of plasma to Octapharma for trial fractionation. In the meantime, Armour had agreed to continue custom fractionation under the existing arrangements for 1989 and, to ensure continuity of supply, the arrangement with Armour continued into 1989. Factor VIII and Factor IX fractionated using solvent detergent viral inactivation from the trial batch were returned to the BTSB in January 1989. The yields from this trial batch were disappointing and less than those achieved in fractionating plasma from Norway.

On the 21 June 1989 the Board of the BTSB considered a report from Mr. Keyes dealing with custom fractionation for the remainder of 1989 and 1990. Professor Temperley was not present as

he was away on leave. The following contributions were recorded in the minutes from Dr. Terence Walsh (Chief Medical Consultant) and Professor J. Flynn, a Board member:-

> "*The Chief Medical Consultant advised the Board that in his opinion the product from Octapharma was a better product than the one from Armour from the point of view of viral safety and that his advice to Professor Temperley and his colleagues would be to use that product. Professor J. Flynn strongly supported that view and said that the Board could be faced with claims in respect of non-A non-B hepatitis unless it provides a satisfactory product.*"

At a meeting on the 11 July 1989 between Professor Temperley, Dr. Walsh and other representatives of the BTSB a decision was taken that a contract arrangement would be made with Octapharma for 1990 and that plasma would be sent to Octapharma from September 1989 onwards. This decision was approved at a Board meeting of the 2 August 1989. The last batch of plasma sent to Armour for custom fractionation was sent before August 1989. From August 1989 onwards plasma was sent to Octapharma for custom fractionation. Some dispute apparently arose between Octapharma and Lille and the custom fractionation was carried out in Vienna. Factor VIII and Factor IX custom fractionated from Irish plasma at Vienna using solvent detergent viral inactivation became available from January 1990 onwards. During 1990 there were occasional shortages of supply of concentrate from the custom fractionation arrangement with Octapharma. From time to time it was supplemented by concentrate obtained by the BTSB from Octapharma which was solvent detergent treated but had been fractionated from German plasma.

There is no evidence that any person with haemophilia in Ireland was infected with NANB hepatitis/hepatitis C as a result of treatment with solvent detergent product. Unfortunately, in 1992 there was an outbreak of hepatitis A among Irish persons with haemophilia which was believed to be associated with the Octapharma product. The Tribunal's terms of reference neither entitle nor require it to inquire into this infection with hepatitis A and it has not done so. There is no evidence of any of the products provided for treatment of persons with haemophilia in this country since 1992 having caused any hepatitis C infection. As already stated, neither is there any evidence of HIV infection having been caused to any persons with haemophilia in this country as a result of treatment with products supplied or distributed by the BTSB in the period after the 1 January 1987.

The Tribunal believes custom fractionation using solvent detergent viral inactivation was an appropriate option for the BTSB to pursue in 1988. The first product from this arrangement, apart from concentrate from the trial batch, was delivered to the BTSB in January 1990 – eighteen months after the first contact with Octapharma. The Tribunal appreciates the difficulties which arose from the initially poor yield on the trial batch and the change of fractionators from Lille to Vienna and the lead-in time which would inevitably be required to establish a new system of custom fractionation, but believes it ought to have been possible to proceed more speedily. The Tribunal believes a reasonable period from first contact to product becoming available would have been six months to a year rather than eighteen months. As already stated, the Tribunal believes the BTSB ought, during that period, as an absolute minimum, to have provided special Factor VIII and Factor IX effectively inactivated against the risk of transmission of non-A non-B hepatitis/hepatitis C for persons with haemophilia A and haemophilia B who were previously untreated or had only been infrequently treated. The articles, already referred to, showing respectively the clinical efficacy of solvent detergent and heating at 80 degrees centigrade in inactivating NANB hepatitis virus were published in June and October 1988. Since the BTSB were able to obtain supplementary supplies of solvent detergent treated concentrate fractionated from German plasma during 1990, it seems reasonable to assume it would also have been possible for them to obtain similar product for previously untreated patients during 1989.

At the beginning of 1989 the BTSB were contemplating a custom fractionation agreement with Octapharma which would produce concentrate believed to be effectively protected against the risk of transmission of HIV and NANB. It must have been clear to them that it would be some time before product from such an arrangement would be available. The Tribunal believes the BTSB in those circumstances ought to have considered temporarily abandoning self-sufficiency in favour of obtaining concentrate which had been effectively inactivated. It seems to the Tribunal they should at least have explored the possibility of obtaining effectively inactivated concentrate to be used until product from the Octapharma custom fractionation agreement became available. There is no evidence that the BTSB investigated this possibility. There may well have been difficulty about supply and price involved in obtaining the entire national requirement in a second or third generation product, especially for Factor VIII. The Tribunal also understands the real value of self-sufficiency in blood products, the energy which had been devoted by the BTSB in attempting to achieve it and that it would not readily be abandoned, even temporarily. It is obvious from the minutes of the BTSB Board of June 1989 that the BTSB were, properly, extremely uncomfortable that the product they were supplying was capable of causing non-A non-B infection. In the Tribunal's view this ought to have led the BTSB to investigate a temporary alternative to self-sufficiency. There is no evidence it did so.

Surrogate Testing for NANB Hepatitis

In 1989 a virus, named hepatitis C, was identified as the cause of the majority of cases of NANB hepatitis. The first–generation testing kits for donor screening for the presence of hepatitis C antibodies were developed in 1989. Prior to that date there was no specific test to screen donations of blood or plasma for NANB hepatitis. In the absence of a specific test, consideration was given to the use of surrogate tests, designed to identify markers thought likely to indicate the presence of NANB hepatitis. ALT (Alanine Aminotransferase), a test of liver enzyme function, and anti-HBc, a test for hepatitis B core antibody, were the surrogate tests considered for donor screening for NANB hepatitis. In ALT screening, ALT levels of each donation were measured and those which were higher than a certain specified level above normal were rejected. In some of the rejected donations the raised ALT levels would have been caused by the presence of NANB hepatitis. The identification of such infected donations was the benefit of ALT testing. However, not all raised ALT levels were due to non-A non-B hepatitis. There were many other possible causes. Conversely, and perhaps more seriously, a donation of blood or plasma could be infected with NANBH without having significantly raised ALT levels. ALT testing was therefore very non-specific – it screened out some donations which were infected with NANBH but also others which were not and it did not detect all donations infected with NANBH. Anti-HBc screening identified donors who had previously been exposed to hepatitis B. Its usefulness as a surrogate test for NANBH was therefore entirely dependent on the hypothesis that persons who had been exposed to hepatitis B might also be infected with NANB hepatitis. It was also very non-specific. Not all anti-HBc positive donations would have been infected with NANBH and conversely, and again more seriously, not all donations infected with NANB hepatitis would be anti-HBc positive.

International Developments

In April 1981 the results of a study carried out in the United States between 1974 and 1979, the Transfusion Transmitted Virus Study, (TTVS) were published in an article in the *New England Journal of Medicine*. The authors claimed their study suggested about 40% of the cases of non-A non-B post-transfusion hepatitis observed in the study could have been prevented if donations had been discarded where ALT levels were raised above a cut off which would have resulted in 3% of all donations being rejected. In the same edition of the *New England Journal of Medicine*, the

conclusions of the TTVS group were challenged by Dr. Paul Holland of the National Institution of Health (N.I.H.) and others. A vigorous medical and scientific debate ensued, especially in the United States in the period 1981 to 1986. The debate involved numerous studies and articles but, in very broad summary, the TTVS group advocated the introduction of ALT screening of donations and were opposed to the introduction of anti-HBc screening. The N.I.H. group took the contrary view. They advocated the introduction of anti-HBc screening and were opposed to ALT screening. Neither group advocated the introduction of both. A meeting of the American Association of Blood Banks (A.A.B.S.) in 1986 nonetheless decided to recommend screening of whole blood donations by both ALT and anti-HBc testing. The A.A.B.S. subsequently recommended that ALT, but not anti-HBC, testing should be carried out on plasma intended for use in pooled concentrates. The rationale for this distinction was, apparently, a belief that the presence of some anti-HBc positive plasma in a pool provided some protection against the risk of hepatitis B infection.

Donations of whole blood intended for use as single units and donations of plasma intended to be combined into large pools to produce concentrates provided two very different contexts for the application of surrogate testing. In the case of whole blood there was no opportunity for viral inactivation. If a system of surrogate testing could identify some, though not all. infectious donations there would be an immediate, though limited, benefit. If some infectious donations of whole blood were rejected, the individuals who would have received the rejected infectious donations would avoid exposure to infection. In the case of plasma, intended to be combined in pools to produce concentrate, the situation was different. If surrogate testing only detected some infectious donations, it obviously followed that some undetected infectious donations would get through the screening process and infect the entire pool. It is understandable that for pooled concentrates the primary focus remained on viral inactivation. Proponents of surrogate tested argued that by reducing the number of infected donations in a pool of plasma the viral load would be reduced, improving the protection provided by viral inactivation of limited or partial effectiveness. Those who doubted the benefits of surrogate testing were sceptical of the detection rate of infectious donations claimed by its proponents and doubted whether it had anything more than a marginal effect on the viral load of an entire pool of plasma.

Developments in Europe

There was no uniform opinion or practice on surrogate testing for NANB hepatitis in Europe. In 1986 the Committee of Experts on Blood Transfusion and Immunohaematology sent a questionnaire on the issue to member states. The results of the questionnaire were made available for a meeting in May 1987. They showed variable practice with some countries using neither surrogate test, some using one or other and a few using both ALT and anti-HBc. A note attached to the results of the questionnaire summarised them as follows:-

> *"Although some replies are still missing, it can be seen from the tables that the issue is in general being given careful consideration by most blood transfusion services; study groups have been appointed and research groups are under way to assess the value of "surrogate" testing. The general impression is that the NANB hepatitis incidence is considered rather low, notwithstanding its variance from region to region: this casts doubts on the cost/effectiveness of the introduction of such tests. Some countries, however, indicate that these tests will eventually be introduced."*

At a meeting of the European Health Committee in November 1987 Dr. Van Aken reported on the discussions which took place on surrogate testing at the Committee of Experts Meeting in May 1987 in the following terms:-

> "***Testing for non-A non-B hepatitis.***
> *The committee discussed at length this item and the effectiveness of surrogate testing in the countries where they had been introduced. It was felt that the committee could not give a general recommendation on the routine introduction of such tests and that individual countries which have to assess the situation locally and decide on action to be taken. In some countries it could lead to a severe depletion of blood donors and compromise the blood supply. Where non-specific testing is introduced provision will have to be made for interviewing, counselling and follow up of donors testing positive.*"

The situation in Europe therefore differed from that in America. In America ALT screening was introduced in 1986 and anti-HBc screening of whole blood donations in 1987, although the debate on the effectiveness of the screening and its benefits when compared with the cost in terms of reducing the blood supply through donors being rejected or deferred continued. In Europe there was neither a consensus of opinion nor practice.

Events in Ireland

In September 1986 the BTSB decided to carry out a pilot study to examine the impact of ALT and anti-HBc screening of blood donations. The Tribunal believes this was an entirely appropriate and necessary step for the BTSB to take before contemplating the introduction of surrogate testing. It could not be assumed that the application of ALT or anti-HBc screening would result in the same rejection or deferral rate in Ireland as it had in other countries. The results of the pilot study were published in a letter to the *Lancet* of the 30 June 1987 from Messrs. Donnellan, Keating and Dr. Walsh of the BTSB. The letter reported that in a sample of 4,316 random blood donors the application of ALT screening using the cut off point recommended by the AABB resulted in a rejection or deferral rate of 2.73% and the application of anti-HBc screening resulted in a rejection rate of 1%. Only two donors (0.05%) were positive on both ALT screening and anti-HBc. This latter result, which was consistent with the results in American studies of the application of both tests, underlined their non-specific nature. If both tests were capable of identifying all donations infected with NANB hepatitis and only such donations the same samples would have been identified as positive on both tests.

On the 15 July 1987, the Board of the BTSB, acting on the advice of its officials, decided to introduce ALT screening of blood donations subject to the approval of the Minister. In the Tribunal's view this was an appropriate decision. The reports considered by the Board correctly indicated that ALT screening found more favour with European blood banks than anti-HBc. The reports also estimated that the annual cost of introducing ALT screening would be approximately £300,000. It was in practice entirely necessary and appropriate for the BTSB to seek the sanction of the Minister for Health for increased expenditure of that order since it could only be met either by an increase in the price of blood products sanctioned by the Minister or by a grant from the Department of Health.

On the 16 July 1987 Mr. Keyes wrote to Mr. Flanagan, Secretary of the Department of Health, advising him that the Board had decided that ALT testing should be implemented "*provided that the Minister for Health approves and that, in particular, the Minister is agreeable to the necessary financial adjustments to finance the cost of the scheme.*" He enclosed the documents which had been considered by the Board, including the publication in the Lancet and he advanced three arguments in favour of the introduction of ALT testing, that there was a general move to introduce ALT testing in well developed blood transfusion services and the BTSB should maintain the standards of such services, that it was necessary to enable surplus products from the custom fractionation of BTSB plasma to be sold in countries such as West Germany where ALT testing was compulsory and that it was necessary in the interests of the good health of persons with

haemophilia on whom the "*instance of non-A non-B hepatitis can be extremely severe*", In the Tribunal's view all three elements played a part in the decision of the BTSB to recommend the introduction of ALT testing. It is perhaps worthy of note that in referring to the general move afoot to introduce ALT testing in well developed blood transfusion services, Mr. Keyes made the following reference to England:-

> "*Although I do know that in England they to propose to deal with the non-A non-B problem by a higher heat treatment than normal of certain blood products at Elstree.*"

A number of meetings and an exchange of correspondence then took place between officials of the BTSB and officials in the Department of Health. The BTSB continued to advocate the introduction of ALT testing on all three ground advanced in Mr. Keyes letter of the 16 July, the necessity to keep up with international standards, the desirability of having access for surplus products from custom fractionation to countries where ALT testing was compulsory and clinical safety. The correspondence from the Department never challenged the desirability of the introduction of ALT testing, but rather queried and sought further particulars of the estimated cost of its introduction. While it was entirely understandable in the financial stringency which applied at the time that the Department should question and scrutinise any proposal involving extra costs, the request for further information and particulars on costing also had the effect of postponing the necessity for the Department to decide to accept or reject the recommendation from the BTSB that ALT screening be introduced. This matter is considered further by the Tribunal at Part V, Chapter 11.

The Board minutes of the 18 November 1987 contain the following reference to ALT testing:-

> "*Concern was expressed at the cost of the introduction of ALT testing, but despite this the Board decided it should be in a position to introduce this test at the same time as Scotland and England introduce it.*"

In a letter of the 2 December 1987 to Mr. Mulligan, Mr. Keyes stated, "*I wish to advise that my Board decided at its last meeting that it should be in a position to introduce ALT testing when Scotland and England introduce it*", and that he intended to review the entire position relating to ALT testing in about two months' time.

Mr. Keyes accepted in evidence that this represented something of a shift in the policy of the Board and a stepping back from the previous recommendation to the Minister that ALT testing should be introduced immediately. However, this shift in policy was short lived in that at a Board meeting of the 16 March 1988 a decision was taken to advise the Minister, "*that a policy of introducing ALT testing be adopted by the Minister and that a capital grant of £85,000 and an annual grant of about £190,000 should be provided to the Board to give effect to such a policy*". Mr. Keyes wrote to Mr. Mulligan on the 24 March informing him of the Board's decision. The costing of introducing ALT testing was advanced on a different basis than had occurred between July 1987 and November 1987 and, perhaps understandably, Mr. Mulligan wrote on the 25 April 1988 querying the new basis for costing. This letter was replied to by Mr. Keyes on the 13 June 1988. The last recorded communication between the BTSB and the Department on the issue of ALT testing was a note made by Mr. Mulligan of a telephone conversation with Mr. Keyes of the 4 July 1988. Mr. Mulligan noted, "*spoke to Ted Keyes and he asked me to hold the papers on ALT for the present until he has discussed the question of a re-negotiated contract for blood products with Armour Limited*".

The Tribunal finds it surprising that there is no record of the BTSB having pursued further the issue of ALT testing with the Department after the phone call of the 4 July 1988. One of the considerations influencing the BTSB in recommending to the Minister that he should adopt a policy of ALT testing in March 1988 was its belief that the United Kingdom were about to do so. When the

United Kingdom did not do so that impetus was removed. However, the situation in regard to concentrates was different in the United Kingdom because, as Mr. Keyes had noted in his original letter advocating ALT testing in July 1987, they dealt with the problem of NANBH by higher than normal heat treatment. The decision by the BTSB in July 1988 to seek an extension of the arrangement with Armour made it relevant to continue seeking to have ALT screening as a means of seeking to reduce the viral load of NANB hepatitis in concentrates which were to receive no better viral inactivation than dry heat treatment at 60 and 68 degrees centigrade.

As already stated, in 1989 the hepatitis C virus was identified and testing kits for donor screening for the presence of HCV antibody were developed. On the 26 September 1989 Mr. Keyes wrote to the Secretary of the Department advising that the Minister should adopt a policy of HCV antibody screening even though commercial tests were not yet then available. The Tribunal is satisfied that it was appropriate for the BTSB to recommend such a policy to the Minister in September 1989 and that HCV antibody testing kits were not available prior to that date. By September 1989 all plasma collected by the BTSB was being sent to Octapharma for fractionation using solvent detergent viral inactivation. There is no evidence that any such concentrates caused persons with haemophilia to be infected with hepatitis C. The Tribunal therefore does not think it relevant to pursue the issue of HCV antibody screening of donations after September 1989. It may be appropriate to note that such screening was introduced on the 1 October 1991 and to refer those with an interest in the issue to the report of the Tribunal of Inquiry into the infection of Anti-D with hepatitis C.

There was never an uncomplicated consensus of either opinion or practice in favour of ALT screening as a surrogate test for NANB hepatitis. Because of its non-specific nature there was always debate about the level of benefit to be obtained in terms of reducing the incidence of NANB infection, particularly in the case of pooled concentrates. In the circumstances, the Tribunal believes the BTSB pursued a policy of advocating ALT screening to the Department of Health with an appropriate degree of urgency until July 1988. The Tribunal finds it surprising, and inconsistent with the attitude previously adopted by the BTSB, that it did not continue to pursue the matter with the Department from July 1988 until approximately mid-1989 when, understandably, attention shifted to the possibility of HCV antibody screening. The Tribunal also, however, believes that by 1988/1989 the key to protection against the risk of transmission of NANB hepatitis/hepatitis C by concentrates lay in viral inactivation and that, by comparison, the contribution which could have been made by ALT screening was limited or marginal.

Part III

Division 1
Chapter 6

The Financial Position of the BTSB

During its sittings, the Tribunal spent a considerable number of days considering the financial circumstances of the BTSB, in particular during the period of the 1980s. Much of that evidence was given by Mr. John McStay, an Accountant with the firm of McStay Looby, who had on behalf of the BTSB, prepared a comprehensive report in regard to the finances of the organisation from the early 1970s until in or around 1990. The Tribunal also had the benefit of hearing evidence of Mr. Edward Ryan who was the Accountant with the BTSB for much of the period in question. During the phase of the Tribunal dealing with the Minister for Health, the Tribunal also heard evidence from Mr. Dermot Smyth in relation to financial matters.

The Establishment Order

To understand the financial structure of the BTSB it is necessary to look at its history. The Establishment Order contains provisions dealing with finance and in particular paragraph 20 which states:-

> "*(1) The Board shall cause to be kept proper accounts of all income and expenditure of the Board and of the sources of such income and the subject matter of such expenditure, and of the property, credits and liabilities of the Board.*
>
> *(2) The financial year of the Board shall be the period of 12 months ending 31of December in any year.*
>
> *(3) A statement of account of the Board for each financial year shall as soon as may be after the end of such a financial year be prepared and after such preparation be audited by and be subject to a report by an auditor appointed for the purposes by the Minister after consultation with the Board.*

(4) *The expenses generally of such audit should be paid by the Board as soon as my be after each audit.*

(5) *A copy of the accounts and auditors certificate and the report thereon shall be presented to the members of the Board and to the Minister.*"

(See Appendix 10)

It is interesting to note that the Establishment Order did not contain any specific provision which set out where or how the income of the Board was to be derived. Again, there is no specific reference to the provision of monies by the Minister for Health, whether by way of capital grant or otherwise. Historically it is clear that the main source of income of the Board was in practice the sale of blood, an application being made to the Minister for Health for his consent if the Board wished to increase the price. Also, it is clear from Mr. McStay's report that the Minister for Health gave capital grants to the Board on certain occasions and also assisted the Board in relation to its finances by attempting to ensure that other agencies discharged sums due to the Board in a prompt manner.

Capital Funding

While there would appear to have been nothing inherently unsatisfactory in the arrangement whereby the BTSB was intended to be self-financing in the sense that the receipts from the sale of blood and blood products would meet the expenditure of the Board, it created difficulties in a number of areas, including the lack of working capital and funding for capital projects. The problem was identified by Mr. Keyes, the then Chief Executive Officer, in 1987 as follows:-

> "*Finance is the Board's biggest problem, particularly its cash flow. This problem goes back over years and relates to the way the BTSB was originally financially structured. No provision for working capital was made and since its receipts are at least sixty days in arrears on payment, it had to rely on bank overdraft for day to day finance. The position has been exacerbated by substantial capital expenditure over the past seven years and the position is now such that it is a major source of embarrassment.*"

This obvious weakness had practical consequences for the working of the Board. It had to carry on its work on a relatively "hand-to-mouth" basis and on occasions the financial position was such that its bankers threatened not to meet its cheques. Further, it was unable to meet its obligations to the Revenue Commissioners. These inherent difficulties were greatly exacerbated by one particular matter, the move to Pelican House in Mespil Road.

The Move to Mespil Road

In the late 1970s and early 1980s the BTSB decided to move its headquarters to a new premises in Mespil Road. This involved very considerable capital expenditure and also brought about a situation whereby the Board was for some period having to pay rental costs in regard to two premises. The Tribunal does not believe that it is appropriate or necessary for it to comment on the wisdom or otherwise of this move. However, the effects on its finances were all too readily apparent – it turned a precarious situation into one of real crisis. That crisis was ultimately resolved by the payment of capital grants by the Government over a number of years of a figure in excess of £2M. However, the manner of the handling of the move to Mespil Road neatly encapsulated a central deficiency in the finances of the Board; it spent money which it did not have and then attempted to recover it from the Minister for Health rather than obtaining the necessary capital in advance and then proceeding with the project in an orderly manner without incurring an unsustainable level of debt.

The absence of a system of a regular capital grant from the Department to provide working capital and the provision of capital grants in advance for any significant items of capital funding brought about a situation where the BTSB operated in an environment of financial pressure. This was made worse during the 1980s by the fact that at that time there were significant problems with wage control and the organisation had to find money for large wage increases on a regular basis.

The Effects of the Financial Difficulties

The feeling of financial pressure, and at sometimes crisis, within the BTSB undoubtedly had effects on the running of the organisation. Dr. O'Riordan, until his retirement, held ultimate responsibility for not only medical matters but also executive functions. The medical and technical personnel within the organisation operated in an environment whereby they were very aware of the financial pressures which it was experiencing. The Tribunal was left with the impression that time which could have been valuably devoted to medical and technical matters was perforce given over to financial problems and their consequences. This was unfortunate at a period when the challenges facing the Board were considerable, in particular when it was gradually becoming clear that the AIDS virus could be spread by blood and blood products.

During the course of the Tribunal, a number of questions in regard to financial matters were raised and the Tribunal will now turn to consider these matters.

Whether the allegation that the motive of the BTSB in becoming involved in distribution of commercial concentrates was desire for profit is well founded?

As can be seen from other parts of this Report, the Tribunal is of the view that Dr. O'Riordan, the then National Director, was initially not in favour of the introduction of commercial concentrates. This introduction was in response to a demand from the treating doctors. The initial use of concentrates following their introduction in this country was relatively small and so in turn was their contribution to the income of the BTSB. As time went on, the use of concentrates increased and so did their relative importance as a part of the income of the Board. However, one should not lose sight of the fact that the alternative products, cryoprecipitate and Factor IX, were also produced by the BTSB and the proceeds of sale of same equally formed part of the income of the organisation. The evidence to the Tribunal suggested that the BTSB was inclined to promote and "push" its own products rather than commercial products. While the Tribunal accepts that as time went on the contribution made to the income of the BTSB by the sale of concentrates may have been a welcome addition to its cash flow, it does not accept that the decision to distribute such concentrate was motivated or brought about by financial considerations. Indeed initially there seems to have been a marked reluctance by the BTSB to countenance the concept that commercial concentrates should be available as an alternative to the products which it itself produced.

Whether the allegation that decisions made by the BTSB relevant to the safety of products distributed or supplied by them were motivated or compromised by financial considerations is well founded?

In the period from 1975 to 1982 the BTSB was supplying commercial concentrates as well as its own home produced cryoprecipitate and Factor IX. However, as the Tribunal has already indicated, this was in response to a demand from the treating doctors. Ireland was not unique in introducing

the use of commercial concentrates and this happened in many countries throughout the world. The policy in regard to the purchase and use of such concentrates which emerged in 1980 came from the National Haemophilia Services Co-ordinating Committee including representatives of not just the BTSB but the treating doctors and patients. In relation to this period, the evidence to the Tribunal does not establish, and the Tribunal does not accept, that decisions by the BTSB in regard to the distribution or supply of product were in any way compromised by financial considerations.

In the period from the beginning of 1983 to the end of 1985 evidence was beginning to emerge in regard to the link between the spread of the AIDS virus and the distribution of blood and blood products. However, the policy in regard to the continued use of concentrates would appear to have been dictated by the treating doctors and the National Haemophilia Services Co-ordinating Committee rather than by a decision made solely by the BTSB.

While there was a failure to cease to use and to withdraw non-heated BTSB Factor IX in 1985 with due expedition, the Tribunal does not believe that such failure was caused or motivated by financial considerations. This view is supported by the fact that the BTSB began to supply heat–treated commercial Factor IX in February 1985. The factors which brought about this failure are set out and analysed in other parts of this report. Equally, any delay in ceasing to use cryoprecipitate as a treatment for Factor VIII in 1985 does not appear to the Tribunal to have been any way influenced or motivated by financial matters. Nor can the Tribunal see any financial considerations having effected the decision to enter into a contract for custom fractionation of Irish products on the 1 July 1985 with Travenol – this seems to have been primarily influenced by a long standing attempt to achieve self-sufficiency.

In these circumstances, in respect of the period from the beginning of 1983 until the end of 1985, the evidence to the Tribunal does not establish and the Tribunal does not accept that the decisions of the BTSB were motivated or compromised by financial consideration.

The next and final period to be considered is that from the beginning of 1986 until the end of 1990. There were three important decisions in regard to the custom fractionation of Irish product during those years, namely the entering into a contract with Armour in respect of such custom fractionation in 1987, its renewal in 1988 in respect of supplies for 1989 and the decision taken in July 1989 to have such custom fractionation in respect of supplies for the year 1990 carried out by Octapharma. In Part III, Chapter 5 of this Report the Tribunal has examined in detail the genesis and operation of each of these arrangements. The Tribunal does not accept that any failures or inadequacies which may have occurred in respect of such arrangements were motivated by financial factors. It is true that cost factors were taken into account at the time of the renewal of the Armour contract in 1988 but these factors were raised by Professor Temperley in his letter to other Board members dated 14 June 1988. His concern was in regard to what financial costs could reasonably have been expected to be met by the hospitals receiving the product. In his letter Professor Temperley makes it clear that the policy which he was advocating, the continuance of the Armour contract for the year 1989, would have his support as a Director of the National Haemophilia Treatment Centre. Having regard to the contents of the letter, the Tribunal believes that the decision to renew the contact with Armour was influenced by the opinion of Professor Temperley, both in his capacity as a Board member and his capacity as Director of the National Haemophilia Treatment Centre rather than by any financial considerations which affected the BTSB.

The evidence before the Tribunal does not establish, and the Tribunal does not accept, that financial considerations motivated or compromised product decisions by the BTSB during this period.

In forming this view in regard to the question of whether safety was compromised by reason of financial considerations, the Tribunal has also had regard to the evidence of Mr. Edward Ryan, who was the Accountant with the BTSB during the relevant period. During the course of this evidence, when speaking in regard to the BTSB, he stated that the position was as follows:-

> "*It was essentially a medical and scientific organisation and sometimes that took preference over any finance.*"

Later in his evidence when dealing with capital expenditure he said:-

> "*The problem with capital expenditure was that it probably related to medical and scientific matters and they took priority over financial matters, really, in the particular kind of organisation we were in.*"

The Tribunal believes that these passages accurately reflect the ethos which applied within the BTSB.

Whether the financial position of the BTSB and in particular its position in regard to capital funding adversely affected the capacity of the BTSB to pursue a policy of self-sufficiency?

The pursuit of a policy of self-sufficiency is discussed in Part III, Chapters 3 and 4 of this Report. While it is the case that the situation in regard to capital funding in the BTSB would have meant that the organisation was not in a position to dedicate or use significant funds towards developing a home produced intermediate product, nonetheless the Tribunal does not believe that this was the reason why self-sufficiency was not achieved. Rather, up to early 1984 the BTSB was pursuing research into the Gale Rock method of production of intermediate concentrate. The evidence to the Tribunal has shown that this turned out not to be a viable method of production of large amounts of intermediate product. The evidence of Dr. James Smyth shows that this was the conclusion of the Plasma Fractionation Laboratory at Oxford which devoted considerable resources to investigating this method of production.

It was, therefore, not the lack of capital resources which inhibited the achievement of self-sufficiency, but rather the sole pursuit of a production method which turned out not to be viable. As is clear from the experience of the Plasma Fractionation Laboratory, this would have been the case whatever resourced were dedicated to the project. While it might have been clearer at an earlier time that the project was not viable if greater resources had been allocated to it, it is unlikely that this would have had any practical effect since Dr. Smyth informed Mr. Hanratty of the conclusions of the Plasma Fractionation Laboratory in relation to the Gale Rock method but nonetheless the BTSB continued to pursue investigation of this form of production.

Whether the method of finance of the BTSB whereby the proceeds of sale of its products were intended to cover the expenditure of the organisation was appropriate in all the circumstances?

The Tribunal has already analysed the method of funding of the BTSB in the initial paragraphs of this section of its report. The Tribunal believes that it would have been desirable that some form of capital funding should have been made available to the organisation periodically from the Department of Health so that it would have adequate working capital available to it. This would have meant that it would not have been obliged to rely so heavily on its over stretched banking facilities.

Equally, when significant capital projects were to be undertaken, the provision of capital funding for such projects should have been agreed in advance with the Department of Health, so that the pursuit of such projects would not inevitably bring about large deficits, which would in all probability have had to be met at some stage in any event by the Department.

The Tribunal believes that such arrangements would have meant that less time and energy would have been consumed in relation to financial problems and that there could have been a greater concentration by medical and technical staff on meeting and responding to the very real demands which were being made on the evolving service.

Part III

Division 1
Chapter 7

Consultant Haematologists

Before Dr. Jack O'Riordan retired on 31 December 1985 there were four consultant haematologists in the BTSB, Dr. Jack O'Riordan, Dr. James Wilkinson and Dr. Terence Walsh in Dublin and Dr. Vincent Barry in Cork. No new consultant haematologist was appointed when Dr. O'Riordan retired, nor when Dr. James Wilkinson retired in 1986. Following the retirement of Dr. Wilkinson there were, therefore, only two consultant haematologists in the BTSB, Dr. Terrence Walsh in Dublin and Dr. Vincent Barry who was largely based in Cork. When Dr. Vincent Barry retired in December 1987 no new consultant was immediately appointed. Dr. Terence Walsh continued as the sole consultant haematologists in the BTSB in Dublin until he was joined in November 1988 by Dr. Emer Lawlor who was appointed to a part-time locum position in Dublin. During 1988 the senior medical officer in the BTSB Cork was Dr. Joan Power, then a medical registrar. In May 1989 she was appointed to the position of Consultant Haematologist, Cork. No further consultant haematologists were appointed during the period relevant to the work of the Tribunal.

The Tribunal believes this sequence of events resulted in a situation in which the number of consultant haematologists employed in the BTSB in the period after Dr. Jack O'Riordan retired was completely inadequate. The Tribunal also believes this must have impaired the ability of the BTSB as an organisation to deal with the many problems and challenges it faced during that period and that it is a consideration to be borne in mind when considering the work of the persons who were employed by the BTSB in that period.

Further difficulties arose while Dr. Barry was Chief Medical Consultant. When he was appointed to that position Dr. Barry moved briefly from Cork to Dublin. By the summer of 1986, however, he had effectively returned to Cork. He was then based in Cork until his retirement in December 1987, although he travelled to Dublin to attend Board meetings and for other meetings and specific purposes. This left Dr. Terence Walsh as the only Consultant Haematologist at the BTSB headquarters in Dublin. Inevitably Dr. Walsh was asked to deal with many of the issues which arose

in Dublin. A reference to the situation was recorded in the minutes of the Board of the 3 October 1986:-

> "*The Executive Consultant stated that there had been some difficulties about staff having access to clinical decisions from time to time and that Dr. Barry was now spending much more of his time in Cork which was necessary and, accordingly, both Dr. Barry and himself had deemed Dr. Walsh to be Consultant in Charge in Pelican House and that heads of departments in Dublin in particular now dealt with Dr. Walsh and Dr. Walsh consulted with Dr. Barry as appropriate.*"

Dr. Walsh was never given any formal notice of any change in his status or new responsibilities. What seems to have occurred in practice on issues relevant to concentrates was that Mr. Keyes prepared reports for the Board having consulted with and obtained advice from Dr. Walsh and members of the technical or scientific staff in Dublin. When these reports were presented by Mr. Keyes at Board meetings Dr. Barry was present as Chief Medical Consultant but Dr. Walsh was not. The minutes do not record Dr. Barry making frequent contributions on these issues at Board meetings.

The resulting situation was highly unsatisfactory. Dr. Terence Walsh was in practice asked to deal with many issues which would normally have been dealt with by the Chief Medical Consultant without having the authority of that position or access to the Board. Dr. Barry had the responsibility of the position of Chief Medical Consultant and had access to the Board but was not directly involved in dealing with many of the relevant issues. During this period the Board did not receive any advice directly from Dr. Walsh and in practice Mr. Keyes, who had administrative rather than medical expertise, reported to the Board on issues relating to concentrates. The Tribunal believes this amounted to a structural weakness in the medical administration of the BTSB and in the communications between the Board and medical staff which compounded the effects of the reduction in numbers of medical consultants during 1986 and 1987.

Part IV

Division 2

Terms of Reference 9, 10, 11 and 12

Part IV

Division II

Introduction

Division II considered the Terms of Reference 9, 10, 11 and 12 which dealt with the questions and issues arising on donor screening, donor selection and donor testing. These terms of reference had particular relevance to the case of the Kilkenny Health Worker who provided a statement to the Tribunal using the pseudonym "Mary Murphy". She was infected with HIV as a result of receiving a blood transfusion in July of 1985. Terms of Reference 12 dealt with the issuing of untested platelet concentrate to Wexford General Hospital in December 1985.

Terms of Reference 9, 10, 11 and 12 are concerned with the infection of HIV virus only and not with the infection of non A non-B hepatitis. In relation to these Terms of Reference the Tribunal had to inquire into a period of time from 1980 to October 1985 with regard to the adequacy of donor selection and donor screening procedures. In looking at the question of donations from persons subsequently diagnosed as HIV positive the Tribunal was by reason of its Terms of Reference confined to dealing with donations which were made prior to the introduction of HIV testing in October 1985.

Part IV

Division II
Chapter 1

The BTSB: Donor Screening & Testing

Every donor who intended to give blood during the relevant period had to complete a form known as a Donor Registration Form. It was a document prepared to ascertain the safety of the potential donation. A previous history was taken from the would-be donor. The completed form was then reviewed by a doctor who decided whether to authorize the taking of the donation. If such authorisation was given, the donation was then taken. The potential donor was able to ask the doctor any query which he or she may have had.

With the emerging knowledge in late 1982 and early 1983 of the risk that AIDS was caused by an infectious agent, transmissible through blood and blood products, it was necessary for blood banks to take extra steps to protect persons receiving blood or blood products. Obviously the object of such measures was to exclude potential donors who might have been exposed to the agent. It would appear that this object was sought to be achieved by two means, the giving of information and the questioning of would-be donors. The Tribunal is of the view that what happened in this country must be viewed in the context of what happened abroad.

International Developments

The evidence to the Tribunal shows that in or around March 1983 the American Association of Blood Banks published an information leaflet for blood donors entitled "An Important Message to all Blood Donors". This message asked that donors should voluntarily refrain from donating blood if they were in any of a number of identified risk groups which were as follows:-

(1) Those with symptoms and signs suggestive of AIDS.
(2) Sexually active homosexual or bisexual men with multiple partners.
(3) Haitian entrants to the United States.
(4) Present or past users of intravenous drugs.
(5) Sexual partners of individuals at increased risk of AIDS.

Certain signs and symptoms of AIDS were given in the information leaflet.

On the 24 March 1983 the Director of the Office of Biologics, a division of the Food & Drugs Administration in the United States, recommended to blood collecting agencies that national measures should be implemented to inform persons at increased risk of AIDS that they should refrain from donating blood. It was further recommended that a medical history should be taken from potential donors which should contain questions designed to ascertain whether the would be donor had signs or symptoms of AIDS. For example, persons were to be asked whether they had a history of night sweats, unexplained fevers, unexpected weight loss or signs of lymphadenopathy or Kaposi's Sarcoma. Shortly thereafter standard operating procedures in accordance with these recommendations were issued by the American Association of Blood Banks.

Slightly later parallel developments were taking place in Europe. In June 1983 a Committee of Ministers of the Council of Europe issued a recommendation dealing with the prevention of the spread of AIDS as a result of infected blood donations. The committee recommended that blood donors be provided with information on AIDS so that those in high-risk groups could on a voluntary basis refrain from donating. Attached to the recommendation was a copy of the information leaflet which had been prepared by the American Red Cross and which defined risk groups in line with the approach taken by the American Association of Blood Banks.

Developments in Ireland

Dr. Lawlor gave evidence to the Tribunal setting out the steps that were taken in Ireland in regard to donor screening. She pointed out that the situation in Ireland in 1983 was different to that in the United States; there was no evidence that HIV infection had entered the Irish donor population at that time and blood donation was not remunerated in Ireland. A draft "Message to Donors" was brought to the Board of the BTSB on the 15 June 1983 and was approved by it. The document was an information leaflet rather than a questionnaire. Shortly after its approval a copy of the "Message to Donors" was furnished to each potential blood donor and the Donor Registration Form was amended to include a question "Have you read and understood the important Message to Donors?" *(A copy of the Message to Donors is at Appendix 25.)*

The Timeliness of the Introduction of the Information Leaflet

It would appear from the evidence to the Tribunal that the information leaflet provided to donors by the BTSB was one of the earliest, if not the earliest to be provided in Europe. The introduction of the information leaflet took place in an efficient manner and with a commendable degree of expedition consistent with the important purpose of the leaflet.

The Adequacy of the Information Contained in the Original Leaflet

The adequacy of the information contained in the original information leaflet must be viewed together with the adequacy of the medical questions contained in the Donor Registration Form. Given the level of information which was available in or about June 1983 in relation to the risk of AIDS infection through blood products, the introduction of the information leaflet for donors was an important and welcome development in the area of donor screening. However, there was no itemising of the symptoms of AIDS nor was there any change in the content or format of the medical questions to be answered by a potential donor. In particular, the questions did not attempt

to ask a would-be donor whether he or she had experienced or displayed any of the signs or symptoms of AIDS. While this might have been an acceptable approach given the particular conditions prevailing in Ireland at the time of the introduction of the information leaflet, the Tribunal is of the opinion that it became less satisfactory as time progressed and greater knowledge and information became available.

Also, the information leaflet and Donor Registration Form did not provide any means of confidential self-exclusion by a donor, although it is clear that donors were provided with identified telephone numbers should they wish to contact the clinic or any of the medical consultants attached to the BTSB.

Revision of Information Leaflet and Donor Registration Forms

The evidence to the Tribunal shows that in the United Kingdom, other European countries and the United States the "Message to Blood Donors" was up-dated regularly with a view to reflecting the more up to date medical and scientific knowledge that became available with the passage of time. For example in January 1985 the Public Health Service issued a revised recommendation which added the following to the list of those considered high-risk donors:

(1) Males who have had sex with more than one male since 1979 and males whose male partner has had sex with more than one man since 1979.

(2) Patients with Haemophilia.

In the United Kingdom there was a revised leaflet in January of 1985 which again widened the definition of risk groups in particular with regard to practising homosexuals.
In Ireland a revised information leaflet was not issued by the BTSB until December 1985. The evidence to the Tribunal suggests that there were several draft revisions considered before then but none was in fact adopted and issued until December 1985. The need for revision was raised in the BTSB in November of 1984 and Dr. Terence Walsh circulated a draft revised leaflet which did expand the definition of risk groups. The BTSB appeared slow or reluctant to introduce a new information leaflet before the arrival of HIV testing of blood donors. When it was introduced on the 16 December 1985 the revised leaflet did expand the categories of persons who should not give blood to include sexually active homosexual and bisexual men.

In the Tribunal's opinion the failure by the BTSB to update the information leaflet earlier than December 1985 and the failure to modify the information leaflet and the questions on the Donor Registration Form to relate more specifically to the symptoms of AIDS, were unsatisfactory. From the middle of 1983 onwards the risks in regard to the transmission of AIDS were becoming more evident and it was becoming obvious that the disease was spreading quickly in other countries. It should have been clear to the BTSB that the risks of the virus entering the Irish donor population were increasing and that therefore there was a need to regularly update and improve the donor screening procedures. In late 1984 a person with Haemophilia was diagnosed with AIDS in St. James's Hospital. This highlighted the rapid and increasing spread of the disease and the HIV virus which gave rise to it.

Certainly by late 1984 the situation in regard to AIDS was such that the BTSB should have revised the medical questions on the Donor Registration Form having regard to possible symptoms of AIDS and it should have issued a revised and updated information leaflet. One of the reasons why it would appear that a revised information leaflet was not introduced at an earlier time was that the BTSB was waiting until HIV testing of donors was introduced. But the absence of testing made it all

the more important that the donor screening procedures should be as comprehensive and thorough as possible.

Surrogate Testing

The Tribunal heard evidence in regard to the possible use of other tests, such as ALT tests or Hepatitis B Core Antibody testing, as surrogate tests to screen donors for the risk of transmission of the HIV virus. In this regard the Tribunal had the benefit of views from Professor Hoots, Dr. Prince, Professor Van Aken, Professor Tedder, Dr. Au Buchon and Dr. Francis.

It seems clear from their evidence that prior to 1985 there was not any accepted international consensus in regard to the efficacy or desirability of the use of such surrogate testing. Indeed Dr Francis was unable to convince the relevant regulatory and Blood Bank authories in the United States to introduce surrogate testing on a national level from the beginning of 1983. In the opinion of the Tribunal a small blood transfusion service such as the BTSB was entitled, in the light of the state of information and knowledge at the time, not to embark upon the use of surrogate testing for the purpose of screening donors for the risk of transmitting HIV.

The Likely Effects of Better Screening Procedures

Unfortunately, it is clear that the donor screening procedures which were in fact implemented were not fully successful. Donors, such as Donor A who donated on the 16 July 1985 and Donor F who donated on the 11 December 1984, made those donations despite the warnings included in the Information Leaflet. Also it would seem that some infected persons gave repeat donations and, therefore, would have received the "Message to Donors" more than once. Obviously the donor screening procedure was not a fully effective method of excluding potentially infected donors relying as it did on voluntary self-exclusion.

An attempt to look at what would have been the likely effects of a more expeditious updating of the leaflet and the medical questions to give more information in relation to the signs and symptoms of AIDS is to a considerable degree entering an area of speculation and conjecture. However, it seems reasonable to assume that, at least as a general principle, the greater the information given and the more adequate the medical information sought, the greater are the chances of success of the screening system.

Donor Testing

With the identification of the HIV virus in 1984 it was a matter of time until a test would become available to identify the virus and which would be made available to the various blood banks throughout the world. The evidence to the Tribunal shows that in March 1985 the Food & Drugs Administration in the United States approved commercial kits designed to test blood samples for HIV antibodies. Dr. Au Buchon in his evidence to the Tribunal indicated that screening kits were available from Abbott in the United States from mid-March 1985 and that confirmatory tests took approximately a further six weeks to become available and to be put into use.

At an International Conference on AIDS sponsored by the World Health Organisation from the 15 to 17 April 1985 it was recommended that Governments should screen where possible potential donors of blood and plasma for HTLVIII antibodies and not use positive units for transfusion or for the manufacture of blood products. A meeting of the Committee of Experts on Blood Transfusion

and Immunohaematology, held in Manchester from the 28 to 31 May 1985, discussed the question of donor testing and prepared a draft recommendation for the Committee of Ministers which included a recommendation to take all necessary steps and measures with respect to the screening of blood donors for the presence of serological markers for AIDS.

The Public Health Committee of the Council of Europe on the 14 June 1985 prepared a somewhat less definitive recommendation for adoption by the Committee of Ministers. On the 13 September 1985 the Committee of Ministers of the Council of Europe adopted a recommendation in relation to combating the threat of AIDS which included a recommendation that where a member state was considering the introduction of screening procedures for the presence of AIDS markers in blood donors, they should take all necessary steps and measures to ensure that donors were made aware they were being tested, that confirmatory tests were used and that competent counselling was available to any donor informed of an abnormal finding.

International Comparisons in Regard to the Date of the Introduction of HIV Antibody Testing

Dr. Lawlor produced in evidence a very helpful chart setting out the date when HIV antibody testing of blood donations was introduced in a large number of countries. *(See Dr. Lawlor's chart at Appendix 26.)*. The chart discloses that such testing was introduced in Ireland and England at almost exactly the same time in or around the middle of October 1985. There were some countries in Europe where such testing was introduced earlier than this, but others where it was introduced later.

The Preparation for the Introduction of HIV Testing in Ireland

It would seem that the question of the introduction of donor testing for HIV antibodies was under consideration by the BTSB from more or less the time that commercial tests were approved by the F.D.A. in the United States in March 1985. The BTSB intended to evaluate the various tests available. There would appear to have been concerns about the accuracy and reliability of the various tests in that it was felt that some gave a high proportion of false negatives, others a high proportion of false positives and that there were also problems of interpretation. It is clear that Dr. O'Riordan of the BTSB was aware of the different views in regard to the various tests and of the potential problems that could be involved in their use. In March 1985 Dr. O'Riordan was in contact with the Department of Health to inform them that the BTSB did not propose to introduce routine testing until the various test systems had been properly evaluated. While interest was expressed in the commercial kits in April/May 1985, an order for kits for the purposes of evaluation was only placed in late June 1985.

Contacts with the Department continued and a meeting took place in June 1985. On the 18 July 1985 Dr. O'Riordan wrote to Mr. Flanagan, the Secretary of the Department of Health, following his attendance at the Committee of Experts on Blood Transfusion and Immunohaematology in late May. He indicated that the BTSB intended to undertake a comparative evaluation of the four different tests in August 1985. He also pointed out that he was of the opinion, as was the Council of Europe, that separate facilities should be provided for testing people belonging to high-risk groups. A hand-written note by Mr. Cann suggests that at a staff meeting in early July 1985 views were expressed which indicated that three suitable tests had been seen, two of which could be implemented at short notice.
On the 12 September 1985 Dr. O'Riordan wrote to Mr. Flanagan to the effect that it was imperative that the BTSB should be in a position to finalise arrangements for the routine screening of all blood donations. He said that the trials of the four available systems were almost complete and he sought

extra funding and staff. Mr. McCartney from the Department of Health replied on the 20 September giving approval on a temporary basis for four additional staff. This letter concluded that the Minister for Health wished to reiterate that it was imperative that routine testing should commence immediately. On the 25 September 1985 Dr. O'Riordan wrote to Mr. McCartney informing him that advertisements for the required staff were being placed in the national papers. Finally, on the 29 October Dr. O'Riordan informed the Department of Health that HIV antibody testing of all blood donations had commenced with effect from the 21 October 1985.

The Timeliness of the Introduction of Testing

The Tribunal considers there was a lack of urgency by the BTSB in regard to the arrangements for the introduction of HIV antibody testing of blood donations. This would appear to have arisen from two main factors – firstly, an over reliance on the low risk of HIV infection in the Irish donor population and, secondly, an over willingness to await and mirror events in England in relation to such testing. There does not appear to have been a concerted effort by the BTSB at the earliest opportunity to obtain commercial tests from abroad and to carry out any necessary evaluations to see whether those tests could be used in the Irish context. Rather, months went by before matters were progressed and even evaluations of tests took place.

While it is clear that the BTSB felt that it was likely that there would be various difficulties in regard to the use of the commercial kits which were being used in the United States, nonetheless there does not appear to have been a sufficiently careful weighing up of those difficulties as against the risks which were being run by reason of no testing of any kind being in place. Consideration should have been given as to whether some interim arrangements could have been put in place even if it seemed that some more satisfactory form of test kits were becoming available at a somewhat later time. The Tribunal was left with the impression from the relevant correspondence and from the evidence of the witnesses from the BTSB that the issue of testing only took on a real urgency in or around the end of June or beginning of July 1985, and it was moved on with considerable expedition from then. It is noticeable that it would appear that extra resources were only sought for the first time in September 1985 and extra staffing was then quickly authorised by the Department of Health.

The evidence before the Tribunal as to the availability and reliability of the various testing kits was somewhat unsatisfactory but the evidence, in particular that of Dr. Au Buchon, did seem to indicate, certainly from the months of May and June 1985, that various commercial testing kits were readily available in the United States and were being operated relatively successfully in that jurisdiction. In these circumstances the BTSB may have been well advised to attempt to obtain more information from larger blood transfusion services abroad in relation to the operation of the commercial tests rather than concentrating on carrying out their own evaluation procedures. This would appear to have been the practical approach adopted by Mr. Ryan of the Limerick Blood Transfusion Service, albeit in regard to a service with a much smaller scale of operation.

Lack of Availability of Alternative Test Sites

The lack of availability of alternative test sites was a reason heavily relied upon by the BTSB for the delay in introduction of HIV antibody testing of blood donations, both at the time and at the Tribunal. The thrust of the argument was that unless there was available a suitable number of alternative test sites in regard to HIV testing, persons in high-risk groups would be attracted to blood donation clinics simply to ascertain whether they were infected with the virus. This was what was described as the "magnet effect". Given that there was a "window period" during which a test would not

detect any HIV antibodies in an infected person and that some tests might throw up an element of false negatives, the premature introduction of testing might have had the opposite effect to what was intended.

While there is clearly some validity in these arguments, the Tribunal considers the dangers of the "magnet effect" were probably over estimated by the BTSB. Dr. James Walsh of the Department of Health gave evidence to the Tribunal that in his view there were sufficient alternative testing sites available such that the non-availability of such sites should not have been a reason to delay the introduction of HIV testing of blood donations. While Dr. Walsh may have taken a somewhat over generous view as to how readily HIV antibody testing was available in alternative sites, the Tribunal was nonetheless left with the impression that by the Summer and Autumn of 1985 the situation had developed to the point whereby HIV antibody testing was becoming available through the network of S.T.D clinics.

It also seems significant that when HIV testing of blood donations was in fact introduced only a small number of positive donations were found and there does not appear to have been a major influx of positive donations following the introduction of testing. Finally, the Tribunal believes that the BTSB did not give sufficient consideration as to how any possible "magnet effect" could be lessened, for instance, by introducing testing without any public announcement or by deferring the giving of positive test results for a period of time.

The Results of Delay in the Introduction of HIV Testing

The Tribunal has already indicated its view that there was some unwarranted delay by the BTSB in the introduction of HIV antibody testing of blood donations. In relation to the consequences of that delay the real question is if such testing had been introduced with all appropriate expedition by the BTSB, is it likely that the infected donation from Donor A on the 16 July 1985 would have been detected by such testing and the infection of the Kilkenny Health Worker, "Mary Murphy", avoided?

This is a question to which it is very difficult to give a definitive answer. The date of the donation, the 16 July 1985, is such that it is impossible to say definitively whether testing should have been introduced by that date. The Tribunal has come to the view that it cannot be said with any confidence that the infection of "Mary Murphy" would have been avoided if the BTSB had acted as quickly as might reasonably be expected in introducing donor testing.

Part IV

Division II
Chapter 2

The BTSB: Look Back

A look back procedure is a system whereby a blood bank which finds a donor to be HIV antibody positive looks back to see whether that donor has made any previous blood donations and if so, checks to see where those donations have gone and whether they have been the cause of infection. There was much evidence and debate before the Tribunal as to whether such a look back procedure should have been introduced in Ireland and if so when such introduction should have taken place.

International Practice

In the month of June of 1985, in a joint statement, the American Association of Blood Banks, the American Red Cross and the Council of Community Blood Centres stated that in their view an adequate basis did not exist for the notification of recipients of blood components prepared from previous donations of persons found to be HIV positive. On or about the 11 July 1985 a report of the Working Party of the Regional Transfusion Directors Committee in the United Kingdom was published which advocated that look back should take place to determine the names of any persons who had received blood or blood components from donations taken during the previous five years from a person found to be HIV positive. In May 1986 a report was presented to a meeting of the Committee of Experts on Blood Transfusion and Immunohaematology which indicated that only 8 out of 25 countries surveyed had introduced a comprehensive look back programme. In the other 17 countries either no decision had been made or look back in a limited form had been introduced.

In June of 1986 the position in the United States would appear to have changed. The American Association of Blood Banks, the American Red Cross and the Council of Community Blood Centres issued a joint statement with regard to the question of look back. They recommended the following:

> "*That all blood banking establishments using existing records begin to trace recipients of blood components previously donated by persons now found to be positive for HIV.*"

The reason for this recommendation was that some individuals who had a confirmed HIV antibody positive test in 1985 could have been infectious at a time of a previous untested donation. If so, there could be a risk of ongoing infection by the recipient through sexual contact, shared needles or pregnancy. In or about the same time the American Association of Blood Banks issued guidelines for the notification of recipients of blood or blood components from donors who had a confirmed positive test for HIV.

By May of 1987 the position had also moved on in Europe. At that time the Committee of Experts on Blood and Immunohaematology of the Council of Europe recommended that member States should carry out look back surveys of the recipients of potentially infected blood. This proposal was adopted by the European Health Committee in November of 1987. In May of 1988 Dr. Gunson of the Committee of Experts reported that 8 countries had introduced a look back programme, 1 country was in the process of developing such a programme and 9 countries had chosen not to do so. Dr. Terence Walsh, the then Chief Medical Consultant of the BTSB, indicated to Dr. Gunson that Ireland had not yet introduced a look back system because of the variability of the system of records for hospital transfusions.

The History of Look Back in Ireland

The idea of a look back programme in Ireland was first mooted in or around October 1985 at the time of the introduction of HIV antibody testing. Shortly prior to the introduction of such testing Mr. John Cann had set out a number of questions arising from its projected introduction. Some of these questions touched on the issue of the possible necessity to introduce a form of look back procedure and were discussed with Dr. Gunson, a Director of a Regional Transfusion Centre in England. It would appear that Dr. Gunson was of the view that it might be necessary that a previous donation from a positive donor should be traced back for a period of five years.

In or around the summer of 1987, Dr. Barry who was then the Chief Medical Consultant in the BTSB asked Dr. Terence Walsh to compile information in regard to the previous donation history of positive donors. Five positive donors were detected by HIV antibody testing from its introduction to the summer of 1987. However, no look back was undertaken at that time to see whether they had made any previous donations. *(See the typed copy of this document at Appendix 27.)* It would seem that one of the reasons for this request was that Mr. Keyes had asked Dr. Barry to look into the feasibility of the introduction of a look back programme. Dr. Terence Walsh gave the compiled information to Dr. Barry who indicated in his evidence that he prepared a report for Mr. Keyes the thrust of which was a recommendation that a look back should take place. However, the matter was not pursued any further at that time.

The issue of look back does not appear to have been pursued again until the autumn of 1989. By then Dr. Terence Walsh had become the Chief Medical Consultant of the BTSB taking up that post as and from the 1 January 1988. A further positive donor was detected by HIV antibody testing in 1989. At its Board meeting on the 20 September 1989 Dr. Terence Walsh brought to the attention of the Board the discovery of this further positive donor and recommended that a look back procedure should be implemented as this donor had given previous donations. The Board decided that a prospective look back programme should be implemented in that the look back procedure would apply to the recently found donor and to any future donors, but not to any previous donors. Dr. Walsh stated in his evidence to the Tribunal that he advised the Board that a look back programme should be put in place in regard to both past and future donors.
The extract from the minutes of the meeting is as follows:-

> "*The Chief Medical Consultant advised the Board of a donor who had proved positive when tested. This donor was a regular donor and after outlining details, the Chief Medical Consultant stated that a look back programme would have to be implemented.*
>
> *The Board were seriously concerned about the potential legal and public relations aspects of this and after a very detailed discussion decided that the Board's legal advisor should be consulted and that he should outline the procedure for dealing with this case and similar cases in the future, including, where necessary, consultation with our insurers.*"

In fact a look back programme in regard to the pre-1989 donors only took place in September 1996 having been instigated by Dr. Lawlor's discovery in April of 1995 of the donation files of the pre-1989 donors. The look back in September 1996 was carried out by sending a list of 31 blood products made from donations from these donors to hospitals around the country with a view to tracing the products and to ascertain whether they had caused infection. The list of 31 products was attached to a letter which also enclosed three other lists of blood products which were being traced in the context of the ongoing Hepatitis C look back. The letter sent to the hospitals did not draw any distinction between the various lists attached thereto.

One of the blood products included in the list of 31 was donation number 979909 which was the donation made by Donor A on the 16 July 1985 and which had been given by way of transfusion to "Mary Murphy", the Kilkenny Health Worker. Independent of this look back procedure, "Mary Murphy" was diagnosed with HIV in early December 1996. It was then discovered that a blood product received by "Mary Murphy" was on the list of 31 products, the subject of the look back. Also on this list was donation number 901600 given by Donor F on the 11 December 1984, product from which went into batch number 90753 which in turn was involved in the infection of a number of persons suffering from Haemophilia B.

A number of issues have to be addressed in the light of this history of events.

Should the BTSB have Introduced a Look Back Procedure at an Earlier Time?

The Tribunal has no doubt that the BTSB should have introduced a look back procedure at an earlier time than September 1989. In her evidence to the Tribunal Dr. Lawlor indicated that in her view a look back procedure should have been introduced by late 1986 or during 1987. The evidence from both Dr. Francis and Dr. AuBuchon indicated that it would have been appropriate to have a look back procedure at a somewhat earlier time. Dr. Francis indicated that it was ethically required at the latest as of the middle of 1986 and Dr. AuBuchon said it was a standard procedure in most blood banks as of that time.

It is clear that the necessary information was available to indicate that a look back procedure was necessary and to allow such a procedure to take place. This information was compiled in July 1987 by Dr. Terence Walsh and made available to Dr. Barry. The possibility that some of the previous donations from pre-1989 positive donors could also have been positive should have been obvious, as should the possibility of onward infection. In these circumstances, the Tribunal believes that there was no valid justification for the failure by the BTSB and its personnel who were involved with the matter to initiate and carry out a look back procedure as and from late 1986, and certainly from July 1987 when the relevant starting information for the look back was actually compiled.

Adequacy of the Look Back Procedure Adopted by the Board in September 1989

It is unclear whether the Board of the BTSB had before it at its meeting in September 1989 all the relevant information in regard to previous donations by donors found to be positive between October 1985 and the time of the then Board meeting. The Tribunal also has doubts as to exactly how clearly the necessity for both a past and prospective look back was explained to the Board by Dr. Terence Walsh. Nonetheless, the Tribunal believes that the Board was clearly wrong to introduce a look back procedure to deal only with the then current positive donor and future positive donors. The Tribunal can see nothing which could justify the failure to include past donors in the look back procedure. Even if the Board did not have detailed information in relation to the donation history of past donors, it should have been obvious to the Board that there was at least a risk that persons who had been found to be positive between October 1985 and the end of 1987 may have made previous donations which could have resulted in onward infection. A factor which would seem to have influenced the Board at the time was the possibility that the implementation of a full look back procedure which covered both past and future donors might bring about the possibility of increased litigation against the BTSB. Clearly this was not an appropriate matter to in any way influence the decision of the Board to limit the extent of the proposed look back programme.

The unsatisfactory nature of the decision made by the Board in respect of look back on the 20 September 1989 was heightened by the failure of the Board on that occasion to ensure that a written or formal procedure was drawn up and adopted which set out the parameters of the look back procedure and how it was to be implemented.

The Effect of the Failure to Introduce an Appropriate Look Back Procedure at the Correct Time.

The most obvious effect of the failure to introduce a look back procedure at an appropriate time to cover both past and future donations was that the infection of the Kilkenny Health Worker, "Mary Murphy", was not discovered until 1996 whereas, if such look back had been carried out her infection would have been discovered at a much earlier time. This was completely unacceptable since she was left at risk of unknowingly being the cause of onward infection. She was also deprived of seeking treatment for her condition at the earliest possible time.

However, the failure to introduce an appropriate look back programme at the earliest possible time also had a more general effect. If a look back procedure had been carried out in 1986 or 1987 in regard to past donations, the hospital records which would have been available at that time would have been of a more comprehensive nature and more easily sourced than was the position when the 1996 look back took place. Also, crucially, BTSB dispatch documents would have been available as these were destroyed in 1993.

It is reasonable to presume, therefore, that an earlier look back procedure would have been easier and more successful in attempting to trace all the blood products which had been made from donations of persons who were subsequently found to be HIV positive. The 1996 look back, because of the passage of time, was less effective than an earlier look back would have been. Out of six donations in the very high-risk period, three were traced, two were found to have caused infection and the other one did not; while three remained untraced. Out of 11 in the medium risk period, four were traced seven were not and none were found to have caused infection. Of the fifteen in the low risk period, five were traced, ten were not and again none were found to have caused infection.

Look Back and Donor F

Donor F made a donation on 31 August 1990 which was found to be HIV antibody positive. Donor F had also made a previous donation on the 11 December 1984. No look back procedure was carried out to trace the blood products made from the December 1984 donation.

It is true that the length of time between the December 1984 donation and the 1990 donation was such that the circumstances fell outside the then accepted guidelines as to when a look back should take place. The guidelines at the time indicated that such look back should take place if the previous donation was within five years of the positive donation. Nonetheless, since the December 1984 donation was given at a time when the risk of infection was higher in the donor population, the Tribunal believes that a look back procedure to trace the blood products made from the December 1984 donation should have taken place. This view is supported by the fact that Dr. Terence Walsh who dealt with Donor F's positive donation in 1990 was aware that it was highly likely that Factor IX manufactured by the BTSB had infected a number of Haemophilia B patients in 1985 and 1986. This should have heightened concern about donations made in the high-risk period of 1984.

In fact it would appear that inquiries which were made in or around January 1991 by the BTSB in the context of information which was required for ongoing litigation revealed that product from the December 1984 donation had ended up in Factor IX batch number 90753. It is now clear that this is the batch which infected a number of persons with Haemophilia B.

If a look back procedure had taken place in 1990 or 1991 following the positive donation by Donor F which traced the blood products made from his previous December 1984 donation, there would have been a greater likelihood that the true position and cause of the infection in the Haemophilia B patients would have been clarified even if the focus of a look back procedure was not normally in relation to concentrates. It is regrettable that this did not occur.

The Look Back Procedure Carried Out in 1996

The medical personnel in the BTSB in 1995 and 1996 found themselves in a difficult situation when it became clear that no look back had been carried out in regard to donors who were found to be positive between October 1985 and the end of 1987. The Tribunal has no doubt that they acted properly in deciding to attempt to carry out a look back procedure in relation to blood products made from previous donations from those positive donors. Given the length of time since those donations had been given, they faced formidable practical difficulties in attempting to trace them.

While there may have been some explained delay in commencing the exercise, the manner in which they attempted to carry out the look back procedure in 1996 was, given those difficulties, both sensible and appropriate. It is difficult to see how else the personnel in the BTSB could have attempted to trace the particular blood products without sending a list of same to the hospitals around the country. The Tribunal does not think there would have been anything to be gained by specifically highlighting the fact that the list of 31 blood products was being traced in the context of possible infection with HIV rather than Hepatitis C, to do so might have caused unnecessary alarm.

Part IV

Division II
Chapter 3

The BTSB: The Issue of Untested Platelets

The evidence to the Tribunal shows that on the 9 December 1985 platelets were issued to Wexford General Hospital which were untested for HIV antibodies. These platelets were transfused into an elderly female patient on the 9 December 1985 who subsequently died of her underlying illness on the 12 July 1986. The platelets were derived from a blood donation made by Donor C on the 9 December 1985 and the HIV testing in regard to same was only carried out on the day following the donation. On the night of the 9 December 1985 an urgent request was received from Wexford General Hospital for platelets and, notwithstanding that they were untested, they were issued to the hospital and were used to treat the patient. It would appear that the practice of issuing untested platelets ceased completely in or around the summer of 1990.

Given the then short shelf life of platelets, approximately 72 hours, it was perhaps unfortunate but inevitable that on occasions situations of emergency would arise where platelets would be issued even though they were untested. The Tribunal is satisfied that the circumstances of the issue of untested platelets on the 9 December 1985 to Wexford General Hospital was one of genuine emergency. Nonetheless, the Tribunal believes that suitable arrangements should have been in place within the BTSB to ensure:-

(a) That the treating doctor who received the platelets would be aware that they were untested.
(b) If the donation was subsequently found to be positive that the treating doctor would be informed of this immediately.

This view is supported by the evidence of Dr. AuBuchon in relation to practice in the United States.

No such clear procedures would appear to have been in place on the 9 December 1985.

The evidence to the Tribunal does not establish that it was clearly and effectively communicated to the treating doctor that the platelets which were being sent to the hospital were untested. Even more seriously, it would appear from the evidence that the treating doctor was never informed that the donation from which the platelets had been extracted was found to be positive. In the view of the Tribunal this was a grave omission. The fact that the recipient of the platelets subsequently died from her underlying condition does not take away from the seriousness of the failures that occurred.

Part V

Division 3

Terms of Reference 3, 5, 6, and 7 with Reference to all Relevant Persons Other Than the BTSB, its Servants, Agents or Employees and Terms of Reference 8, 13 and 14

Part V

Division III

Introduction

Terms of Reference 3, 5, 6 and 7 with Reference to All Relevant Persons Other than the BTSB, its Servants, Agents or Employees and Terms of Reference 8, 13, and 14

In Division III the Tribunal examined Terms of Reference 3, 5, 6 and 7 with reference to all relevant persons other than the BTSB, its servants, agents or employees and Terms of Reference 8, 13 and 14. Terms of Reference 3 and 5 essentially deal with the selection of products and the selection of manufacturers of products which caused or probably caused persons with haemophilia and other blood clotting disorders to become infected with HIV or hepatitis C. Term of Reference 6 focuses on the issue of when relevant persons ought to have become aware of the existence of a risk of such an infection. Term of Reference 7 deals with the response to the awareness of that risk. Term of Reference 8 focuses on the response when relevant persons became aware of the fact that there were infected persons. Term of Reference 13 focuses in a particular way on the role of the National Drugs Advisory Board and the Minister and Department for Health & Children. Term of Reference 14 focuses on the supervision by the Minister for Health & Children of the Blood Transfusion Service Board and the National Drugs Advisory Board.

In many cases accounts of events or expert evidence which have been set out in Part III are also relevant to issues which arise in this Part. Where this occurs, to avoid unnecessary prolixity, the Tribunal will not repeat the account in this Part but instead will refer to the relevant section of Part III

The Tribunal examined the work of the following bodies:-

(1) The National Haemophilia Treatment Centre;
(2) The regional centres and hospitals providing treatment to persons with haemophilia;
(3) The Irish Haemophilia Society;
(4) The National Haemophilia Services Co-ordinating Committee;
(5) The National Drugs Advisory Board;
(6) The Minister and Department of Health & Children.

Part V

Division III
Chapter 1

The National Haemophilia Treatment Centre: Introduction

In 1971 the National Haemophilia Treatment Centre was established in the Meath Hospital for adults and in the National Children's Hospital, Harcourt Street, for children. In 1976 the adult section moved to St. James's Hospital. The treatment of children remained at the National Children's Hospital. The establishment of the National Haemophilia Treatment Centre was an important advance in the treatment of persons with haemophilia. It provided a centre of medical expertise for that treatment. It adopted a multi-disciplinary approach and attempted to provide comprehensive care to persons with haemophilia including orthopaedic, dental and social work services. It provided a sense of security and continuity for persons with haemophilia who, particularly in the early days, required frequent hospital treatment. It provided a point of contact and permanent base for persons with haemophilia.

The National Haemophilia Treatment Centre was national in the sense that it treated patients from all over the country. During the relevant period there were also centres for treatment of persons with haemophilia under the care of a consultant haematologist in Cork and Galway. These were referred to in the minutes of the NHSCC as regional centres. Reference was also made to a regional centre at Limerick, but Limerick did not have the services of a consultant haematologist. Persons with haemophilia were also treated in other hospitals, generally by doctors who were not consultant haematologists and often in consultation with the National Haemophilia Treatment Centre. The relationship between the National Haemophilia Treatment Centre, the regional centres and other hospitals and doctors is an issue which recurs in this report. Professor Temperley expressed the view that what he described as "grandiose titles" were unhelpful to that relationship. The children's section of the National Haemophilia Treatment Centre was located in the National Children's Hospital because neither the Meath Hospital nor St. James's had a paediatric section. It was thought essential that paediatric services should be available in a centre providing treatment to children with haemophilia. The separation of the children's section from the adults' section created its own difficulties, including a difficulty in ensuring there was sufficient expertise in haematology and specifically in treating haemophilia, among the junior doctors working in the National Children's Hospital.

Professor Temperley was Medical Director of the National Haemophilia Treatment Centre from its establishment in 1971 until his retirement in 1995. He was therefore the Medical Director of the National Haemophilia Treatment Centre for the entire period relevant to the Tribunal's inquiries. He was also, as already described, a member of the Board of the BTSB from 1987 until 1999. He held the post of Consultant Haematologist in the Federated Dublin Voluntary Hospitals from 1968 and at St. James's Hospital from 1976. His duties as Consultant Haematologist were by no means confined to treating persons with haemophilia. In addition to his clinical duties he had an academic career. He was appointed Junior Pathologist in Trinity College Dublin in 1958, Associate Professor of Haematology in 1969 and Professor of Haematology in 1985. He was the Dean of the Faculty of Health Sciences in Trinity College Dublin from 1987 until 1993.

Professor Temperley gave protracted evidence to the Tribunal, for six days in Division I concerning the work of the BTSB and for eighteen days in Division III concerning the work of the National Haemophilia Treatment Centre. There were a number of striking features of his evidence. He was remarkably honest. The Tribunal formed the impression that he genuinely attempted to recall for the Tribunal the thinking which applied at the time without regard to how it would now be viewed with the benefit of hindsight. He declined several opportunities to justify policies by reference to information published at the time but of which he had no recollection of being aware. He was neither evasive nor defensive.

Professor Temperley displayed considerable understanding and forbearance in his evidence. Some persons who gave personal testimony had hard things to say about him. He seemed to understand the hurt and anger caused by infection with HIV or hepatitis C. Where his recollection or the written medical records differed from the recollection of witnesses who had given personal testimony, he advanced his recollection of events with restraint and an understanding for the point of view of his patients and their families.

The Tribunal formed the impression from his own evidence and from the other evidence it heard that Professor Temperley had a deep professional and personal commitment to the welfare of his patients. At one stage he described his own reaction to witnessing the deaths of his patients from AIDS, most of whom would have been personally known to him since they were young boys, as like witnessing the deaths of his own sons.

Professor Temperley gave of himself freely and achieved significant improvements on behalf of his patients, many of which are outside the scope of inquiry of this Tribunal. He must have borne, at times, an almost impossible workload in discharging his many commitments, yet he seems to have been willing to make his advice and expertise available to those who sought it. An illustration of this would be his willingness to join the Board of the BTSB.

The Tribunal's task is to inquire into a number of specific matters. It is not called upon to make any general assessment of the work of the NHTC or, indeed, that of Professor Temperley. However, the Tribunal is conscious that its Terms of Reference focus on the tragedy of the infection of persons with haemophilia with HIV and hepatitis C and, of necessity, on sad and difficult aspects of the work of the National Haemophilia Treatment Centre. The Tribunal believes Professor Temperley made a major contribution to the development and delivery of services for persons with haemophilia. The Tribunal thinks it fair to record these general observations to avoid the distortion which might arise from focusing only on difficult or negative matters.

In examining the work of the National Haemophilia Treatment Centre in Regard to Choice of Product the Tribunal will use the same three chronological periods as were used in Part III.

Part V

Division III
Chapter 2

The National Haemophilia Treatment Centre: Choice of Product prior to June 1982

The Risk of NANB Hepatitis

The developing state of knowledge of NANB hepatitis and developments in the availability of products for treatment of persons with haemophilia in this country during this period have been described in Part III, Chapter 3. A major feature was the increasing use of commercial Factor VIII concentrate from 1974 onwards for home treatment. The availability of home treatment brought enormous advantages to persons with haemophilia who required frequent treatment. The Tribunal heard evidence of heroic pioneering efforts to use BTSB wet frozen cryoprecipitate for home treatment. It was a difficult and daunting task. The commercial concentrates were far easier to use. Their use opened a whole new world for persons with haemophilia who required frequent treatment, the possibility of freedom from frequent attendance at hospital, freedom to attend school, freedom to pursue a career. These benefits were considered to far outweigh the increased risk of NANB hepatitis known to be associated with commercial concentrates, having regard to the then prevailing view of NANB hepatitis as relatively mild or benign. The increasing use of commercial concentrates from mid-1970s onwards by the National Haemophilia Treatment Centre followed what was the general, though not universal, practice amongst treating doctors in the United States and Europe.

When BTSB freeze–dried cryoprecipitate became available in 1977 there was an already established usage in this country of commercial concentrates. Freeze–dried cryoprecipitate would have been easier to use for home treatment than wet frozen cryoprecipitate. It was still significantly more difficult and less convenient to use than commercial concentrates. It also carried a greater risk of causing a reaction in the patient receiving it than the more purified commercial Factor VIII. Having regard to the general international use of concentrates and the then prevailing view of NANB hepatitis, the Tribunal considers both the original decision to use commercial Factor VIII for home treatment and the decision to persist in its use after 1977, when BTSB freeze–dried cryoprecipitate became available, were understandable and appropriate.

In addition to home treatment, there were clinical situations in which the use of Factor VIII concentrate in preference to cryoprecipitate was clearly indicated and justified according to the prevailing opinion and practice among treating doctors. These situations would have included providing cover for surgery and treating patients with inhibitors or those who had a reaction to cryoprecipitate.

Professor Temperley gave evidence that, in the absence of some specific clinical requirement for concentrate, it was the general policy of the National Haemophilia Treatment Centre to use BTSB cryoprecipitate for the treatment of persons with haemophilia A in hospital. He explained that the rationale for this policy was primarily to give preference to the use of nationally produced product. He stated that the reduced risk of NANB infection associated with BTSB cryoprecipitate would not have been a major consideration in forming the policy at this time. He also stated that the policy was not strictly enforced and that he felt that it may not always have been observed.

The expert evidence suggested varying practice at this time. Professor Mannucci described a policy of avoiding the use of concentrates where possible for persons with mild haemophilia A in order to avoid the risk of infection with hepatitis. His policy centred on the use of DDAVP – Desmopressin. He does not seem to have made any significant use of cryoprecipitate. There was some diversity of practice in America, but the general practice seems to have been to use concentrates for all treatment of persons with haemophilia. It is also clear that there was diversity of practice amongst treating doctors in the United Kingdom, further complicated by the availability of NHS concentrate as well as commercial concentrate. Some doctors used cryoprecipitate for patients with mild haemophilia who required only infrequent treatment to avoid the increased risk of hepatitis from commercial concentrates. Other doctors used concentrate for such patients, preferring NHS concentrate to commercial when available in the belief that NHS concentrates carried less risk of transmission of NANB hepatitis than commercial concentrate. Evidence from subsequent studies indicated this belief was not well founded. Dr. Brian Colvin, Consultant Haematologist of the Royal London Hospital, suggested this diversity of practice could be partly explained by differences in outlook amongst treating doctors, with those who were innately conservative tending to favour the continued use of cryoprecipitate and those who were more ready to embrace the latest advance tending to make a greater use of concentrates.

It is difficult to assess the policy for the preferential use of BTSB cryoprecipitate and its implementation, described by Professor Temperley, in the light of this diversity of opinion and practice. It is also particularly difficult to approach this issue on the basis of the then understanding of NANB hepatitis as something relatively mild and benign and not, as we now know it to be, a serious condition. The Tribunal's view is that whereas there were treating doctors at the time who accorded priority to avoiding or curtailing the use of concentrates expressly to avoid the associated increased risk of NANB hepatitis, there were others who did not. The Tribunal does not believe that the policy or practice of the National Haemophilia Treatment Centre on this issue could be said to have fallen short of a generally accepted standard of opinion and practice

John Berry

Mr. John Berry, a person with mild haemophilia A infected with hepatitis C, gave personal testimony to the Tribunal. His recollection was that he had only once received treatment for his haemophilia, in 1979, when, following a nose bleed which he couldn't stop, he was brought to hospital and treated with Factor VIII concentrate. Mr. Berry displayed great courage and fortitude in coming to the Tribunal to give personal testimony despite a diagnosis of liver cancer. He subsequently died. With the consent of his family, the Tribunal investigated his medical records. The available records support Mr. Berry's recollection that he was only treated on one occasion. The quite detailed records of his treatment on that occasion indicate he was admitted to St. James's Hospital in

January 1979 having been transferred from the Accident & Emergency Department of Naas County Hospital with a history of a nose bleed. By the time he was admitted to St. James's Hospital the nose bleed had in fact stopped. It was noted on his chart that if further bleeding occurred, his nose should be packed under cryoprecipitate cover.

His nose bleed did recur at 6.45 a.m. A junior doctor noted in the chart that there was insufficient sterile water for reconstitution of the required dose of cryoprecipitate and that Dr. Lawlor had instructed the use of two bottles of Hemofil as cover for the packing of Mr. Berry's nose. The chart records that this was done and the bleeding stopped. The Tribunal heard evidence from Dr. Emer Lawlor concerning Mr. Berry's treatment which occurred while she was a Registrar in Haematology at St. James's Hospital. She explained that the quantity of sterile water required to reconstitute cryoprecipitate was quite significant and, if not available on the ward, would not necessarily have been immediately or readily obtainable. She also explained that when she was consulted by the junior doctor by telephone her priority was to stop the bleeding because if it was allowed to continue Mr. Berry was exposed to a risk of collapse, and that in those circumstances she thought it appropriate to use the available Hemofil concentrate rather than to delay his treatment until sufficient sterile water could be obtained to use the cryoprecipitate.

The Tribunal believes the detailed examination of Mr. Berry's records is consistent with the existence of a policy in the National Haemophilia Treatment Centre to use cryoprecipitate in hospital where possible for the treatment of persons with haemophilia A. The Tribunal believes sterile water should have been available. 23 years later it is too late to discover why it was not. The Tribunal also believes that the use of Hemofil concentrate for the treatment of Mr. Berry was, in the circumstances and according to medical opinion and practice applicable in 1979, clinically justified by the necessity to treat his renewed nose bleed without delay. With the benefit of hindsight, it can be seen that this treatment had tragic consequences for Mr. Berry in that it was the probable source of his infection with hepatitis C. His risk of infection from a single treatment of cryoprecipitate would have been very significantly less, although not non-existent.

Factor IX

The use of commercial Factor IX concentrate from 1977 onwards by the National Haemophilia Treatment Centre for home treatment, notwithstanding the availability of BTSB Factor IX, has been described in Part III, Chapter 3, as has the reason for that use, the failure of the BTSB to supply home treatment kits with their Factor IX. The Tribunal accepts the evidence of Professor Temperley that he sought such home treatment kits from the BTSB and would have been willing to use BTSB Factor IX for home treatment had they been provided.

The Contribution by the National Haemophilia Treatment Centre to the Selection of Commercial Concentrates.

The National Haemophilia Treatment Centre, through Professor Temperley, contributed to the process established by the NHSCC for the selection of commercial concentrates to be distributed by the BTSB. Professor Temperley's evidence was that matters such as price, continuity of supply and the presentation of the product in a manner which made it convenient for use, including home use, played a significant part in such discussions. He stated that he regarded the concentrates from the commercial fractionators who supplied product to this country during this period as being equivalent in terms of the risk of transmission of non-A non-B hepatitis. The Tribunal heard no evidence to indicate that it would have been possible to establish any significant difference between the various brands of commercial concentrates in respect of the risk of transmission of NANB hepatitis.

Communication of Risk.

The minutes of the NHSCC meeting of 5 October 1979 have already been referred to in Part III Chapter 3. They indicate that in the course of a discussion of the advantages of home therapy involving the use of commercial concentrates reference was made to the risk of contracting hepatitis. The NHSCC was obviously an appropriate forum for the balance of advantage between the benefits of home treatment and the risk of contracting hepatitis from commercial concentrates to be discussed. It seems clear that Professor Temperley on behalf of the NHTC made an appropriate contribution to that discussion. It was also recorded that consideration should be given to the preparation of a leaflet setting out basic facts regarding home therapy and the risk of hepatitis. There is no record of such a leaflet having been prepared and distributed. This represented an opportunity missed by all of the members of the NHSCC, including the National Haemophilia Treatment Centre, to reinforce the communication of risk to individual patients.

Professor Temperley was unable to recall whether or not the risk of hepatitis would have been discussed with patients on an individual basis at this time. In particular, he was unable to recall whether the increased risk of hepatitis attached to concentrates would have been discussed with patients being commenced on home treatment. The Tribunal has not reached a definite conclusion as to whether such discussions took place. It suspects that some such discussion may have taken place in some but not in all cases. The Tribunal feels such a discussion should have taken place. In coming to that view it is not overlooking either the different standards of disclosure and information between doctors and patients which would then have applied or the references to hepatitis in the information leaflets which would have been supplied with the commercial products. If there were failures to discuss the risk of hepatitis with individual patients commencing on home therapy, the Tribunal believes two factors would have diminished their effect. Firstly, if the doctors communicated their then view of non-A non-B hepatitis as something essentially mild and benign, it is unlikely to have deterred persons from availing of the benefits of home treatment. Secondly, patients who were commenced on home treatment were by definition patients who required frequent treatment. By the late 1970s it was known that although the risk of NANB infection from a single treatment of commercial concentrate was much greater than from a single treatment of cryoprecipitate, patients who received significant quantities of cryoprecipitate through regular treatment were exposed to considerable risk of NANB infection.

The National Haemophilia Treatment Centre does not seem to have had any formal means of communicating with the regional centres on general matters of policy other than through the NHSCC and it does not appear to have engaged in any general communications with treating doctors operating in hospitals outside the National Haemophilia Treatment Centre or regional centres. Advice was sought from the National Haemophilia Treatment Centre by such treating doctors in individual cases and given but the National Haemophilia Treatment Centre do not seem to have had the resources to engage in the general dissemination of information on issues like the risk of hepatitis attached to the use of commercial concentrates.

Part V

Division III
Chapter 3

The National Haemophilia Treatment Centre: Choice of Product from June 1982 to December 1986

The Risk of AIDS

The developing state of knowledge of AIDS and HIV during this period has been described in Part III, Chapter 4 as has the Tribunal's view that a general awareness developed in the relevant scientific and medical communities in both America and Europe between January 1983 and June 1983 of a significant or substantial risk that AIDS was caused by an infectious agent transmissible by blood and blood products. As already noted, there was still considerable uncertainty about this hypothesis. The debate was not over. Other explanations for the conditions of AIDS continued to be advanced. It was not known how widely the hypothetical, and as yet unidentified, infectious agent was distributed in the population or whether exposure to it would lead inevitably to the development of AIDS. In this section the Tribunal will examine the response of the National Haemophilia Treatment Centre to that risk.

International Reaction

By 1983 a significant proportion of the treatment for persons with haemophilia in this country was provided by commercial concentrate, principally for home treatment. *(See Appendix 11.)* Ireland was not alone in this dependence on commercial concentrates. As has already been noted, very few countries in Europe achieved the ideal of self-sufficiency based on voluntary donors. Most, like Ireland, were heavily dependant on imported commercial concentrates. In the United States commercial concentrates were also the standard treatment. The Tribunal heard considerable expert evidence of the policy and practice of treating doctors in the United Kingdom, America and Europe in response to the risk of AIDS. The Tribunal proposes to review some of that evidence since it provides the relevant context for an examination of the work of the National Haemophilia Treatment Centre. The Tribunal looked particularly closely at the policy and practice of the United Kingdom Haemophilia Centre Directors since Professor Temperley said he looked to them for guidance.

There were naturally considerable variations in the response but the Tribunal believes it possible to identify four broad themes which it may be helpful to set out before referring to the detail.

(1) In countries where commercial concentrates had an established usage in 1983 there was no general move to completely abandon their use. In particular, they continued generally to be used for the treatment of persons who had already been exposed to regular treatment with commercial concentrates and who continued to require regular treatment.

(2) There was a general move to avoid the use of commercial concentrates, where clinically possible, to treat persons who had either never or only infrequently been treated with them, particularly persons with mild or moderate haemophilia who were unlikely to require frequent treatment.

(3) There was less consensus of opinion or practice on whether persons with haemophilia who required frequent treatment but who had not previously been exposed to commercial concentrates should commence using them. In practice, this issue generally presented itself as a question of whether children with severe haemophilia should routinely commence using commercial concentrates for home treatment.

(4) There was no general move to the use of heat treated commercial concentrates until after October 1984.

Developments in England and Wales

In 1983 three blood products were used in England and Wales for the treatment of persons with haemophilia A, cryoprecipitate, NHS Factor VIII concentrate produced at Elstree from voluntary U.K. donors and commercial concentrates. Commercial concentrates were used principally because there wasn't a sufficient supply of NHS concentrate to meet the national requirement. Haemophilia B patients were treated with NHS Factor IX concentrate. At this time there was no significant use of commercial Factor IX concentrate.

Policy

A meeting of Reference Centre Directors was held on the 13 May 1983 expressly to discuss the problem of AIDS and haemophilia. Following the meeting a letter was sent to the Directors of U.K. Haemophilia Centres. A copy of the letter was probably sent to Professor Temperley. The letter, dated 24 June 1983, referred to one report of a possible case of AIDS in a person with haemophilia in the United Kingdom. It then set out the following general recommendations agreed at the meeting of the 13 May:-

(1) "For mildly affected patients with haemophilia A or Von Willebrand's disease and minor lesions, treatment with DDAVP should be considered. Because of the increased risk of transmitting hepatitis by means of large pool concentrates in such patients, this is in any case the usual practice of many Directors.

(2) For treatment of children and mildly affected patients or patients unexposed to imported concentrates, many Directors already reserve supplies of NHS concentrates (cryoprecipitate or freeze-dried) and it would be circumspect to continue this policy.

It was agreed that there is as yet insufficient evidence to warrant restriction of the use of imported concentrates in other patients in view of the immense benefits of therapy but the situation will be constantly reviewed."

The letter also advised that NHS Factor IX should continue to be used for treatment of persons with haemophilia B. It finally referred to proposed trials of "*hepatitis reduced*", that is heat treated, Factor VIII concentrates. It stated that there was no evidence that the process inactivated "*any other hypothetical viruses*" and it recommended that these should not be used outside of formal clinical trials.

(For a copy of this letter see Appendix 28.)

A meeting of U.K. Haemophilia Centre Directors took place on Monday 17 October 1983. Professor Temperley was present having been specially invited to attend. The minutes contain a reference to heat treated commercial concentrates and a proposal by Elstree to produce heat–treated NHS concentrate as a protection against the risk of transmission of hepatitis. Dr. Craske was noted to report that the first reports he had received on the use of heat–treated commercial product "made it clear that the problem was far from solved". This was presumably a reference to the results of clinical trials showing the transmission of NANB hepatitis through heat treated commercial products. The minutes contain a reference to two cases of AIDS in persons with haemophilia in the United Kingdom. The minutes also contained the following paragraph:-

"*Dr. Chisholm raised the problem of patients refusing to take up commercial Factor VIII concentrate because of the AIDS scare. She wondered in view of the worry of the patients whether the Directors could revert to using cryoprecipitate for home therapy. Professor Bloom replied that he felt that there was no need for patients to stop using the commercial concentrates because at present there was no proof that the commercial concentrates were the cause of AIDS. Dr. Chisholm pointed out that there was a further problem in her region because of problems in getting large amounts of commercial concentrates whereas she could get unlimited supplies of cryoprecipitate. Other Directors reported that they had the same problems. After discussion it was agreed that patients should not be encouraged to go over to cryoprecipitate for home therapy but should continue to receive the NHS or commercial concentrates in their usual way.*"

Practice

The Tribunal heard evidence from a number of U.K. treating doctors. Their evidence indicated there was quite a diversity of practice in U.K. Haemophilia Centres in 1983 largely because such diversity had existed prior to 1983. To illustrate this the Tribunal will attempt to briefly summarise evidence of the practice at three centres.

Dr. Brian Colvin, Consultant Haematologist and Haemophilia Centre Director, gave evidence of the practice at the Royal London Hospital. In the early 1980s, in order to reduce the risk of hepatitis, children under the age of ten were, in general, not put on home treatment but were treated in hospital with cryoprecipitate. This general policy was subject to exceptions through clinical necessity. Children who required home treatment started receiving it between the ages of 10 and 15. NHS concentrates were used for home treatment and commercial concentrates were used for treatment in hospital where treatment with concentrate was necessary. The rationale for this policy was that it was thought preferable to try to provide for the reasonably predictable demand for home treatment from the relatively scarce NHS product and to have reserves of the more readily obtainable commercial product available to meet the much less predictable demand for special clinical use in hospital. These policies were apparently not changed in 1983.

The policy at Newcastle Haemophilia Treatment Centre was described by Dr. Peter Jones, Consultant Paediatrician, and Director of that centre during the relevant period. It seems in that centre from the mid-1970s children were treated in hospital with cryoprecipitate up to the age of six. Children who required home treatment were commenced on home treatment at approximately the age of six using concentrates. NHS concentrates were used where available for home treatment and where not available commercial concentrates. It would seem from Dr. Jones' evidence that in the great majority of cases patients of the centre would have received both NHS and commercial concentrates and that only in the case of a small number of patients was it possible to provide all their treatment from NHS concentrates. Again it seems the policy did not change in 1983 and in particular children who had reached the age of six who required home treatment continued to commence treatment with concentrates after that date.

Professor Christine Lee, Haematologist, gave evidence of the policy of the Haemophilia Centre in the Royal Free Hospital, London. Cryoprecipitate was apparently used extensively in that centre until 1978 because the then Director was an enthusiast for cryoprecipitate. In 1978, under a new Director, concentrate began to replace cryoprecipitate. A mixture of NHS and commercial concentrate was used. Children were treated with NHS concentrate. By 1983 the use of cryoprecipitate at the centre had virtually ceased. The policy described by Professor Lee in 1983 involved use of DDAVP where possible for persons with mild haemophilia and otherwise treatment with concentrate, either NHS or commercial. Professor Lee suggested that although the policy of using NHS product for children existed before 1983, it was not based on a view that NHS product was inherently better than commercial concentrate. After 1983 NHS product was regarded as safer and was used preferentially for children on that basis. Apart from this change of emphasis, it does not seem that the treatment regime changed significantly in 1983. Professor Lee described a period during 1984 when elective surgery would have been deferred.

All three centres referred to followed the general practice in the United Kingdom of using NHS Factor IX for the treatment of persons with haemophilia B and continued to do so after 1983.

Other European Countries

The Tribunal believes the policy and practice in the United Kingdom was broadly consistent with that of other European countries where a significant use of commercial concentrates had been established prior to 1983. The policy described by Professor Mannucci for his patients at Milan attached importance to the use of DDAVP where possible for patients with mild haemophilia A. Where this was not possible, his general policy was to use commercial concentrates rather than cryoprecipitate and this policy continued after 1983. He did not use heat–treated products at this stage, apart from their use in clinical trials and, as has already been noted, when he learned of the inability of dry heat treatment to prevent the transmission of NANB hepatitis he inferred it would be unlikely to inactivate the hypothetical and unidentified virus which might be causative of AIDS. Professor Van Aken, of the Central Laboratory for Blood Transfusion, Amsterdam, gave evidence of the situation in Holland. In the early 1980s cryoprecipitate, an intermediate purity concentrate produced by the Central Laboratory and imported commercial concentrates were used for the treatment of persons with haemophilia A. A proposal by a Public Health Officer that consideration should be given to banning the importation of commercial concentrates met with resistance and was not pursued. Use of all three products continued. The situation in Finland described by Professor Leikola was quite different. Finland was entirely self-sufficient in products for treatment of haemophilia. In 1983 the products used were cryoprecipitate for persons with haemophilia A and Factor IX for persons with haemophilia B, both produced from plasma from voluntary Finnish donors. Having refrained from using imported commercial concentrates prior to 1983, Finland naturally continued to do so after 1983.

The United States

The evidence the Tribunal heard of the policy and practice adopted in the United States during 1983 and 1984 indicates that it too did not differ significantly from that adopted in the United Kingdom. Naturally there were differences of detail, but the two main elements were the same; that is continuing the use of commercial concentrates for those who were already using them and required regular treatment, while seeking where clinically possible, to avoid or restrict their use in the treatment of those who had not previously been exposed to concentrates. Professor Hoots, Haematologist, Oncologist, Paediatrician and Director of a Haemophilia Centre in Texas and Dr. Shelby Dietrich, Director of the Haemophilia Care Centre in Los Angeles and Pasadena, gave evidence of using heat treated commercial product when it became available in the United States in 1983. They stated that they did so in the hope that heat treatment might provide some protection against the transmission of AIDS without having any evidence upon which to base that hope. Like all other witnesses, they identified October 1984 as the date when evidence first became available that heat treatment might prevent the transmission of the virus causative of AIDS. They also stated that the general move towards the use of heat treated concentrates did not occur until after October 1984. Dr. Donald Francis, formerly of the CDC, was highly critical in his evidence of what he perceived to be the inadequacies in the reaction to the crisis in America in 1983 and 1984, but he did not differ from the other witnesses as to what that reaction was.

Response of the National Haemophilia Treatment Centre

Policy

On the 8 November 1983 Professor Temperley sent a draft policy document to a number of persons, including Dr. O'Riordan for their comments or suggestions. A final version of the policy document was sent by Professor Temperley to a number of members of the medical and nursing staff of the National Haemophilia Treatment Centre and to Dr. Cotter of Cork in December 1983. (*A copy of this document forms Appendix 29.)*

The policy provided that all persons receiving home therapy should be allocated to a particular commercial product and batch number. By inference it provided that persons who were already receiving commercial product for home treatment should continue to do so. It provided that persons with mild haemophilia A or Von Willebrand's disease should be treated if possible with DDAVP and where not possible with cryoprecipitate. It directed that all treatment in hospital should be with BTSB cryoprecipitate and this, "*should only be disregarded in a serious emergency, if there is an allergic reaction or on the advice of the consultant on duty*". It also directed that cover for major operations should be decided by the consultant on duty.

This policy was consistent with the policy and practice in the United Kingdom in advocating that persons who were already regularly being treated with commercial concentrates for home treatment should continue that treatment, in seeking to restrict all other uses of commercial concentrate to the greatest extent clinically possible and in not advocating the use of heat treated commercial product.

The policy did not contain any provision as to whether persons with haemophilia A who had not previously been exposed to commercial concentrates but who required regular treatment, should from that time on be routinely commenced on home treatment with commercial concentrates.

Professor Temperley stated in evidence that although he could not recall the issue having arisen during 1984, he thought it likely that his thinking would have been affected by the policy and, in effect, that he would have been slower to commence persons on home therapy after the policy was adopted. The Tribunal did not encounter any example of a person having commenced on home treatment during 1984 in the National Haemophilia Treatment Centre among the individual medical records made available to it.

The Tribunal finds the question of whether the response of the National Haemophilia Centre in 1983 should have included a change in the policy of routinely commencing patients on home therapy with commercial concentrates difficulty to answer. One might have thought such change to be a logical corollary to the policy of seeking to protect those who had not previously been treated with commercial concentrates from exposure to them. It seems, however, from the evidence of treating doctors in the United Kingdom that persons with haemophilia, and more specifically children, continued to be routinely commenced on home treatment with concentrates after 1983. In some case, though not all, it seems to have been possible to arrange that the concentrates would be exclusively NHS rather than commercial concentrates. Professor Mannucci also described continuing to routinely commence children on home treatment with concentrates. In his case the concentrates were unequivocally commercial concentrates. Notwithstanding this evidence, the Tribunal thinks it was appropriate that some review of the policy of routinely commencing patients on home treatment with commercial concentrates should have been included in the response of the National Haemophilia Treatment centre to the risk of AIDS in 1983. It might have been appropriate for the policy to have contained a clause that a decision to commence a patient on home therapy should only be taken by the consultant on duty and only where the clinical necessity for home treatment was clearly established.

Factor IX

The policy made no reference to haemophilia B patients or their treatment with Factor IX concentrate. At that time substantial quantities of commercial Factor IX – Proplex – were being used by the National Haemophilia Treatment Centre for home treatment because of the failure of the BTSB to supply suitable home treatment kits for BTSB Factor IX. The Tribunal believes the National Haemophilia Treatment Centre ought to have made strenuous efforts to switch all haemophilia B patients, including those receiving home treatment, to BTSB Factor IX as part of its response in 1983 to the risk of AIDS. While the Tribunal accepts Professor Temperley's evidence that he sought home treatment kits from the BTSB there is no specific record of his having done so in the context of avoiding the risk of AIDS. The reference to Factor IX concentrates in the minutes of the NHSCC of the 11 May 1984 has already been referred to. It was in the following form:-

> ***"CENTRAL PURCHASING OF FIX CONCENTRTATES***
> *An order for the final packaging of FIX concentrates is about to be placed. The elimination of this limiting factor, i.e. suitable packaging will result in complete self-sufficiency in this product."*

This reference may have resulted in pressure from the National Haemophilia Treatment Centre at the time on the BTSB to produce "final packaging" or home treatment packs. Professor Temperley stated in evidence he did not think home treatment packs were in fact produced until some considerable time later. The figures for issues of commercial concentrate by the BTSB indicate that substantial quantities of such concentrate during were issued during 1984. *(See Appendix 11.)*

The Tribunal believes the primary responsibility for the failure to achieve self-sufficiency in Factor IX lay with the BTST. It also believes that on the basis of the information which was available in 1983

the National Haemophilia Treatment Centre should have given a higher priority to securing an acceptable form of Factor IX from the BTSB for home treatment than seems to have been the case. It was entirely fortuitous, and not known to the National Haemophilia Treatment Centre at the time, that the commercial Factor IX in question – Proplex – included a step in its fractionation process which inactivated the HIV virus. Had this not been the case, it is probable persons would have been infected from using unheated commercial Factor IX. It is ironic that it was in one sense fortunate that self-sufficiency based on BTSB Factor IX had not been achieved, as it should have been, prior to 1985. If there had not been an established use of commercial Factor IX at that time, there would presumably have been an even greater reluctance to switch from unheated BTSB Factor IX to heat treated commercial Factor IX, with consequently greater numbers of persons infected by the unheated BTSB Factor IX. However, these circumstances do not excuse the failure to achieve self-sufficiency before 1985. Just as it would be inappropriate to criticise parties for decision taken according to the then prevailing opinion and practice because they had unforeseen disastrous consequences, it would be equally inappropriate to excuse failures to take appropriate steps according to the then prevailing opinion and practice on the basis of a fortuitous and unforeseen benign outcome.

Delay

Professor Temperley had a copy of the letter of the 24 June 1983 from Professor Bloom and Dr. Rizza among the records which he produced to the Tribunal by way of discovery. He thought that he had probably received the letter in June 1983 although he did not seem to have any clear recollection of doing so. Whether or not Professor Temperley received a copy of that letter the Tribunal believes the National Haemophilia Treatment Centre ought to have commenced preparing its policy in response to the risk of AIDS by no later than June 1983. The Tribunal also believes that the time which elapsed from June 1983 until the preparation of the draft policy in November and the final policy in December 1983 involved an unacceptably long period of delay. Professor Temperley sought to explain the delay by saying, in effect, that it took some time to organise his thoughts and reach conclusions. No doubt Professor Temperley also derived assistance from his attendance at the meeting of U.K. Haemophilia Centre Directors on the 17 October 1983, but the Tribunal does not believe that these considerations adequately explain the delay in producing the policy.

Practice

The Tribunal examined a number of individual medical records of patients in the National Haemophilia Treatment Centre. The general Orders for Discovery made against St. James's Hospital and the National Children's Hospital specifically excluded individual medical records from their ambit. The Tribunal thought it inappropriate to obtain access to individual medical records without the consent of the patient concerned or the family of a deceased patient. The medical records examined came to the attention of the Tribunal in three ways, records identified by the Tribunal itself from statements of proposed evidence or evidence heard by the Tribunal, a substantial number of medical records made available to the Tribunal by Malcomson Law, Solicitors to the Irish Haemophilia Society and some further persons who contacted the Tribunal directly or through their solicitors. In all cases records were examined with the express agreement of the patient or his family. In this way the Tribunal has examined a considerable number of individual medical records and in particular records which relevant and interested parties thought it appropriate to bring to the attention of the Tribunal.

The Tribunal examined the individual medical records for evidence of the practice of the National Haemophilia Treatment Centre in choice of product for treatment in 1983 and 1984. The Tribunal

examined particularly closely any cases where concentrate was used in 1983 or 1984 to treat persons with haemophilia A who had not previously been exposed to such treatment.

The Tribunal identified four such cases. It assigned the pseudonyms "Adam", "Bernard", "Rory" and "Declan" to the persons involved. All four persons were unfortunately infected with HIV.

“Adam”

Adam was born in 1980. He was a person with severe haemophilia A. In February 1983 he was prescribed Hemofil to deal with an episode of bleeding into his hip described as an iliopsoas bleed. In March of 1983 he was commenced on home treatment. Both these treatments obviously occurred before June 1983 and therefore the date when the Tribunal believes the National Haemophilia Treatment Centre ought to have had a treatment policy specifically to deal with the risk of AIDS. Having regard to the severity of the bleed and the likelihood of the patient requiring frequent treatment, the Tribunal believes these treatment decisions could be justified according to the then prevailing opinion and practice.

"Bernard"

Bernard was born in 1982 and was diagnosed to be a person with severe haemophilia A. On the 5 February 1983 the records indicate that he was treated with cryoprecipitate for bleeding resulting from having cut his upper lip. On the 27 April 1983 the records indicate that he fell and suffered a head injury. He did not apparently suffer any loss of consciousness but he was recorded as having suffered an occipital haematoma. On that occasion he was treated with concentrate. When Professor Temperley was asked about this case while giving evidence he indicated that a head injury might possibly have been dealt with by treatment with cryoprecipitate. He also however referred to the risk in a young patient with haemophilia of an early inter-cranial bleed with the risk of some permanent impairment. In the light of Professor Temperley’s evidence the Tribunal did not come to any decided view on this treatment. It again occurred before June 1983. It is possibly an illustration of a case in which the use of concentrate would have been clinically justified by reference to the risk of NANB hepatitis, but would not have been appropriate after a policy had been formulated in response to the risk of AIDS.

"Rory"

The Tribunal heard evidence from a witness given the pseudonym "Jackie" about her son "Rory" who was born on the 11 March 1973. He was diagnosed to be a person with severe haemophilia A. "Rory" lived some distance from Dublin. His mother was apparently initially advised by a doctor in the local hospital that "Rory" would have to be taken into care because otherwise he might bleed to death while being brought to hospital for treatment. "Jackie" was reassured by Professor Temperley at the National Children’s Hospital that this would not occur and "Rory" was brought to the National Children’s Hospital for treatment. He required frequent treatment and was often in considerable pain on the journey to Dublin for treatment following a bleeding episode. Arrangements were then made for "Rory" to have treatment in a local hospital. This still involved transport to the hospital and sometimes painful delays while awaiting treatment in hospital. The treatment which "Rory" then received, with the possible exception of a single occasion in January 1980, was with cryoprecipitate.

In 1982 his clinical condition and in particular the condition of one of his knees was deteriorating. Home treatment was suggested for "Rory". "Jackie" explained to Tribunal that she was reluctant to

agree to home treatment and did not do so initially because she had a phobia about injections. "Jackie's" recollection was that when she met Professor Temperley in May 1983 she told him she was coming around to the idea of home treatment and asked him whether he thought she would be able to manage home treatment despite her phobia about needles. Professor Temperley told her she would be able to manage but that the person who provided training in home treatment was out sick at the time. "Jackie" started administering treatment to "Rory" under supervision in hospital in August 1983 and administered the first treatment at home in September 1983. The home treatment involved the use of commercial concentrates. "Jackie" explained that she agreed to the home treatment despite her fear of injections because "Rory" hated hospitals and he was missing too much school. She also explained that in fact she managed the home treatment without any difficulty. "Rory" was later found to be HIV positive and went on to develop an AIDS–related illness from which he died.

The Tribunal heard many heartrending stories in the course of its work. None encapsulated the cruelty of what befell persons with haemophilia more clearly than the story of "Rory" told with great courage and dignity by his mother. It also encapsulates the dilemma which faced treating doctors in 1983.

"Rory" was not routinely commenced on home therapy. The Tribunal accepts Professor Temperley's recollection that he gave the matter thought and that he had specific and pressing clinical reasons for commencing "Rory" on home therapy. At the time, in Professor Temperley's judgement, these outweighed his view of the increased risk of HIV infection associated with commercial concentrates.

Professor Temperley admitted that he had not fully thought out his policy in response to the risk of AIDS when he discussed the matter with "Jackie" in May 1983 or even before home therapy actually commenced in August 1983. The Tribunal believes Professor Temperley should have worked out a policy before August 1983. As already stated it believes the appropriate policy would have been that home therapy should only be commenced where the clinical necessity for it was clearly established. It is impossible to say definitely whether Professor Temperley's advice to "Jackie" would have been any different had such a policy been in place. It would seem from his evidence it probably would not.

"Jackie's" recollection was that Professor Temperley made no reference to the risk of AIDS associated with the use of commercial concentrates in their discussion in May 1983. Professor Temperley had no recollection of any such discussion and accepted it might not have taken place. He explained his failure to discuss the risk with "Jackie" by saying that the approach of doctors to such discussions with patients was very different in 1983 from now and, in effect, that he would have wished to avoid causing worry and alarm to "Jackie" by reference to what he then still considered to be a relatively remote risk. The Tribunal has considered this explanation. It readily accepts that the standards applicable then to discussing treatment options with patients were very different from now. This was confirmed by many of the experts who gave evidence. The Tribunal nonetheless believes even by the standards applicable in 1983 Professor Temperley should have discussed the risk of AIDS when advising "Jackie" to commence home treatment with commercial concentrates.

"Declan"

The Tribunal heard evidence from a witness using the pseudonym "Deirdre" about her husband who was given the pseudonym "Declan". He was a person with mild haemophilia A, so mild that he had never received any form of treatment prior to May 1984. In April 1984 he was admitted to St. James's Hospital to have surgery carried out on a pilonidal sinus or ingrown and infective hair. After a trial of DDAVP it was recorded in his chart that the operation would be carried out under cover of

cryoprecipitate. After the operation it was again recorded in his chart that he should have daily cryoprecipitate for one week. On the 3 May 1984, approximately three days after the operation, a note, apparently made by a junior doctor in "Declan's" chart recorded, "*cryoprecipitate stopped. Factor VIII concentrate now in use. Wound clean, healing nicely*". "Declan" was infected with both HIV and hepatitis C and later died. The Tribunal believes the probable source of his infection was this treatment with concentrate

No explanation is recorded in "Declan's" chart for the decision to switch his treatment from cryoprecipitate to Factor VIII concentrate. There is no record of any clinical event or emergency which would have required treatment with concentrate. The decision to change his treatment was apparently made without any reference to Professor Temperley or any other consultant. On the information available to the Tribunal, this clearly should not have happened and was completely contrary to the policy of December 1983. One of the principal objects of the policy was precisely to protect persons with haemophilia who had not previously been treated with concentrates from exposure to them The Tribunal is satisfied that the policy contained appropriate provisions which should have prevented "Declan" from being treated with concentrate in the manner which occurred had the policy been observed. Although Professor Temperley, as Director of the National Haemophilia Treatment Centre was formally responsible for any errors on the part of medical staff working in the Centre, the Tribunal believes, on the evidence available to the Tribunal, what occurred happened without reference to Professor Temperley and that he was not involved in the change of treatment.

Communications

On the 31 May 1983 Mr. Shay Farrelly, Hon. Secretary of the Irish Haemophilia Society, wrote to Professor Temperley expressing concern about AIDS and the use of American blood products. *(A copy of this letter is Appendix 30.)*

Professor Temperley replied to Mr. Farrelly, by letter dated 9 August 1983 enclosing a contribution intended for the Irish Haemophilia Society broad-sheet, entitled "AIDS – A Menace to Haemophiliacs?" (*A copy of this letter and enclosure forms Appendix 31.)*

The letter refers to the policy of the Directors of the U.K. Haemophilia Centres being, "to allay fears". Professor Temperley's contribution intended for publication in the Irish Haemophilia Society newsletter is informed by the same policy. The information presented about AIDS is presented in a manner designed to provide reassurance and to allay fears. The contribution concluded:-

> "*What then is the advice to haemophilic persons.*
>
> *(i) You have faced the problems of jaundice and hepatitis with courage and understanding. The possible problems of AIDS must be encountered with the same fortitude.*
>
> *(ii) Present information suggests that AIDS is rare in people with haemophilia. The benefits of the usual intravenous therapy are too well known to be enumerated. The balance to date therefore falls decisively on the side of continuing treatment as before.*
>
> *(iii) Do not hesitate to visit the National and Regional Centres for advice.*
>
> *(iv) Please be assiduous in attending the Combined Haemophilia Clinics. Special assessments will be undertaken throughout 1983–84.*"

The reassuring tone of this communication is consistent with the tone of similar communications

from treating doctors in the United Kingdom and elsewhere at this time. It is particularly difficult to approach these communications on the basis of what was then known and not what we now know of the havoc which HIV and AIDS wrought in persons with haemophilia all over the world. It is essential to remember that the number of diagnosed cases of AIDS among persons with haemophilia was then still relatively few. The fear among treating doctors of serious and even life-threatening consequences for persons with haemophilia if they stopped taking treatment was a real fear. Having regard to what was known at the time and the policy and practices of other treating doctors at the time, the Tribunal does not think this was an inappropriate contribution by Professor Temperley to the Irish Haemophilia Society newsletter.

Although a draft of the treatment policy had been sent to Dr. O'Riordan for his comments in November 1983, it seems the only persons to whom the final version of the document was sent outside of the National Haemophilia Treatment Centre was Dr. Cotter in Cork. The Tribunal believes the document should have been given a wider circulation. At the least, a copy of it should have been sent to Prof. Egan in Galway and Dr. Basheer in Limerick. Arrangements should also have been made with the BTSB to ensure that the policy was brought to the notice of hospitals and doctors outside the National Haemophilia Treatment Centre and Regional Centres who might be required to provide treatment for persons with haemophilia. The Tribunal also thinks it would have been appropriate for the Irish Haemophilia Society to have been informed of the policy. Almost all of this communication could have been achieved by furnishing a copy of the policy to a meeting of the NHSCC at which, in previous years, questions of treatment policy had frequently been discussed.

Communications with Commercial Fractionators

There is no written record of the National Haemophilia Treatment Centre having sought information from the commercial fractionators on their policy in respect of matters such as donor selection and donor screening in 1983. As already noted in Part III, Chapter 4, the National Haemophilia Treatment Centre would have received unsolicited circular letters on these matters from the commercial fractionators. The letter from Professor Temperley of the 9 May 1984 to the NDAB already quoted refers to Armour, Travenol and Cutter having given him verbal guarantee that their collections were outside the areas associated with AIDS and suggesting it would be helpful if the NDAB were to receive a written guarantee of those verbal statements. Again, as with the BTSB, there is no record of the National Haemophilia Treatment Centre having pursued any inquiries during 1983 about the possibility of obtaining supplies of Factor VIII fractionated by Immuno from European paid donors.

Heat Treated Commercial Concentrate

As was noted in Part III, Chapter 4, the experts who gave evidence to the Tribunal were agreed that the publication by the CDC in October 1984 provided the first evidence that the HIV virus could be inactivated by dry heat treatment. As was also there noted, Professor Temperley and Dr. Cotter, with the support of Dr. James Walsh of the Department of Health, decided in December 1984 they would purchase only heat treated Factor VIII and Factor IX concentrates from commercial firms in 1985. Unheated commercial products were replaced with heated products, in the case of Factor VIII by January 1985 and in the case of Factor IX by February 1985. The Tribunal considers this was an appropriate and commendably swift response by Professor Temperley and Dr. Cotter to the information published by the CDC and the end result, the date for the replacement of unheated commercial concentrate with heated concentrate, compares favourably with that achieved in other European countries. Professor Temperley's initiative was all the more commendable in that in a

letter of the 9 October 1984 to Dr. Scott of the NDAB, having referred to the disappointing results of clinical trials of heat treated product as a means of preventing the transmission of NANB hepatitis and "*very preliminary information that heat treatment of Factor VIII concentrates may destroy the HTLV III virus*", he stated that having consulted with a number of U.K. Haemophilia Centre Directors he did not intend to purchase heat treated product for 1985. Professor Temperley's attendance at a meeting of U.K. Haemophilia Centre Directors in December 1984 and the diagnosis of AIDS in one of his patients with haemophilia A in November 1984 are likely to have contributed to his change of mind. It was fortunate that he and Dr. Cotter took such decisive action with the support of Dr. James Walsh and the co-operation of the commercial fractionators because, as already noted, there is no surviving evidence that the BTSB took any initiative in regard to heat treated commercial concentrates.

Infection with HIV of Persons with Haemophilia A

Not all of the 95 persons with haemophilia A who were probably infected with HIV prior to the 1 January 1985 were patients of the National Haemophilia Treatment Centre. Professor Temperley's evidence was that 74 infected persons were patients of the National Haemophilia Treatment Centre of whom 66 were classified as severe haemophilia A, 4 as moderate and 4 as mild. It is probable that the great majority of persons with severe haemophilia A were infected as a result of being treated with commercial concentrates for home treatment. In Part III, Chapter 1, the Tribunal described its impression from the records of retrospective testing which it has examined that approximately two-thirds of the persons who became infected were already infected by the middle of 1983 and the remaining one-third were infected between the middle of 1983 and the end of 1984.

The Tribunal has examined how the use of concentrates by the National Haemophilia Treatment Centre for home treatment up to the middle of 1983 and the decision to continue that use notwithstanding the emerging information about the risk of AIDS came about. The Tribunal believes in both cases the National Haemophilia Treatment Centre followed the general opinion and practice then prevalent among treating doctors in the United Kingdom, the United States and European countries which had not achieved self-sufficiency in products for the treatment of persons with haemophilia. These decisions by the international community of treating doctors had tragic consequences for persons with haemophilia in all countries in which there was a significant use of commercial concentrates. The resulting infection with HIV, particularly among persons with severe haemophilia, in this country was repeated in similar tragedies in the United Kingdom, the United States and other European countries with significant use of concentrates.

Professor Temperley drew attention to the relatively small number of patients with mild haemophilia or moderate haemophilia who were infected with HIV and to the fact that no patients with Von Willebrand's disease or other inherited coagulation disorders were infected as an indication that the National Haemophilia Treatment Centre achieved some success in avoiding exposing such patients to commercial concentrates. The Tribunal thinks this point is well taken.

BTSB Factor IX and Cryoprecipitate.

In Part III, Chapter 4 the Tribunal set out an account of events in this country and elsewhere relevant to heat treatment of BTSB Factor IX and cryoprecipitate. The Tribunal believes a number of issues relevant to the work of the National Haemophilia Tribunal Treatment Centre arise from those events:-

(1) Was it appropriate for the National Haemophilia Treatment Centre to make a distinction between BTSB product and commercial concentrates in December of 1984 and to allow the BTSB some time to heat–treat their products?

The Tribunal believes this was appropriate, largely for practical reasons. The National Haemophilia Treatment Centre was aware that heat–treated commercial concentrates were immediately available. It was presumably aware that the BTSB had not carried out any work on incorporating heat treatment in their fractionation processes and it was reasonable to allow some time for the BTSB to develop those processes. The belief that BTSB products carried much less risk of transmission of HIV infection was also relevant to the distinction made. The National Haemophilia Treatment Centre were also entitled to accept the assurances from the BTSB that the matter was receiving urgent attention and that they would heat–treat their products within a short period.

When the BTSB did not do so, the Tribunal believes the primary obligation lay upon the BTSB to inform the National Haemophilia Treatment Centre of that fact and of when heat–treated product was likely to become available. There is no written record of them doing so. Professor Temperley had a recollection of verbal discussions with the BTSB in which he was initially given to understand heat–treated Factor IX would be available by March 1985, then by April 1985 and, finally, at the time he left to take sabbatical leave in May 1985, by September. The Tribunal believes as time went on it would have been appropriate for the National Haemophilia Treatment Centre to have sought written clarification from the BTSB of when heat–treated products would be available. The Tribunal believes it would have been particularly appropriate for Professor Temperley to do so before he went on sabbatical leave to provide a clear record for the information of his locum.

(2) Whether the National Haemophilia Treatment Centre should have switched all haemophilia B patients to heat–treated commercial Factor IX in February 1985 when such product became available and used such product until the BTSB produced a heat–treated Factor IX?

The balance of risk between heat–treated commercial Factor IX and indigenous Factor IX fractionated from voluntary donors presented treating doctors with a difficult choice. In England and Wales it seems the majority of treating doctors in early 1985 continued using unheated BPL Factor IX rather than switching to heat–treated commercial Factor IX. The situation in the United Kingdom was somewhat different from that of the National Haemophilia Treatment Centre in that there was no established use of unheated commercial Factor IX in the United Kingdom. It was, therefore, perhaps a greater change in policy for United Kingdom treating doctors to switch to heat–treated commercial Factor IX than it was for the National Haemophilia Treatment Centre, accustomed as they were to using unheated commercial Factor IX. To switch all haemophilia B patients to heat treated commercial Factor IX nonetheless required a major change in the whole thrust of policy since 1983 to prefer BTSB product to commercial concentrates wherever possible. The efficacy of heat treatment in preventing the transmission of HIV was still largely unproven in February 1985. The balance of opinion and practice had not yet shifted decisively in favour of using heat treated commercial product. Viewed according to the information available in February 1985, the Tribunal does not think it can properly be said the National Haemophilia Treatment Centre should have switched all haemophilia B patients to heat treated commercial Factor IX in February

1985. With the benefit of hindsight, it is obviously a matter of great regret that they did not do so since it would have avoided the subsequent infection of haemophilia B patients by unheated BTSB Factor IX, but the Tribunal is required to consider the matter without hindsight according to the information which was then available and the then prevailing relevant medical and scientific opinion and practice.

(3) Whether Professor Temperley should have made such a decision either:-

(a) before going on sabbatical leave in May 1985; or
(b) when the matter was brought to his attention by his Locum, Dr. Helena Daly, in August 1985?

The Tribunal does not consider that the balance of opinion and practice had shifted decisively in favour of switching to heat–treated commercial Factor IX before Professor Temperley went on sabbatical leave in May 1985. The Tribunal believes the balance had shifted decisively before the matter was brought to Professor Temperley's attention by Dr. Helena Daly in August 1985. The Tribunal believes Professor Temperley ought then to have instructed Dr. Daly to stop using unheated BTSB Factor IX and to switch all haemophilia B patients to heat–treated commercial Factor IX until heat–treated BTSB product became available. In his evidence to the Tribunal, Professor Temperley seemed to accept he should have done so. As already noted in Part III, Chapter 4, both Elstree and Edinburgh had stopped issuing unheated Factor IX in May 1985, and use of unheated Factor IX had probably ceased in Scotland by May 1985 and in England and Wales by July 1985. The Tribunal appreciates that Professor Temperley was on sabbatical leave and not involved in haemophilia matters in August 1985. He was, however, located at the Royal Free Hospital London at the time Dr. Helena Daly brought the problem to his attention and it would not have been a difficult matter for him to ascertain the then prevailing policy and practice in the United Kingdom.

(4) Whether Dr. Helena Daly dealt appropriately with the issue of the continued use of unheated Factor IX and cryoprecipitate by bringing the matter to the attention of the BTSB and Professor Temperley.

Dr. Helena Daly was one of the doctors who acted as locum for Professor Temperley while he was on sabbatical leave. As a locum, Dr. Daly's authority to decide matters of fundamental policy was limited. The Tribunal is satisfied that she dealt entirely appropriately with the issue by bringing it to the attention of the BTSB and Professor Temperley for their decision. Indeed, as has already been stated in Part III, Chapter 4, the Tribunal believes the decision by the BTSB on the 14 August to commence heat treating Factor IX was probably taken in response to Dr. Daly's intervention.

(5) Whether the National Haemophilia Treatment Centre should have recalled all unheated BTSB Factor IX from patients when heat treated Factor IX was supplied by the BTSB to the National Haemophilia Treatment Centre in October/November 1985.

The Tribunal believes the National Haemophilia Treatment Centre should have recalled all unheated BTSB Factor IX from patients in October/November 1985. It might not then have been possible to replace immediately unheated BTSB Factor IX with heated BTSB Factor IX for home treatment due

to the arrangement that heated BTSB Factor IX was to be used first in St. James's Hospital so that any reaction by patients could be observed. The Tribunal believes the National Haemophilia Treatment Centre should not have permitted continued use of unheated BTSB Factor IX after October/November 1985 and if necessary it should have been replaced with heated commercial Factor IX until heat treated BTSB Factor IX became available for general use.

A recall of product from patients would have involved a direction from the Medical Director of the National Haemophilia Treatment Centre to Mr. Lynam of St. James's Laboratory who would then have carried it out. Dr. Frederick Jackson was Professor Temperley's locum in October 1985. Neither he nor Professor Temperley who returned from his sabbatical leave at the beginning of November 1985 had any recollection of whether such a recall took place. There is no surviving record of any direction at that time for a recall. Mr. Lynam had no recollection of being instructed to arrange a recall. The only evidence suggesting a recall took place was that St. James's Hospital returned a significant quantity of unheated BTSB Factor IX to the BTSB in May 1986. Mr. Lynam suggested this may have been recalled from patients. There could be other explanations for the presence of a quantity of unheated BTSB Factor IX in St. James's Laboratory in May 1986. The Tribunal thinks it probable if a recall from patients had taken place it would have generated some written record. On the basis of the evidence available, the Tribunal thinks it unlikely that the National Haemophilia Treatment Centre organised a recall of unheated BTSB Factor IX from patients in October/November 1985.

There was a very unfortunate focus for this issue. One of the persons with haemophilia B infected with HIV was a person given the pseudonym "Mark". His medical records indicate that a test for HIV antibodies of a sample taken in March 1986 was negative but a test of a sample of the 11 August 1986 was positive. "Mark" received treatment from BTSB Factor IX batch no. 90753, one of the batches subsequently identified as likely to have caused HIV infection. He initially received treatments in August and September of 1985 and then a series of treatments, mostly by way of home treatment, between the 5 November 1985 and the 20 February 1986. Since the HIV antibody test of a sample taken in March 1986 was negative, it is most unlikely "Mark" was infected by the treatments he received in August or September 1985. It is probable, therefore, he was infected by one or more of the treatments he received between the 5 November 1985 and 20 February 1986.

If contrary to what the Tribunal believes to be probable, a recall of unheated BTSB Factor IX from patients was organised by the National Haemophilia Treatment Centre in October/November 1985, it did not succeed in recalling that product from "Mark" with apparently tragic consequences for him.

(6) Whether it was appropriate for the National Haemophilia Treatment Centre to continue to use freeze-dried cryoprecipitate, produced by the BTSB and not subjected to any form of heat treatment, until October 1985?

In the section on BTSB freeze-dried cryoprecipitate in Part III, Chapter 4, the Tribunal has already drawn attention to the difference in risk involved in exposure to BTSB Factor IX fractionated from pools of 500 to 1,000 donations and cryoprecipitate, prepared from approximately 5 donations. The Tribunal there expressed the view that the shift in opinion and practice against the use of cryoprecipitate was not quite as decisive and general as that against the use of unheat treated concentrate. While the balance was clearly shifting in favour of the use of heat treated commercial concentrate, the situation was not sufficiently clear cut to enable the Tribunal to conclude that all use of BTSB freeze-dried cryoprecipitate should have ceased prior to October 1985. There was fortunately no evidence to suggest that any person was, as a matter of probability, infected with HIV as a result of treatment with cryoprecipitate at the National Haemophilia Treatment Centre.

(7) Whether the National Haemophilia Treatment Centre should have informed treating centres and doctors outside of the National Haemophilia Treatment Centre of its decision not to use any further unheated BTSB Factor IX or cryoprecipitate after November 1985?

It seems the National Haemophilia Treatment Centre did not inform other doctors of their decision. The Tribunal believes they should have done. The Tribunal is not ignoring the limited resources available to the National Haemophilia Treatment Centre and the lack of structure at the time for communicating with treating doctors who did not attend the NHSCC. Professor Temperley also stated in evidence that when he informed the BTSB of the decision of the National Haemophilia Treatment Centre he assumed the BTSB would cease issuing unheated BTSB Factor IX or cryoprecipitate to other centres and treating doctors by November 1985. While this was perhaps a reasonable assumption, the Tribunal believes the matter was of such importance that the National Haemophilia Treatment Centre ought to have informed other doctors, perhaps using the mechanism of the NHSCC, to communicate with doctors who attended NHSCC meetings and should either themselves have communicated directly with other doctors or should have ascertained from the BTSB whether they were continuing to issue unheated BTSB Factor IX or cryoprecipitate to other treating doctors.

Armour Factorate Batch No. A28306

In Part III, Chapter 1, the Tribunal set out its reasons for concluding that the probable cause of infection of a boy given the pseudonym "Simon" with HIV was a treatment of Armour Factorate Batch No. A28306 which he received at the National Children's Hospital on the 21 February 1986. In Part III, Chapter 4 the Tribunal summarised the evidence it heard of emerging information during 1985 and 1986 about the efficacy of dry heat treatment and in particular the Armour protocol of 60 degrees centigrade for 30 hours. In 1986 the National Haemophilia Treatment Centre purchased a quantity of heat treated Armour Factorate directly from Armour rather than through the BTSB. It apparently did so to supplement supplies of Factor VIII custom fractionated by Travenol for the BTSB which was not always available in sufficient quantities to meet the national requirement. The issue which arises is whether any information had come or should have come to the attention of Professor Temperley before 21 February 1986 which should have caused him to refrain from using the Armour product. Professor Temperley stated in evidence that he was not aware of any such information prior to the 21 February 1986 and the Tribunal does not believe that there was any information which should have come to his attention before that date which should have resulted in his refraining from using Armour product.

Dr. Peter Jones referred in his evidence to rumours which circulated during the second half of 1985 and early 1986 of seroconversions having occurred in patients being treated with heat treated concentrates. Any such rumours appear to have been non-specific and not directly related to the Armour product. The paper delivered by Dr. Jones to a conference in Newcastle on AIDS from 11 to 13 February 1986 has already been referred to. The relevant passage in a general paper on AIDS and haemophilia was contained in the following paragraph:-

> *"Laboratory experiments show that the AIDS related virus does not like heat and is readily destroyed. Most manufacturers now use heat during the preparation of the concentrates, although chemical methods of viral inactivation are also being studied. Whatever method is used, complete AIDS inactivation cannot yet be guaranteed; hence the enormous*

importance of discouraging people in high risks groups from donating, and/or continuing to check individual donations by the most sensitive test available. Only time and careful follow up will tell us how effective introduction of the more expensive heat-treated materials has been. To date I know of four possible break-throughs: three are known to CDC and have been described to me by Dr. Peter Levine as being probable seroconversion to anti-HTLV III positivity in one case and possible seroconversion in two others; the fourth case is about to be reported by Dr. Breederveld and is perhaps the most convincing. This patient is known to be in no other risk group, and was sero-negative when started on heat treated material, becoming positive after almost a year's treatment. This takes him well past the known incubation period between infection and seroconversion."

There is no evidence that Professor Temperley attended the Newcastle conference or that he became aware at the time of Dr. Jones' paper. Even if Professor Temperley had done so, there was nothing in Dr. Jones' contribution to the conference which would or should have prompted Professor Temperley to refrain from using Armour product.

The letters to the *Lancet* referred to in Part III, Chapter 4, were all published after the 21 February 1986. The Tribunal is therefore satisfied that no information had come, or should have come, to the attention of Professor Temperley before the 21 February 1986 which should have caused him to refrain from using Armour product.

The Armour dry heat–treated Factor VIII was withdrawn from the United Kingdom and this country in October 1986 following reported seroconversions among persons with haemophilia in the United Kingdom. The National Haemophilia Treatment Centre apparently continued to use the Armour product until it was withdrawn. Fortunately, there is no evidence that any person other than "Simon" was infected with HIV during this period. The Tribunal has nonetheless considered whether the National Haemophilia Treatment Centre should have stopped using Armour product between February 1986 and October 1986.

Professor Temperley stated that he had no recollection of seeing the letters published in the Lancet at the time. He did say that he was aware from conversations with his colleagues in the United Kingdom of what he described as a "query query" about the Armour heat–treated product at that time. The Tribunal heard evidence that word was spreading in the medical community at that time about the possible association of a seroconversion with the Armour dry heat–treated product. Mr. Keating, of the BTSB, brought that information back from attending a Conference on AIDS in Paris in June 1986. Dr. Colvin heard the same information at a World Haemophilia Federation Conference in Milan also in June 1986. Dr. Colvin said he was considerably shocked by the information because he had no prior knowledge of any suspected difficulty with the Armour product. He also said his reaction was to telephone his hospital from Milan to ask them to check whether they had any Armour product in stock and if they had to stop using it. Professor Lee on the other hand apparently had no knowledge of any problem with the Armour product until its withdrawal was announced in October. It also seems there was no recommendation from the U.K. Haemophilia Centre Directors to stop using the Armour product at any time before the withdrawal in October. Indeed, as late as September 1986 at a meeting of the AIDS Group of the United Haemophilia Centre Directors, attended by Professor Temperley, the following non-specific reference to seroconversions was recorded in the minutes:-

"*Seroconversions Following Treatment with Commercial Concentrates.*
The Chairman said that the rumours were rife regarding seroconversions following treatment with commercial concentrates and he was not sure how strong the evidence was. Dr. Kernoff said he thought it was going a little too far to say the seroconversions were undoubtedly due to commercial concentrates as some of the data were not clear cut."

Armour heat–treated Factor VIII was one of a number of heat treated concentrates which were being used by the National Haemophilia Treatment Centre in June 1986. There was no evidence to suggest there would have been any difficulty of continuity of supply had they stopped using the Armour product. In those circumstances, notwithstanding the apparent uncertainty of the information which reached Professor Temperley from his discussions with colleagues in the United Kingdom, the Tribunal believes he should have reacted to that information, as did Dr. Colvin, by directing that no further use be made of the Armour product.

Part V

Division III
Chapter 4

The National Haemophilia Treatment Centre: Choice of Product in the Period after 1 January 1987

In examining the work of the National Haemophilia Treatment Centre in choice of products during this period, the focus of the Tribunal is on the risk of infection with NANB hepatitis. Much of the relevant factual material and expert evidence has already been set out in Part III and in particular in Chapter 5 and the sections of Chapter 4 dealing with Viral Inactivation 1985/1986, Appreciation of the Clinical Significance of NANB Hepatitis and Viral Inactivation Decisions taken by the BTSB during 1985/1986. In addition to the matters there set out, the Tribunal believes a number of further considerations were of particular relevance to treating doctors in this period.

HIV and AIDS were very much the centre and focus of attention. In this country seroconversions among haemophilia B patients and of the patient "Simon" had taken place during 1986. The first priority in choice of product decisions was therefore to obtain product which was believed to be safe against the risk of transmission of HIV. The terrible consequences of HIV infection became manifest as increasing numbers of persons infected with HIV went on to develop AIDS. Attempting to deal with the resulting illnesses played a growing part in the clinical practice of treating doctors. By contrast, although awareness of the potentially serious consequences of NANB infection was increasing during this period there still were not many patients presenting with significant clinical symptoms as a result of NANB infection.

A number of different methods of viral inactivation were developed with the intention of excluding or reducing the risk of transmission of NANB hepatitis. In the absence of a specific test for hepatitis C antibodies, the clinical evidence for their efficacy was often limited or difficult to interpret. This led to uncertainty and increased the difficulty for treating doctors in choice of product decisions. The conclusion by Dr. Prince and others in their article, “The Development of Virus Free Labile Blood Derivatives – A Review”, *European Journal of Epidemiology* June 1987, reflects this uncertainty:-

> *"In conclusion, the present status of virus sterilisation in labile blood derivatives reveals it to be at an early stage of development. Several processes have been found to be inadequate; others still look very promising, although this too may prove to be an illusion as further data accumulates.*

Continued process development is required unless natural coagulation factors are replaced by those based on recombinant DNA technology."

A similar lack of certainty is reflected in the conclusions by Professor Mannucci and Colombo in another survey article, "Virucidal Treatment of Clotting Factor Concentrates", the *Lancet* 1 October, 1988:-

"*To date published clinical studies indicate that viral inactivation by pasteurisation and, to a lesser extent, by vapour heating definitely improve the safety from hepatitis of Factor VIII concentrates over that of unheated concentrates and concentrates heated in the lyophilised state at temperatures lower than 80 degrees centigrade. Other methods (such as solvent-detergent, superheating at 80 degrees centigrade and monoclonal antibody techniques) might prove to be of equivalent safety, but the small numbers studied and the lack of details allow us, at the moment, only to say "presumed innocent". Despite the limited number of studies available, it appears that Factor IX concentrates are also becoming safer, because the viral inactivation procedures used for them can be more vigorous than those used for the more labile clotting Factor VIII.*"

There seems to have been a divergence of opinion and practice between the United States and Europe. It would seem from Dr. Dietrich's evidence that the risk of NANB hepatitis was not given any significant weight in her choice of product decisions until after hepatitis C antibody testing became available in 1989. Dr. Dietrich observed in her evidence that there seemed to be more concern about hepatitis in Europe. She seems to have been correct in that observation. The Tribunal formed the impression from the evidence of Professor Mannucci and the treating doctors from the United Kingdom that, although avoiding the risk of HIV transmission remained the priority, avoiding the risk of NANB hepatitis became a matter of increasing concern from 1987 onwards. Insofar as there was a divergence of opinion and practice between Europe and the United States, the Tribunal considers it appropriate to assess the work of the National Haemophilia Treatment Centre primarily by reference to the standards and practice applicable in Europe. In doing so the Tribunal will not ignore the advantage enjoyed by treaters in the United Kingdom arising from the fact that the standard product supplied to them by Elstree and Edinburgh, dry heated at 80 degrees centigrade, did not transmit NANB hepatitis.

Choice of Products, 1987 and 1988

As already described in Part III, during 1987 and 1988 the National Haemophilia Treatment Centre agreed to use Factor VIII custom fractionated by Armour for the BTSB from Irish plasma heated at 68 degrees centigrade for 72 hours and Factor IX fractionated by Armour from Irish plasma and heated by the BTSB at 60.6 degrees centigrade for 152 hours. Apart from the tacit acceptance involved in using the BTSB products, the BTSB sought and obtained the approval of Professor Temperley for the heat–treatment regimes involved. The National Haemophilia Treatment Centre also used Koate (Factor VIII) and Konyne (Factor IX), commercial concentrates fractionated by Cutter and heated at 68 degrees centigrade for 72 hours. As again was already stated in Part III, in the Tribunal's view both of these heat treatment protocols would have been regarded as being effective against the risk of HIV infection. There were no published results of clinical studies carried out according to I.C.T.H. recommendations. They were not generally regarded as providing protection against the risk of NANB hepatitis although they probably reduced the incidence of transmission. They would not have been regarded by Professor Temperley as providing full protection against the risk of transmission of NANB hepatitis.

Having regard to the information which would then have been available to him as a treating doctor, the Tribunal does not believe that Professor Temperley would have been in a position to suggest to

the BTSB a system of viral inactivation for their product which would have provided better protection against the risk of transmission of NANB hepatitis. The Tribunal believes it was reasonable for the National Haemophilia Treatment Centre to accept the BTSB product and to use it in conjunction with Koate and Konyne as the standard treatment for persons with haemophilia. The Tribunal also however believes that from 1987 onwards the National Haemophilia Treatment Centre should have sought and used product believed to be better protected against the risk of transmission of NANB hepatitis for the treatment of previously untreated patients and infrequently treated patients who had only previously been exposed to cryoprecipitate.

Previously Untreated Patients

The concept of a special product for previously untreated patients was not novel in 1987. It was well known among treating doctors. At a meeting on the 19 June 1987 with representatives of Armour Professor Temperley was recorded as having inquired about supplies of "pasteurised" product for the treatment of previously untreated patients. The National Haemophilia Treatment Centre never had a special product for the treatment of previously untreated haemophilia B patients during this period and only implemented a policy for previously untreated haemophilia A patients in December 1988. The most obvious product for such a policy for haemophilia A patients in 1987 and 1988 would have been pasteurised Factor VIII concentrate, probably either Haemate P or Koate HS. It may not have been possible to obtain supplies of pasteurised Factor IX at this time. The Tribunal believes the appropriate product for previously untreated haemophilia B patients would have been Factor IX heated at 80 degrees centigrade obtained either from Elstree or Edinburgh. It seems from the evidence of Dr. Snape and Dr. Foster that Elstree and Edinburgh would have been willing to supply sufficient quantities of Factor IX to treat previously untreated patients if requested to do so.

The Tribunal is not ignoring the limitations and qualifications in the evidence for the clinical efficacy of heat treatment at 80 degrees centigrade published in 1986 already referred to in Part III. Dr. Snape stated in evidence that the absence NANB infection following the use of the Elstree product would have been generally known among United Kingdom doctors and scientists by the Autumn of 1986 and increasingly internationally also. Having regard to Professor Temperley's close association with the United Kingdom Haemophilia Directors, the Tribunal believes this information ought to have reached him by no later than the end of 1986. Even if the Elstree product was not then proven safe against the transmission of NANB hepatitis, it was certainly safer than product dry heat treated at lesser temperatures and, in the Tribunal's view, there was sufficient evidence for its effectiveness to warrant using it as a special product for previously untreated patients.

The Tribunal does not think that lack of available products was the explanation for the failure of the National Haemophilia Treatment Centre to introduce a special policy for the treatment of previously untreated patients. Producers of new and apparently improved products were always willing to make them available for use by previously untreated patients, particularly if the patients were willing to take part in clinical studies of the use of the product. As already noted in Part III, Chapter 4, in October 1986 Dr. Walsh discussed with Professor Temperley the possibility of purchasing Factor IX from Elstree, although what seems to have been discussed was the possibility of doing so to supply part of the standard product for treatment of persons with haemophilia B and it doesn't seem that any reference was made to the Elstree product having any special advantage in terms of NANB hepatitis viral inactivation. Professor Temperley agreed in evidence that it would probably have been possible at all stages for him to have obtained the relatively small quantities of Factor IX from Elstree which would have been required to provided treatment for previously untreated patients. It seems to the Tribunal that Professor Temperley did not direct his mind sufficiently at this time to the risk of infection of previously untreated patients with NANB hepatitis and finding a means of

avoiding or reducing that risk. While the Tribunal accepts that this would have been much less of a priority than avoiding the risk of HIV and can understand that the National Haemophilia Treatment Centre was heavily preoccupied in dealing with the trauma of the onset of AIDS in its patients, it nonetheless believes that from 1987 onwards the National Haemophilia Treatment Centre should have been providing product for its previously untreated patients with a better system of viral inactivation against the risk of NANB hepatitis than dry heat treatment at 60 or 68 degrees centigrade.

Professor Temperley's Letter of 14 June 1988

Professor Temperley's letter of 14 June 1988 *(Appendix 24)* and the events leading up to it including Mr. Keyes memorandum of 11 May 1988 *(Appendix 22)* and the U.K. Haemophilia Reference Centre Directors' recommendations of 16 May 1988 *(Appendix 23)* were analysed in Part III, Chapter 5 in the section dealing with the decision in June 1988 to continue the arrangement with Armour for 1989. The memo from Mr. Keyes set out three options; continuing with Armour, changing to monoclonal product or changing to pasteurised product. In its analysis in Part III the Tribunal expressed the view that it was not feasible to provide the national requirement in pasteurised product and that it was understandable that Professor Temperley did not at that time advise changing to monoclonal product which was still relatively unproven. If the matter is considered within the parameters set in Mr. Keyes' memorandum, continuing the existing arrangement with Armour was the only remaining option.

In advocating continuing the arrangement with Armour Professor Temperley dealt with the risk of both HIV transmission and NANB transmission. He pointed out that Cutter Koate HT heated at 68 degrees centigrade for 72 hours had retained its reputation in relation to HIV infection and that there had been no seroconversions in this country for over twelve months using Cutter Koate HT and the Factor VIII custom fractionated by Armour for the BTSB using the same heat treatment protocol. The Tribunal believes that Professor Temperley was entitled to infer that the Factor VIII custom fractionated by Armour was safe from the risk of transmission of HIV and, of course, such proved to be the case. Professor Temperley's letter expressly recognised that the first generation dry heat treatment "*seems inadequate to destroy*" the NANB hepatitis virus. In advocating the continuation of the arrangement with Armour despite the acknowledged continuing risk of transmission of NANB hepatitis, Professor Temperley stated, "*virtually all of our treated haemophiliacs have had NANBH*" and for "*virgin patients*" *(i.e. usually infants)* "*Haemate P will be used protecting them from NANBH*".

Although the incidence of NANB hepatitis among persons with haemophilia who had received any significant quantity of treatment was very high, not every such patient had been infected, a point recognised by the use of the phrase "*virtually all*". The implicit assumption that no further harm would come to those patients who had already been infected with NANB hepatitis was questioned in the passage from the United Kingdom Haemophilia Centre Directors' recommendations quoted in Part III:-

> "*If there are supply problems, patients at highest risk (e.g. those previously unexposed or only lightly exposed to blood products) should take priority in the use of products perceived to carry the least risk of viral transmission. It should be appreciated that it is not known whether re-exposure to HIV or hepatitis viruses in an already infected patient causes any additional hazard.*"

On the other hand, because of the low yield and high cost, there would have been problems of supply as well as cost in attempting to provide the national requirement for Factor VIII in pasteurised product. The pressures of financial stringency of the time were real pressures. The United Kingdom

Haemophilia Centre Directors' recommendations included Koate HT among the products which might be used for multi-transfused patients but not for patients with little or no previous exposure to blood products.

Professor Temperley's letter can be viewed as advising that neither of the two alternatives proposed to the Armour arrangement were capable of providing for the national requirement a feasible and proven product safe against the transmission of NANB hepatitis. Such product could be obtained in the limited quantities necessary to provide for previously untreated patients. Continuing the Armour arrangement would provide product sufficient to meet the national requirement which was safe against the transmission of HIV which remained the number one priority. Viewed in this light, the Tribunal believes the recommendations contained in Professor Temperley's letter were understandable.

The provision of special product for previously untreated patients was an essential element of the policy contained in the letter. The Tribunal believes such provision should have been in place from 1987. When it was not, one would expect it should have been implemented immediately in June 1988. It was not. There was apparently a problem of obtaining supplies of Haemate P and a policy of providing pasteurised product for previously untreated patients with Haemophilia A was not implemented until December 1988 at which time some Koate HS, a Cutter pasteurised product, which had been used in the National Haemophilia Treatment Centre since November 1987 on a "named patient basis" was diverted to previously untreated patients.

Professor Temperley's letter to the BTSB dealt only with Factor VIII. The acceptance by the BTSB of his advice to continue the existing arrangement with Armour had the effect of continuing the production of Factor IX custom fractionated by Armour from Irish plasma and heat treated by the BTSB at 60.6 degrees centigrade for 152 hours. That heat treatment protocol was not regarded as providing any better protection against the risk of transmission of NANB hepatitis than heating at 68 degrees centigrade for 72 hours. The same necessity existed to provide special product for previously untreated patients yet no such policy was every adopted by the National Haemophilia Treatment Centre. If the reasoning applied in Professor Temperley's letter to the situation of persons with haemophilia A had been applied to that of persons with haemophilia B, the necessity for such a policy was equally clear. For some reason this was not done. The Tribunal believes the absence of such a policy was unacceptable and became increasingly unacceptable in the period from May 1988 until January 1990 and the advent of solvent detergent product. It may not have been possible to obtain pasteurised Factor IX during that period but it would have been possible to obtain Factor IX heated at 80 degrees centigrade from Elstree or Edinburgh or to obtain sufficient supplies of solvent detergent product to supply previously untreated patients.

Hepatitis C Infections

The Tribunal heard evidence from Dr. Lawlor of an examination of the hepatitis C status of patients of the National Haemophilia Treatment Centre born after the 1 January 1985. Of 22 haemophilia A patients, 3 showed indications, on testing for hepatitis C antibodies, of previous exposure to hepatitis C while being PCR negative. The remaining 19 haemophilia A patients were hepatitis C antibody negative. Two of the three haemophilia A patients who were not hepatitis C antibody negative seem to have received treatment during 1986 and therefore before the date when the Tribunal believes the National Haemophilia Treatment Centre should have had a special policy for treatment of previously untreated patients.

Of 15 haemophilia B patients, 4 were both hepatitis C antibody positive and PCR positive while the remaining 11 were hepatitis C antibody negative. Three of these 4 patients, "Henry", "Gordon" and

"Joseph" were probably infected by treatment with BTSB Factor IX batch no. 9885 which occurred after June 1989. These patients would not then have been treated with BTSB Factor IX had a policy of providing special product for previously untreated patients been in place.

"Ian" was born in 1985. His hepatitis C virus was genotype 4 suggesting he is unlikely to have been infected by BTSB product. It is not possible to identify when his infection is likely to have occurred.

"Luke"

The Tribunal heard evidence from "Luke" a person with mild haemophilia B, the fourth person infected as a result of treatment with BTSB Factor IX batch 9885. The circumstances of his infection were very particular. On the 19 September 1990 he attended at St. James's Hospital, aged approximately 18, for a dental extraction. He was treated with two treatments of Octavi, a solvent detergent treated Factor IX. On the 25 October 1990 he was treated with BTSB dry heat-treated Factor IX batch no. 9885 again in conjunction with dental treatment. He had no record of any treatment prior to these two occasions. He was subsequently unfortunately found to be hepatitis C antibody positive. The evidence establishing batch no. 9885 as the probable source of his infection is referred to in Part III, Chapter 1.

The Tribunal heard evidence on this issue from Professor Temperley and from Mr. Paul Lynam, Chief Technologist dealing with blood transfusion at St. James's Laboratory.

In January 1990 the BTSB began to supply solvent detergent Factor VIII and Factor IX custom fractionated by Octapharma to the laboratory at St. James's Hospital for the National Haemophilia Treatment Centre. On the 7 June 1990 Professor Temperley wrote a note to Mr. Lynam in the following terms:-

> *"From the 1.7.90 we should not order any further concentrates of F.VIII which are dry heat-treated unless there is a serious emergency of one sort or another. If such an emergency occurs then dry heat-treated products should only be ordered following discussion. Preference should be given to solvent detergent, monoclonal antibody/pasteurised and monoclonal antibody/solvent detergent products until further notice."*

Probably by June 1990, and certainly by August or September, 1990, the laboratory in St. James's was neither ordering nor issuing BTSB dry heat-treated Factor IX. The standard product was solvent detergent Octapharma, the product used for treatment of "Luke" on the 19 September 1990.

Mr. Lynam explained that a quantity of BTSB dry heat-treated Factor IX, issued to a patient in the previous year, 1989, to provide cover for a holiday period, had been subsequently returned to the laboratory. This product was then reissued by the laboratory in response to a routine request for Factor IX from the hospital without reference to Professor Temperley. It was then apparently prescribed for "Luke's" treatment by a member of the medical staff, again without specific reference to Professor Temperley.

"Luke" clearly should not have been treated with dry heat-treated treated product in October 1990. In the Tribunal's view it was probably inappropriate for dry heat-treated product to have been used for the treatment of any patient at that stage. That it was used for the treatment of "Luke" whose only previous treatment was a single treatment with solvent detergent product was inexcusable.

In explaining why the dry heat-treated Factor IX was issued despite Professor Temperley's note of

the 7 June 1990, Mr. Lynam correctly pointed out that the note referred to Factor VIII only and that the instruction was not to order any further heat-treated Factor VIII without reference to Professor Temperley rather than not to issue it. The Tribunal believes Professor Temperley's note ought to have dealt with heat-treated Factor IX as well as Factor VIII and ought to have directed that neither should be issued from the laboratory without reference to him. If this had been done it would have stopped the use of dry heat-treated Factor VIII and Factor IX at source. It would probably also have been appropriate for Professor Temperley to give clear instructions to the medical staff in the National Haemophilia Treatment Centre that no further use of dry heat-treated product was to be made without reference to him.

As Medical Director, Professor Temperley had the authority and obligation to give Mr. Lynam directions about products to be ordered and issued by the laboratory at St. James's Hospital. In the ordinary way Mr. Lynam would be both entitled and indeed obliged to comply with any written directions from Professor Temperley without further reference to him. The return of the heat-treated BTSB Factor IX to the laboratory and its availability for issue at a time when it was no longer the standard treatment did create a particular situation. Although Mr. Lynam is quite correct in his observations on Professor Temperley's note, the note did indicate a clear preference for solvent detergent, pasteurised and monoclonal product over dry heat-treated. The Tribunal believes in the particular circumstances it would have been appropriate for Mr. Lynam to have consulted Professor Temperley before issuing the dry heat-treated product in response to a standard request for Factor IX concentrate for treatment.

Solvent Detergent and Beyond

There is no evidence that any person with haemophilia in this country was infected with hepatitis C as a result of treatment with the solvent detergent Octapharma product. In 1992 an outbreak of hepatitis A occurred which was believed to be associated with that product. Hepatitis A is not included in the definition of infection in the Tribunal's Terms of Reference. There is no evidence that any of the products used after 1992 caused hepatitis C infection. There is no evidence that any person with haemophilia was infected with HIV after the 1 January 1987. While it is not strictly relevant to the Tribunal's Terms of Reference it may be appropriate to note that before Professor Temperley retired in 1995 recombinant concentrate was available for treatment of persons under the age of 12 years and by 1997 was available for the treatment of all persons with haemophilia in this country. Although the Tribunal heard evidence of very recent interruptions in the supply of recombinant concentrate due to worldwide shortages, the fact that recombinant concentrate is now the standard treatment for all persons with haemophilia and similar inherited coagulation disorders provides vital protection against the risk of transmission of blood borne disease. In that regard, the situation in Ireland now compares very favourably with many other countries and was remarked on enviously by many of the international experts who came to the Tribunal to give evidence.

Part V

Division III
Chapter 5

The National Haemophilia Treatment Centre: Testing for HIV and Hepatitis C Antibodies

HIV Antibody Testing

In November 1984 Dr. Shattock of U.C.D. and the Virus Reference Laboratory contacted Professor Tedder of Middlesex and obtained his agreement to carry out HIV antibody tests on samples from persons with haemophilia. At that time the Virus Reference Laboratory had not the capacity to carry out HIV antibody testing itself.

On the 29 November 1984 Professor Temperley wrote to the relevant medical and nursing staff in the National Haemophilia Treatment Centre:-

> "*We are being given the opportunity to have HTLV III antibody estimations carried out on our haemophiliacs. This is being done with the co-operation of Dr. Shattock and Professor Keane. It would be extremely helpful if all severe haemophilia A and B patient were screened as quickly as possible.*
>
> *Please send 5 ml clotted blood with a request form, as for screening test for hepatitis B to Dr. Shattock, Virus Reference Laboratory, Ardmore, U.C.D., Belfield, Dublin 4.*
>
> *In view of the urgency, all should participate in requesting the estimation. Ms. McKeever should be informed when a sample is being sent so there is no duplication.*"

Professor Temperley could not remember how patients were contacted and asked to attend for the purpose of having a sample taken. Contact was made, particularly with patients with severe haemophilia. His recollection was that these patients would have been told the sample was being taken for the purpose of a HTLV III antibody test. He said samples would also have been taken from patients who attended for routine pre-arranged appointments. In such cases he thought the purpose of the sample may not always have been explained.

On the 19 March 1985 Dr. Shattock sent Professor Temperley the results of the testing carried out by Professor Tedder on 129 samples. The results were set out in the form of hand-written sheets containing a date for the sample, the name of the patient, the haemophilia type and the test result. 48 of the 129 samples were shown as positive. On 6 samples, the result from Middlesex was stated as follows:-

> "*Neg please repeat (AB below cut-off)*".

The six samples were underlined by Dr. Shattock. In his note to Professor Temperley enclosing the results he stated:-

> "*Enclosed HTLV III results from Middlesex. I have underlined those giving borderline results. These need re-testing on a fresh specimen.*"

A second set of results from Middlesex was sent by Dr. Shattock to Professor Temperley with a letter dated the 24 April 1985. On this occasion 22 samples were involved of which 4 were recorded as positive.

Commercial HIV antibody test kits became available to the Virus Reference Laboratory at the end of April and, after some initial experimentation and checking of the commercial kits, the Virus Reference Laboratory started testing samples for the National Haemophilia Treatment Centre. On the 6 June 1985 the Virus Reference Laboratory sent the results of tests carried out on 25 samples to the National Haemophilia Treatment Centre. Six of these tests were positive. Thereafter the Virus Reference Laboratory seem to have carried out tests and to have provided results on an individual basis as requested from time to time by the National Haemophilia Treatment Centre.

The Tribunal believes the arrangement made with Professor Tedder at Middlesex provided timely and, indeed, early access to HTLV III antibody testing for persons with haemophilia in this country. It was sensible to concentrate on persons with severe haemophilia as they would have been exposed to the greatest risk of infection. Arrangements were made during 1985 for samples to be taken from those who had not already been tested and to have them tested at the Virus Reference Laboratory. Again it seems that persons with severe or moderate haemophilia are likely to have been tested before those with mild haemophilia or Von Willerbrand's disease. This was partly because those with mild haemophilia and Von Willerbrand's disease were, correctly, thought to be at much less risk of infection and partly because such persons were much less likely to have been in regular contact with the National Haemophilia Treatment Centre than those with severe haemophilia. With some individual exceptions, the Tribunal does not think there was any undue delay in offering HIV testing.

The practice described by Professor Temperley of taking an apparently routine blood sample from a patient on a routine visit and sending it for a HIV antibody test without informing the patient would not be in any way acceptable today. Standards were then different. Dr. Colvin stated in evidence that all HIV antibody tests in his centre were carried out on stored samples without informing the patients until the results became available. What does seem surprising about what occurred in the National Haemophilia Treatment Centre is that it seems almost to have been a matter of chance as to whether patients were informed of the purpose for which the sample was taken. Some were and some were not.

However, the major problem disclosed in evidence heard by the Tribunal was the length of time it took to inform patients of their results.

Professor Temperley was on sabbatical leave from the 1 May 1985 to the 31 October 1985. From the 1 May to the 9 June Professor Temperley's duties were covered by Dr. Peter Daly, Consultant Oncologist, St. James's Hospital, taking on Professor Temperley's duties in addition to his own. For a brief period from the 10 June to the 30 June a Senior Registrar in Haematology acted as Professor Temperley's locum. From the 1 July to 30 September 1985 Dr. Helena Daly acted as locum followed by Dr. Frederick Jackson from the 1 October 1985 until Professor Temperley's return on the 1 November 1985.

Samples from a total of 133 patients of the National Haemophilia Treatment Centre had been sent to Middlesex for testing (the number of patients differs from the combined total number of samples in the two groups of results from Middlesex because in some cases there was more than one sample from an individual patient). 54 of the 133 patients were HIV positive. Only 8 HIV positive patients and one HIV negative patient had been informed of their results before Dr. Daly arrived. She informed a further 32 patients with HIV positive results and 14 patients with HIV negative results. When Dr. Daly left at the end of September 1985 the rest of the patients on the Middlesex list still had not been informed of their results. In addition, further patients had been tested since March 1985 some, though not all, of whom had been informed of their results by Dr. Daly and there were patients, mainly patients with mild haemophilia and Von Willebrands disease, who had not yet been tested at the end of September 1985. The patients who had not been informed of their results by Dr. Daly were, for the most part, informed by Dr. Jackson during October 1985 or by Professor Temperley after his return in November 1985. There were however individual cases in which patients who had samples tested in 1985 were not informed of the results until 1986 or, even, 1987.

Professor Temperley explained to the Tribunal his reasons for taking sabbatical leave. They essentially related to the pressure of his workload, some of it not associated with the care of persons with haemophilia. In the years prior to 1984 Professor Temperley had established a major haematological laboratory at St. James's Hospital, a specialist leukaemia service for both adults and children and a bone marrow transplant unit at St. James's Hospital. In addition to these project, Professor Temperley would have been sharing the ordinary duties of a consultant haematologist at St. James's Hospital with his colleagues and he was the sole consultant haematologist in the National Children's Hospital. As a result of these pressures, Professor Temperley stated that he suffered an illness, not a serious illness, in 1982 for which he received treatment and that he felt himself to be subject to great strain again in 1984. He therefore sought to arrange a period of sabbatical leave during 1984 but that it wasn't possible to put the necessary arrangements in place until May 1985.

The Tribunal has no difficulty in accepting Professor Temperley had pressing reasons for taking sabbatical leave. He thought it essential to enable him to continue to discharge his many commitment and duties.

The Tribunal also thinks Professor Temperley's absence on sabbatical leave at the time when patients were being informed of their HIV results was most unfortunate. Up to that time the Tribunal's impression is that Professor Temperley had been regarded by most persons with haemophilia as being their champion. The improvements in treatment he had introduced had both increased the life expectancy of persons with haemophilia and their quality of life. He had been supportive of the Irish Haemophilia Society and of its efforts to secure better facilities for persons with haemophilia. He had been the Medical Director of the National Haemophilia Treatment Centre since its foundation in 1971. The Tribunal has the impression that some persons with haemophilia felt Professor Temperley's absence when they were being told of their HIV results as a betrayal of their trust in him. The Tribunal is aware that anger at the doctors or hospitals who had provided treatment was a relatively common and understandable reaction by some patients when informed that they had been infected with HIV as a result of treatment with blood products. The Tribunal has

the impression that in some cases this feeling of anger and hurt was aggravated by Professor Temperley's absence.

The Tribunal has considered whether Professor Temperley should have postponed his sabbatical leave in order to himself inform his patients of their results. The Tribunal does not think it would be fair to Professor Temperley to conclude that he had an obligation to personally inform patients of their results or that he should necessarily have postponed his sabbatical leave until he did so. The Tribunal does however believe that when Professor Temperley received the HIV antibody results from Middlesex in March and April 1985 he had an obligation to ensure that patients were told of their results reasonably promptly. It was up to him to make a plan of how to inform the patients of their results. There were 133 persons tested and, therefore, a certain amount of time was going to be required to inform them of their results. It had to be done with sensitivity and care to respect patients' right to confidentiality and to minimise to the greatest extent possible the alarm and anxiety which the positive results would necessarily cause in the haemophilia community. It wasn't an easy or simple matter. It required special arrangements to be made. If Professor Temperley was to go ahead with his planned sabbatical leave, he should, in the Tribunal's view, before going on leave have ensured that there would be an appropriate system in place to inform patients of their results reasonably promptly

The Tribunal found very little evidence that Professor Temperley had put any arrangements in place for telling patients of their results before departing on sabbatical leave. He said in evidence that he underestimated the medical resources which would be required for the task. He also said that he had some understanding that Dr. Shattock and the Virus Reference Laboratory would carry out further tests on all the samples which had been sent to Middlesex to confirm the Middlesex results before patients were told. Dr. Shattock had no recollection of ever giving Professor Temperley to understand that such would be the case. Indeed he said that at the time he regarded the Middlesex test as providing the standard against which he tested some of the commercial tests which became available to the Virus Reference Laboratory. Professor Temperley agreed that he never asked Dr. Shattock or the Virus Reference Laboratory to carry out any such general re-testing of the Middlesex results.

On the 17 May 1985 Ms. Kennedy, Head Medical Social Worker, wrote to Professor Howie, Chairman of St. James's Hospital Board, looking for additional social workers to provide services to persons with haemophilia. She referred in the letter to a meeting attended by Professor Temperley prior to his departure at which a decision was made "*that those who have been tested and found to be HTLV III positive should be seen as soon as possible by a doctor in order to explain the medical implications of this and also by a social worker*". The decision recorded at that meeting would not be consistent with the concept that there would be a general delay in informing patients of their results until after further confirmatory tests had been carried out.

The Tribunal believes Professor Temperley did not put in place any system before going on sabbatical leave which was capable of informing patients of their results reasonably promptly. It seems indeed to have been left to his locums to devise whatever system they could for informing patients and to carry out that task in addition to all their other duties without any assistance or additional resources being made available to them. It should have been clear that Dr. Peter Daly, Consultant Oncologist, who was not so much acting as Professor Temperley's locum but rather adding Professor Temperley's duties to his own workload, would be unable to inform any significant number of patients. The fundamental problem in what occurred, namely that the communication of results to patients effectively only started with the arrival of Dr. Helena Daly at the beginning of July was therefore predictable. If patients from whom samples had been taken between November 1984 and March 1985 only started to be told the results in July 1985, by definition the results would not

be communicated reasonably promptly. It was also predictable that if no special arrangements or resources were made available to assist Professor Temperley's locums that it would take some time to inform the 133 patients of their results. The Tribunal is satisfied that Professor Temperley's locums, and particularly Dr. Helena Daly, informed as many patients as they reasonably could having regard to their other commitments and to the fact that no additional resources were made available to them. The result, however, despite their best efforts was a general delay in communicating results to patients which, in the Tribunal's view, was unacceptable

Since Professor Temperley was not able to put in place a system capable of informing patients of their results reasonably promptly before he went on sabbatical leave, the Tribunal believes he should have postponed the commencement of his sabbatical, perhaps until the end of June, and that he should himself have commenced informing patients of their results during the months of May and June.

Samples Underlined in the Middlesex List for Re-testing.

The Tribunal has examined whether fresh samples were taken and re-tested in respect of the six underlined samples as directed by Dr. Shattock in his note to Professor Temperley of the 19 March 1985. It is obvious from the note recorded on the list by Middlesex and from Dr. Shattock's reference to borderline results that although they were recorded as negative there was a doubt as to whether they were truly negative. Two of the 6 samples came from one patient. A fresh sample from one of the 5 patients was included in the lists of tests sent by the V.R.L. to the National Haemophilia Treatment Centre on the 6 June 1985. Dr. Helena Daly saw a further 2 of these patients on the 10 July and 21 July respectively and further samples were taken from them on those days. Dr. Daly was unable to say whether the patients had been asked specially to attend on those days or whether they were simply attending for routine biannual visits. In the remaining 2 patients further samples were not taken until January 1986. Unfortunately, all 5 patients were found to be HIV positive on further testing. The Tribunal believes immediate arrangements should have been made to have fresh samples taken and tested in response to Dr. Shattock's note of the 19 March 1985. It seems clear no such arrangement was made in the case of the two patients where further tests were not carried out until January 1986. While it is less clear, the Tribunal believes it probable that the patients who attended in July did so for routine appointments rather than as a result of being specially requested to attend for the purpose of having a further sample taken and re-tested.

In a number of individual cases the delay in informing patients of the result of tests carried out in 1985 stretched into 1986 and even 1987. The Tribunal was not furnished with any very satisfactory explanation for this totally unacceptable delay. In one case it appears a record may have been mistakenly made on a boy's chart that his parents had been informed. In some cases the patients failed to attend scheduled appointments. In other cases the explanation offered was that although the patients were recorded as having attended for treatment in the Day Care Centre, they did not attend the outpatient sessions and were not informed of their results because it wasn't the practice to inform patients of results in the Day Care Centre. While the Tribunal appreciates the difficulties which arose in dealing with the results from a relatively large number of patients and the policy of maintaining strict confidentiality in relation to patients' HIV status, the Tribunal's overall impression from the evidence was that not enough energy and attention was devoted to devising and operating a system to identify those who had not been informed of their results to ensure that contact was made with them.

"Simon"

The Tribunal heard evidence from the mother of "Simon", the boy who as a matter of probability was infected by Armour Factorate, Batch No. A28306 He was found to be positive on a HIV antibody test reported in December 1986. This was a very late and isolated seroconversion which occurred long after the seroconversion of any other haemophilia A patient. It was quite properly the subject of inquiry and correspondence by Professor Temperley with the BTSB and Armour. The Tribunal believes it probable from "Eithne's" evidence and from its examination of "Simon's" medical records that "Eithne" was not informed of his infection with HIV until she was informed by Dr. Jackson in January 1988. The Tribunal finds this inexplicable. "Simon's" positive HIV antibody test in December 1986 was an isolated and significant event which received considerable attention. The Tribunal can see no reason why "Eithne" was not immediately contacted either by phone or by letter and asked to attend for an appointment with one of the doctors so that she could be informed of the positive result.

Medical Information

The Tribunal heard evidence from Professor Temperley, Dr. Helena Daly and Dr. Frederick Jackson of the medical information which they would have supplied to persons with haemophilia when informing them of a positive result of a HTLV III antibody test. Dr. Daly was able to assist her recollection by referring to a letter which she wrote on the 1 October 1985 to Mr. David Fitzpatrick. *(A copy of this letter is at Appendix 34).* The doctors would have stressed the difference between HTLV III antibodies and the development of AIDS. At that time they would have expressed the view and hope which was generally held among treating doctors that only a small proportion of persons with haemophilia who were HTLV III antibody positive would go on to develop AIDS. Dr. Daly stated that she drew the analogy with hepatitis. Patients were also informed of the risk and advised about the prevention of transmission of HIV infection to other persons via blood and sexual contact. Copies of a booklet entitled "AIDS and the Blood – A Practical Guide" by Dr. Peter Jones which had been made available to the National Haemophilia Treatment Centre by the Irish Haemophilia Society were available for distribution to patients. Patients who might be sexually active were advised that they could obtain supplies of condoms, which were not then readily available in this country, from the Irish Haemophilia Society. Where appropriate, patients were offered that HTLV III antibody tests would be made available to their wives and their partners. It was of course entirely a matter for the patient as to whether he communicated this offer to his wife or partner.

The Tribunal believes the doctors supplied appropriate medical information when informing patients of their results according to the then medical knowledge and opinion concerning AIDS and HIV/HTLV III. A major problem of any such telling was identified by Dr. Daly in her letter to Mr. Fitzpatrick in the following passage:-

> *"I find the situation is somewhat analogous to telling patients that they have leukaemia. In this case most of the patients immediately shut off when they hear the bad news and it takes several days before the message really sinks in and before they start to ask questions about the significance of the illness. The situation with regard to HTLV III infection in the haemophiliacs is in fact similar."*

Dr. Daly in effect advised that after the medical telling there should be a follow-up meeting or visit which would not necessarily need to be with a doctor. In a later section the Tribunal will examine the efforts which were made to provide counselling and social work support for persons with haemophilia. The Tribunal believes the reaction identified by Dr. Daly may also explain the

recollection of some of the persons who gave person testimony that they were informed of their results by the doctors in a perfunctory manner with little or no information. While it is entirely possible that there were communications difficulties from time to time between individual patients and individual doctors, the Tribunal does not think it likely that patients were, in general, told in a perfunctory manner or only given limited information. The Tribunal thinks it more likely that in such cases the patients were so shocked by the news of the positive test that they blocked out or were unable to take in much of the information which was given to them with the result that their totally genuine recollection is of a much briefer and more limited encounter than in fact took place.

Hepatitis C Antibody Testing

The results of the first hepatitis C antibody tests on samples taken from persons with haemophilia in this country were received by Professor Temperley from Professor Hillery of the Virus Reference Laboratory on the 4 September 1990. A group of results were sent on that day, some of which related to stored sera. The covering note stated that no confirmatory tests were available to the Virus Reference Laboratory and that therefore the results "*must be considered unconfirmed*". Following that communication Professor Temperley issued instructions to the relevant persons in the National Haemophilia Treatment Centre that no result, whether positive or negative, should be communicated to a patient until a second test had been carried out using a separate sample. In view of the doubts which then existed about the accuracy of the first generation Elisa tests and the communication from the Virus Reference Laboratory, the Tribunal thinks this was an appropriate policy to adopt. Some results began to be communicated to patients in accordance with that policy. In early 1991 the Virus Reference Laboratory started writing at the end of hepatitis C antibody reports, "*This is only a research test. It is not for diagnostic use.*" As a result of this note, the National Haemophilia Treatment Centre stopped communicating results to patients. Professor Temperley wrote to Professor Hillery protesting at the inclusion of this note. Professor Temperley stated in evidence that this letter was written as a result of his frustration at the position in which he was placed at the time but that he now realises that the early tests were unreliable and that Professor Hillery was correct. Professor Temperley, appropriately, informed a meeting of the NHSCC of the unsatisfactory situation arising from the fact that the reports were stated to be for research purposes only. In June 1991 the note was removed by the Virus Reference Laboratory and it became possible for the National Haemophilia Treatment Centre to recommence communicating results to patients.

The situation which arose between September of 1990 and June of 1991 was obviously highly unsatisfactory from the point of view of persons with haemophilia. During that period many of them would have been told that samples were being taken for the purpose of a hepatitis C antibody test. Some would have been informed of results of the test. Others would not. The basic cause of the difficulty, the unreliability of the early hepatitis C antibody test, was outside the control of the National Haemophilia Treatment Centre and indeed the Virus Reference Laboratory. The situation created great difficulty for the National Haemophilia Treatment Centre which was not in any way of its making. The Tribunal is satisfied it responded appropriately.

The system adopted by the National Haemophilia Treatment Centre after June 1991 was that samples were taken from persons with haemophilia when they attended for their review appointments. They were informed of the results when they attended for subsequent review appointments. This was the practice adopted by Dr. Giangrande at the Oxford Haemophilia Centre. Professor Temperley referred in evidence to a policy document from the Royal Free Haemophilia Centre which provided for a slightly different policy. It also contemplated that samples would be taken from patients at review appointments. It seemed, however, to contemplate that patients would be counselled as to the possible implications of a positive result at the time the sample was taken and then informed of the result by letter.

Although there was a growing realisation that hepatitis C might have serious long term consequences for some patients, it was still viewed in the early 1990's by both doctors and patients as being a much less urgently threatening condition than HIV or AIDS. The Tribunal believes the practice of taking samples for tests at review appointments and informing patients of the results at subsequent review appointments was, in the circumstances, reasonable and in accordance with the prevailing practice in the United Kingdom in regard to hepatitis C antibody testing at the time. It was a system which obviously worked reasonably well for persons who regularly attended for review appointments. The challenge to the system was to identify and contact patients who did not attend regularly for review appointments and either had not been offered a test or had not been informed of the result of a test.

The Tribunal believes efforts were made by the National Haemophilia Treatment Centre to contact such persons, with varying degrees of success. In some cases letters were sent either simply asking people to attend at the Centre or conveying, with varying degrees of directness, that a test had disclosed hepatitis C antibody positivity. The sending of such a letter was obviously not at all the ideal way of communicating results of a hepatitis C antibody test. On the other hand it was equally, and perhaps more, unsatisfactory that a person with hepatitis C antibody positive test should not be informed of that result. The Tribunal's overall impression is that the National Haemophilia Treatment Centre made reasonable efforts to contact persons with haemophilia and offer then hepatitis C antibody tests and to convey the results of the test to them. It was, however, by no means a perfect system and there were individual cases of delay both in contacting persons to offer them hepatitis C antibody tests and in conveying the results.

"Gordon", "Henry", "Ian"

The Tribunal heard evidence from "Felicity", the mother of "Gordon", "Henry" and "Ian". They were patients of the National Children's Hospital in 1991. Hepatitis C antibody tests reported in December of 1991, unfortunately, showed all three to be hepatitis C antibody positive. "Felicity" was not informed of that situation until she was told by Dr. Owen Smith in October of 1995. This was obviously a completely unacceptable failure to communicate the results of the hepatitis C antibody tests in a timely fashion and has been acknowledged to be so, both by the National Children's Hospital who tendered a public apology to "Felicity" during the course of the Tribunals hearings and by Professor Temperley who, in the course of his evidence, stated he regretted very bitterly that it had happened. Professor Temperley mentioned things which might be considered in mitigation of this failure, the heavy workload in the National Children's Hospital, the shortage of medical staff there, the pressure which staff were under as a result of providing treatment for children with AIDS-related illnesses and the fact that although "Felicity" attended the National Children's Hospital during the period from 1991 to 1995 with her children regularly, it may have been more at the day care section than for review appointments at outpatients. Professor Temperley accepted that none of these matters could provide a good explanation and that there was no good explanation for what happened. The Tribunal believes what occurred in respect of "Felicity's" children was something that clearly should not have happened and it agrees with Professor Temperley that it could not be explained or excused by any of the matters to which he referred. The matters referred to by Professor Temperley do, however, provide the context in which the failure occurred.

Medical Information.

The Tribunal heard evidence of the medical information which was given to patients about hepatitis C at the time they were informed of hepatitis C antibody results. The Tribunal believes this information was appropriate and in accordance with what was then known about hepatitis C and the practice of treating doctors in other countries. This information would have been supplemented

by further information provided by Dr. Anne Tobin to patients whom she saw. The Tribunal heard one very clear example of the potential difficulties of communication and the capacity of patients to block out traumatic or unwelcome information. One of the patients who gave personal testimony had the pseudonym "Albert". His evidence was that he was completely unaware of his hepatitis C positive antibody status until he was informed of it by Dr. Owen Smith when he attended the National Haemophilia Treatment Centre in 1999. The Tribunal is satisfied from its examination of his medical records and the evidence of Sr. O'Shea and Dr. Anne Tobin that "Albert" was informed of a positive result of a hepatitis C antibody test by Sr. O'Shea in 1993 and that his hepatitis C antibody positive status was discussed with him by Dr. Anne Tobin in connection with investigative tests which she carried out in 1994. The Tribunal is also however satisfied, as indeed were the witnesses from the National Haemophilia Treatment Centre, that when "Albert" attended at the National Haemophilia Treatment Centre in 1999 he was quite genuinely unaware of the fact that he was hepatitis C antibody positive. The Tribunal believes the explanation for these apparently irreconcilable findings lies in the capacity of patients to block out or obliterate unwelcome information.

Part V

Division III
Chapter 6

The National Haemophilia Treatment Centre: The Response to the Infection of Persons Infected with HIV and Hepatitis C

Medical Treatment

Dr. Fiona Mulcahy, Consultant Genitourinary Physician, St. James's Hospital, gave evidence to the Tribunal of the medical treatment provided to persons infected with HIV or AIDS for their underlying condition. At first there was no such treatment and all that could be offered was treatment for the AIDS-related illnesses. In 1987 AZT became available followed in 1991 and 1992 by retroviral treatment. The real breakthrough in treatment came with the advent of triple therapies in the summer of 1995. In this country such treatment was in general use at the end of 1995 and beginning of 1996. Dr. Mulcahy explained how this had transformed the situation for persons infected with HIV. She stated that she continued to treat persons with haemophilia infected with HIV as outpatients at the GUM Clinic. She stated that there had been very few admissions for inpatient treatment of persons with haemophilia infected with HIV since 1996 and that there had been no deaths from HIV or AIDS in that group since 1996. The Tribunal is satisfied that the medical treatment provided to persons with haemophilia infected with HIV for that condition was and is entirely appropriate. At the time Dr. Mulcahy gave her evidence in April 2001 she stated that arrangements were being made to hold the HIV outpatient clinics for persons with haemophilia in the National Centre for Inherited Coagulation Disorders rather than, as present, in the GUM Clinic. The personal testimony heard by the Tribunal contained much praise for the steadfast work of Dr. Fiona Mulcahy and her team.

The Tribunal heard evidence from Dr. Anne Tobin of her work, commencing in 1992, in offering treatment with Interferon to persons infected with hepatitis C which. She was able to carry out this work as a result of funding for an unrestricted educational grant from a commercial drug company. The Tribunal is satisfied that the treatment was offered by Dr. Tobin to relevant patients in a meticulously appropriate manner. She was also in a position to offer patients general information about hepatitis C and prepared an information leaflet which was made available for distribution to patients. Unfortunately, the treatment with Interferon, which caused severe and debilitating side

affects in many patients, had only a very limited success, particularly in achieving a sustained response. In 1994 a special Hepatology Unit was established at St. James's Hospital specifically for the care and treatment of patients with hepatitis C. Again it would seem from the personal testimony that the work of the Hepatology Unit was and is held in very high regard among persons with haemophilia.

The Tribunal also heard evidence of the medical and nursing care and treatment provided by the National Haemophilia Treatment Centre to persons who suffered serious illness and died as a result of being infected with HIV or hepatitis C or both. In summarising themes which emerged from personal testimony, the Tribunal has referred to feelings of anger, hurt, resentment and abandonment. None of these feelings were directed towards the nursing staff in the National Haemophilia Treatment Centre in St. James's Hospital and the National Children's Hospital, and for good reason. It is clear to the Tribunal that the nurses provided dedicated and steadfast care to their patients in harrowing circumstances. Their response to what must for them, as well as everyone else, have been the frightening risk of AIDS was calm and courageous. They did all they could to alleviate the terrible suffering of their patients and their families.

In some cases the feelings of anger, hurt and resentment were directed towards the treating doctors and particularly, though not exclusively, Professor Temperley. Some witnesses' perception of Professor Temperley was that he was unapproachable, arrogant or dismissive. The Tribunal has had a considerable opportunity to observe Professor Temperley as he gave evidence and has also examined the records of his treatment of a considerable number of patients. The Tribunal does not believe he is or was arrogant, cold or dismissive. It is very sad that some of his patients perceived him to be so, sad for them because it would have added to their feelings of anger and hurt and sad for Professor Temperley, although he said he understood the anger and hurt of those who were infected and their families.

The Tribunal is satisfied that the medical care given by Professor Temperley and the doctors working with him in the National Haemophilia Treatment Centre to infected patients who developed serious illness and died was of a high standard. It was provided notwithstanding many difficulties of resources at both St. James's Hospital and the National Children's Hospital. The numbers of doctors, both consultant and non-consultant, engaged in treating persons with haemophilia in both hospitals prior to 1985 would have been far less than in haemophilia treatment centres of comparable size in the United Kingdom. Treating and caring for patients with serious AIDS related illnesses after 1985 placed further strain on an already difficult situation. In St. James's Hospital the availability of other specialists in haematology, both consultant and non-consultant, and of a specialist Haemophilia Nursing Sister in the National Haemophilia Treatment Centre was of great assistance. It is clear from the evidence that Margaret King until her retirement in 1988 and Eadaoin O'Shea from 1988 onwards played an absolutely pivotal role as the Haemophilia Nursing Sister. The same resources were not available in the National Children's Hospital. As has already been mentioned, Professor Temperley was the only Consultant Haematologist covering that hospital. The junior hospital doctors would have been doing their training as paediatricians and not as haematologists. A haematology registrar was not appointed in the National Children's Hospital until 1994. Neither was there a Haemophilia Nurse Specialist at the National Children's Hospital until the appointment of Nurse Reddin in 1994.

The physical environment in which treatment and care were delivered to infected persons at both St. James's Hospital and the National Children's Hospital was initially far from ideal. The implementation of plans for very necessary improvements were delayed by the financial stringency in the second half of the 1980s and, in the case of the National Children's Hospital, by plans to move to the new hospital at Tallaght. Some improvements were achieved in both hospitals. In St. James's Hospital improved accommodation became available in 1989/90 . In the National

Children's Hospital there were improvements in 1994 when an Outpatient Treatment Centre for haematology patients, including persons with haemophilia, a room adjacent to the surgical ward to enable parents of children to consult with doctors in privacy and a Bereavement Centre were made available.

A particular difficulty arose in respect of dental equipment for the National Haemophilia Treatment Centre at St. James's Hospital. Dental services were provided to persons with haemophilia by dentists from the Dental Hospital. There was a considerable delay in providing appropriate facilities and equipment which were required for that service. It seems to the Tribunal that this delay arose primarily from the general shortage of funds for health services in the late 1980s, but it was certainly contributed to by difficulty in locating and providing a suitable room in St. James's Hospital to contain the dental equipment and facilities.

The Tribunal heard evidence from Mr. Liam Dunbar who was Acting Chief Executive of St. James's Hospital from 1985 to 1987 and Chief Executive Officer from 1987 until April 1995. His evidence gave the Tribunal a very clear picture of the financial stringency which applied during that period. The Tribunal is satisfied from his evidence that St. James's Hospital, while recognising the constraints under which the Department of Health itself operated, made appropriate and realistic attempts to secure the necessary funding to improve the facilities for persons with haemophilia. The Tribunal is also satisfied that the interests and requirements of persons with haemophilia were fully and appropriately recognised by St. James's Hospital in the difficult task of allocating the limited resources which were available to the hospital.

The Present Position

The Tribunal heard evidence from Dr. Owen Patrick Smith, who was then the Director of the "National Centre of Inherited Coagulation Disorders", the successor to the National Haemophilia Treatment Centre. Dr. Smith also arranged for the Tribunal and all interested parties to visit the National Centre. The situation is now very happily unlike that which applied in the 1980s. The new centre is a state-of-the-art, purpose-built facility, appropriately staffed, of which Dr. Smith, and all associated with the centre are justly proud. At the time Dr. Smith gave evidence (27 April 2001), he stated that children were receiving treatment at the National Children's Hospital in Tallaght but that it was intended that in future children requiring outpatient services would receive them at the National Centre in St. James's and children requiring inpatient care would receive it at Our Lady's Hospital for Sick Children in Crumlin.

Social Workers and Counselling

St. James's Hospital

The Tribunal heard evidence from a number of witnesses about the social work and counselling services available at St. James's Hospital for persons with haemophilia. The principal evidence was given by Ms. Maeve Foreman, Senior Medical Social Worker at St. James's Hospital. Social work resources at St. James's Hospital in the early 1980s were limited. Even before 1984 the availability of social work services for persons with haemophilia had been the subject of representations by Professor Temperley. It seems clear that the social work and counselling services were inadequate to meet the demands which were placed upon them by the advent of AIDS and HIV infection in 1984 and 1985. This was unfortunate as it was a time of acute need. The need for such resources was clearly identified at the time by, amongst others, Ms. Kennedy, Head of the Social Work Department, Professor Temperley and Dr. Helena Daly.

In September 1986 the social work staffing levels available to the National Haemophilia Treatment Centre were increased as a result of an internal reallocation of existing social work resources in the hospital. In the period prior to September 1986 the social work or counselling services offered were very limited. In effect patients would only be seen by a social worker if they specifically requested this or were specifically referred by a doctor or by Sr. Margaret King. Ms. Maeve Foreman was one of the social workers who started providing services to persons with haemophilia after September 1986. From that time onwards a more proactive strategy was possible. One of the social workers attended the weekly Wednesday outpatient clinic and a service was offered to those who attended. Patients who expressed difficulties in coping with their HIV diagnosis or who had signs of AIDS-related illnesses were referred to the social workers by Sr. Margaret King. Although some patients accepted the service offered by social workers, many did not for various reasons. By January 1989 approximately half of the persons with haemophilia who were HIV positive had been seen by a social worker at an outpatient clinic and offered services. By that time also any patient with haemophilia admitted to the wards either because of a bleed or a HIV-related illness would have been seen by a social worker unless the patient declined the service.

In 1989 increased resources became available to St. James's Hospital and the social work service was increased. Christine McGee was appointed to the post of HIV Counsellor in the National Haemophilia Treatment Centre. From 1989 onwards the service was much expanded and St. James's hospital were in a position to offer counselling to those who wished to avail of it. It was also possible for the social workers to liaise with Margaret King who, following her retirement from St. James's in 1988, became a counsellor with the Irish Haemophilia Society and from 1991/1992 with a further counselling psychologist who was retained by the Irish Haemophilia Society. It was also possible for the social workers to offer a more proactive service to wives and partners of infected persons after 1989. Ms. Foreman described varied reactions by patients to the offer of social services. Some didn't wish to avail of the services. Some preferred to obtain counselling services from a counsellor not associated with the hospital. Some accepted the service provided it was offered informally. Some accepted the service but did not discuss it with members of their family or permit the social workers to contact members of their family. Ms Foreman referred to a number of instances of personal testimony where members of the family of a deceased patient believed that the patient received no counselling or social work services when the patient had in fact received quite extensive services.

The National Children's Hospital

The Tribunal heard evidence from Ms. Laurette Kiernan, Social Worker at the National Children's Hospital from 1956 until 1989. She was the sole social worker in the National Children's Hospital during those years. That situation would have compared very unfavourably with the social work staffing levels at Temple Street and Crumlin Hospitals. With the support of the Secretary/Manager of the hospital, she sought to have further social workers appointed but she was unsuccessful. It is clear that notwithstanding these difficulties Ms. Kiernan established a relationship with children with haemophilia and their families and provided a commendable level of services to them. Initially she did this with the assistance of advice and information from the British Haemophilia Society. After the Irish Haemophilia Society was founded she worked in close co-operation with them. She attended the outpatient haemophilia clinics and met individual patients and their parents. She also organised projects, such as an information meeting about family planning for parents of children with haemophilia and after 1985, in conjunction with the psychologist employed in the National Children's Hospital, a group meeting for the parents of children infected with HIV. When Ms. Kiernan retired her post was filled in a temporary capacity until May 1990 when Ms. Brenda Mehigan was appointed sole Social Worker. She remained the sole Social Worker until 1995. Ms.

Mehigan was required to give priority to other work in the hospital, principally investigating suspected cases of child abuse and child neglect. The Tribunal formed the impression that, because of the imperative demands of her work in that area and through no fault on her part. Ms. Mehigan was only to offer a very limited service to children with haemophilia and their parents.

Protocols for Handling the Bodies of Deceased Infected Persons.

The National Haemophilia Treatment Centre followed a policy in dealing with the bodies of deceased infected persons which involved placing the body in what was generally, and unfortunately, referred to as a "body bag". The distress which this caused for infected persons and their relatives was frequently referred to in personal testimony. The Tribunal heard evidence from Ms. McGrath, the Infection Control Sister with the Federated Dublin Voluntary Hospitals from August 1980 until 1988, that the practice of using such bags was required by Infection Control Guidelines drawn up in the United Kingdom and known as "The Howie Code". The Tribunal accepts that the use of such bags by St. James's Hospital and the National Children's Hospital was believed by the hospital authorities to be a necessary measure of infection control in accordance with The Howie Code. The Tribunal also believes that the nurses and social workers were fully aware of the distress caused by this policy and made considerable efforts to avoid or minimise that distress. These efforts included making arrangements for the family and friends of a deceased person to be given an opportunity to view the deceased in the ward before removal to the mortuary. The Tribunal also heard evidence from Mr. Dunbar of a meeting which he arranged of all relevant parties, including representatives of the Irish Haemophilia Society, to discuss ways of minimising the distress caused by the policy.

Conclusion

While the primary victims of the tragedy of HIV and hepatitis C infections were the persons who were infected and their families, it was also a time of great sadness and strain for those who treated and cared for them in the National Haemophilia Treatment Centre. The inadequacies in the available facilities and resources in some areas created additional problems and strain for the staff of the National Haemophilia Treatment Centre as well as patients. In the Tribunal's view the staff were not found wanting and they applied the resources available to them for the treatment of their patients with considerable skill, courage and dedication.

Part V

Division III
Chapter 7

The Regional Centres and Hospitals Providing Treatment for Persons with Haemophilia

Introduction

The Tribunal heard evidence in regard to the operation of Regional centres and how treatment was provided in such centres and in hospitals other than the National Haemophilia Treatment Centre. In this chapter the position with regard to a number of Centres and Hospitals will be looked at. However, before doing so the Tribunal is of the opinion that it would be helpful to make a number of general comments in relation to the structures which governed the relationship between the National Centre and other institutions.

The evidence to the Tribunal suggests that co-operation and co-ordination between the National Centre and other centres and hospitals was intended to take place through the medium of the National Haemophilia Services Co-ordinating Committee. While that Committee did have representatives from both the National Centre and from regional centres and indeed other persons involved in the provision of care for persons with Haemophilia the Tribunal believes that in some respects it provided co-ordination more in theory than in practice. It seems to the Tribunal that from the early stages of the Co-ordinating Committee there was an underlying tension as to whether regional centres should develop as independent autonomous units or whether they were to operate simply as offshoots of the National Centre. It would appear that this tension caused difficulties in relation to the operation of the Co-ordinating Committee and that centres such as that in Galway became less inclined to take an active part in the Co-ordinating Committee because they felt that it was not inclined to foster strong local centres but rather might be inclined to bring such centres under the authority and control of the National Centre. These matters are also dealt with by the Tribunal in Part V, Chapter 9.

Also the appearance of the Co-ordinating Committee may have given the impression that there were a number of regional centres which provided a full range of treatment services for persons with Haemophilia. This was not in fact the case. For example the Limerick Centre although referred to

as a regional centre did not have the benefit of a Haematologist and in reality relied upon the National Centre for any important treatment decisions. In practice the development of the provision of service for persons with Haemophilia would appear to have been constrained by the small number of Hematologists who were employed throughout the country.

The evidence to the Tribunal highlighted specific deficiencies in at least two areas in the relationship between the National Centre, the regional centres and hospitals providing Haemophilia care. Firstly there was no clear written protocol or procedure for the reporting of cases of infection as between the various institutions. This had the effect that it was rendered more difficult, and there was greater delay, in establishing a pattern of occurrences or incidents throughout the country. The most obvious example of this was the emergence, in or around the end of 1985 and the beginning of 1986 of the infection of Haemophilia B patients with HIV. Isolated cases were occurring in different hospitals in Cork, Dublin, and Drogheda but there was no set procedure whereby these incidents would be reported to a particular body. The Tribunal has no doubt that the effect of this was that it was more difficult to see what was occurring and to react in an appropriate way.

Another area of concern was the lack of a proper system in relation to the allocation of responsibility for patient care between the National Centre and regional centres or hospitals. The evidence to the Tribunal shows that it was not unusual for a person with Haemophilia to attend at a number of different institutions. Yet there did not appear to be any adequate method of sharing information or clear demarcation lines as to who was ultimately responsible for making decisions in regard to the care of the patient. An example of this would be a patient who attended at the centre in Limerick but who also attended the National Centre in Dublin where it would appear that on occasion the doctor in Limerick would be simply reliant upon telephoning the Dublin Centre with a view to attempting to find out what view the National Centre took in regard to the patient and what treatment it had provided for him. On a slightly different point it would seem that if a person with Haemophilia attended at a hospital which had no particular knowledge or expertise in regard to the treatment of Haemophilia, there was no set procedure how they should deal with the patient. Rather the hospital might be reliant on making some informal contact with the National Centre with a view to obtaining some advice about treatment. The whole process of interaction between the National Centre and local centres or hospitals in respect of individual patient care seemed haphazard and uncertain.

Even in regard to wider issues or policy matters in relation to patient care the level of exchange of information between the National Centre and the local centres and hospitals would appear to have been very unsatisfactory. An example of this is that Prof. Egan in the Galway Centre would appear to have been unaware during 1985 that the National Centre had stopped using Cryoprecipitate during 1985 for the treatment of Haemophilia A patients as it was not heat treated.

The Tribunal formed the view from the evidence to the Tribunal that in more recent times difficulties in regard to the demarcation of responsibility and the passage of information between the National Centre and regional centres and local hospitals have become less. However, the Tribunal is of the view that matters may not be entirely satisfactory and this is an area to which the Tribunal will return in its recommendations in this report.

The Cork Regional Centre

The Cork Regional Centre operates in Cork University Hospital. The Tribunal heard evidence from Dr. Paule Cotter who has been the consultant Haematologist in charge of the Unit since 1979. It would have had approximately 40 patients with bleeding disorders, about 75% of which would be patients with Haemophilia A.

The Choice of Products Used

It would appear from the evidence of Dr. Cotter that in the late 1970s all, or certainly the vast majority, of Haemophilia A patients were treated by the use of cryoprecipitate. In the early 1980s this gradually changed whereby more patients began using concentrates which facilitated home treatment. Dr. Cotter was an active participant in the National Haemophilia Services Co-ordinating Committee and kept herself informed of the views of the UK Haemophilia Directors. The Tribunal believes that the views discussed and adopted at the Co-ordinating Committee would have determined the choice of product used in the Cork Centre. The adequacy of the consideration given by the National Haemophilia Treatment Centre to the issue of choice of product is reviewed by the Tribunal in Part V, Chapters 2, 3 and 4. Dr. Cotter became aware in early 1983 that the virus giving rise to Aids might be blood borne and it would appear that the Cork Centre adopted protocols from that time with a view to restricting the use of concentrates and attempting to ensure that they were not used for certain categories of persons. Unfortunately, copies of these protocols are no longer available. In the view of the Tribunal Dr. Cotter's evidence establishes that these protocols were adhered to and that concentrates were used to treat members of excluded categories only if there were clinical reasons why this was necessary. The Tribunal is of the opinion that Dr. Cotter's evidence to the Tribunal in regard to the treatment of certain of her patients in 1983 and 1984, and in particular the patient "Louis", shows that the protocols were not applied perfectly; however the Tribunal believes that they were in general applied in a reasonable and appropriate way.

Dr. Cotter was involved in discussions in December 1984 with Professor Temperley in regard to the desirability of the use of heat-treated products and they decided to purchase only heat-treated products from commercial firms and to urgently request the BTSB to consider the question of heat treating all its product for the treatment of persons with Haemophilia. It would seem that these discussions were heavily influenced by the views arrived at by the UK Haemophilia Directors in October 1984. The Tribunal is satisfied that Dr. Cotter moved with expedition following her meeting with Professor Temperley to secure supplies of heat-treated commercial products for her patients who had Haemophilia A.

The situation in regard to her Haemophilia B patients is more complex. At the beginning of 1985 all Haemophilia B patients at the Cork Centre were being treated with non heated BTSB Factor IX. This position continued for the entirety of 1985. It would seem from Dr. Cotter's evidence that it was only in or about the Autumn of 1985 that she became aware that some Haemophilia B patients in St James's Hospital were being given a commercial heat-treated Factor IX Konyne. It was also in or about the autumn of 1985 that she became aware that BTSB heat-treated Factor IX was by then being supplied to the National Treatment Centre in St James's Hospital.

On the 19 December 1984 Dr. Cotter wrote to Mr. Martin, a hospital administrator, setting out the financial implications of using heat-treated products. In the course of that letter she set out her then views in regard to the use of such products. She said that heat-treated concentrates appeared to be considerably safer and less likely to transmit the HIV virus; that only heat-treated commercial products should be used for the treatment of Haemophiliacs and that the BTSB should be asked to take immediate steps to heat treat its products. *(See copy of the letter of the 19 December 1984 at Appendix 33.)* Notwithstanding this view Dr. Cotter continued to use BTSB non-heated Factor IX for the entirety of 1985. In her evidence Dr. Cotter identified a number of factors which could justify the continued use of the non-heated BTSB product. Firstly, she viewed the BTSB Factor IX as carrying less risk because it was made from a relatively small pool of Irish donors. Secondly, she felt that the risk of HIV infection was less through Factor IX than through Factor VIII. Thirdly, she believed that the BTSB was experiencing some difficulty or problems heat treating its Factor IX and that there was a fear that such heat treatment would cause an increased risk of thrombosis.

The Tribunal is of the opinion that there is some validity in all of these matters. Also it is clear from the evidence of Dr. Colvin that some treating doctors in England continued to use unheated product, including unheated Factor IX, during the year 1985. However, taking an overview of the evidence given to the Tribunal and having regard to the views expressed by the various international experts the Tribunal believes that as 1985 went on, the level of concern about the use of non heated product increased during the passage of the year. Again, this whole area has been explored by the Tribunal in Part III, Chapter 4 and Part V, Chapter 3 of the Report and the relevant developments in England and Wales are set out in some detail therein.

It would seem that the only step that was taken by Dr. Cotter to address the difficulties and risks that arose from the continued use of non heated product is that she may have expressed her concerns at meetings of the National Haemophilia Services Co-ordinating Committee. The Tribunal believes that Dr Cotter should have in the summer and autumn of 1985 pursued more vigorously the objective of bringing to an end the use of non heated product. She should have attempted whether by correspondence or by specific meeting to have agreed a deadline by which BTSB heated Factor IX would be made available to her patients. As the summer and autumn of 1985 arrived and her Haemophilia B patients were still being treated with non heated product she should have looked to see what other alternative products were available and at least considered whether they could have been more safely given to her patients.

When looking back at events which took place some fifteen years ago, the Tribunal accepts that there is a great danger that one may be wise with the benefit of hindsight but the Tribunal does not believe that it is falling into this error in coming to these views. It is clear from the evidence and correspondence before the Tribunal that Dr. Cotter had formed a view by the beginning of 1985 that the use of heat-treated products was safer than the use of non heat-treated products. Given that that was the view which she had formed, the Tribunal does not think it is unreasonable to expect that she would have taken greater steps to ensure that her patients obtained the benefit of the safer product.

The Tribunal accepts, however, that in viewing the actions of Dr. Cotter at the time one must take into account that she had clinical responsibility for a great number of patients and that persons with Haemophilia probably only accounted for approximately 10% of her time. Also, in fairness to her, the Tribunal is of the view that it should make it clear that it is very doubtful, even if she had taken the actions which have been indicated, that such actions would have prevented the infection of her patient “Andrew”. The Tribunal has come to this view having regard to the dates when he received the infected batch of non heated BTSB Factor IX, Batch Number 90633, and the dates upon which he was tested and found to be positive for HIV antibodies.

Reaction of the Cork Centre to Knowledge of Infection with BTSB Factor IX

In her evidence Dr. Cotter dealt with her involvement with her patient “Andrew” who had severe Factor IX deficiency. He received weekly prophylactic injections with Factor IX, and during 1985, this was with BTSB non-heated Factor IX. When tested as part of the cumulative testing in January 1985 “Andrew” was found to be negative for HIV antibodies. In her evidence Dr Cotter said she believed that “Andrew” had a further sample taken in July 1985 which was sent for testing and that the results were obtained in September or October 1985 which showed he was positive for HIV antibodies. Dr. Cotter accepted that the records of the Virus Reference Laboratory indicated that a further sample in respect of Andrew, dated the 26 October 1985 was sent to the Virus Reference Laboratory on the 12 November 1985 and that notification of a positive result was given on the 14

November, 1985. She further accepted that the records of the Laboratory indicated that an aliquot from a sample taken from "Andrew" in January 1985 had been received by the VRL on the 3 December 1985 and that notification of a negative result was given on the 5 December 1985.

Mr. Seamus Dooley, the Laboratory Manager of the Virus Reference Laboratory, proved the records of the Laboratory in respect of Andrew in evidence before the Tribunal. He said that the VRL had been unable to find any record of a sample taken from "Andrew" in July 1985, having being tested by the Laboratory and of a result being notified to Cork University Hospital. There is therefore a divergence between the records of the VRL and that of the Hospital in respect of this sample. The absence of any record of a July 1985 sample in respect of "Andrew" in the Virus Reference Laboratory must throw some doubt on the accuracy of the hospital records in respect of this sample but the Tribunal does not think that it is necessary for it to reach any concluded view as to which is correct.

Having regard to Dr. Cotter's evidence and to the records of the Virus Reference Laboratory as proved before the Tribunal it is probable that by early December the Cork unit had received the results of tests which indicated that "Andrew" had been negative for HIV in January 1985 and had become positive for HIV by November 1985. Dr Cotter acknowledged that when she received the positive result in November and the confirmatory negative result in early December she realised a patient with Haemophilia B had seroconverted. The circumstances of this seroconversion were such that it should have been clear that it must have been due to BTSB non heated Factor IX, since that was the only Factor IX product that was being used for the treatment of persons with Haemophilia B in the Cork Centre. If such non-heated Factor IX had been the cause of infection of a patient in Cork, it is the view of the Tribunal that it should have been obvious that its use may have caused infection elsewhere and that its continued use could be the cause of future infection.

In these circumstances Dr. Cotter should have realised that the situation was a serious one and taken appropriate action. She should have ensured that the BTSB non heat-treated Factor IX was recalled and no longer used in the Cork Centre. She should also have informed the BTSB and Professor Temperley so that a similar recall could take place in other centres and the source of the infection could be investigated. Instead it would appear that Dr. Cotter acted on the basis that a recall of BTSB product had taken place which she erroneously believed would have included the infected product. It would appear from the terms of a letter written by Mr. Stephen McGrath, a Chief Technologist in the Blood Bank in Cork University Hospital to Dr. Lawlor on the 14 October 1997 *(See copy of this letter at Appendix 34.)* that BTSB non heated Factor IX and in particular Batch No 90633 continued to be used in the Hospital until the 19 December 1985 Further, on the basis of other evidence to the Tribunal, including Dr. Lawlor's evidence, it would seem that BTSB unheated Factor IX continued to be used by at least one patient of the National Haemophilia Treatment Centre until the month of February 1986.

The Tribunal accepts that it is likely that Dr. Cotter was carrying out a very heavy caseload at the end of 1985 and that what seems obvious now may not have seemed as obvious at the time. However, since Dr. Cotter realised that "Andrew" was the first Haemophilia B patient that she had encountered who had seroconverted it should have set off alarm bells as to what had occurred and was occurring. The Tribunal cannot accept on the basis of her evidence that she took sufficient steps to stop the use of a potentially infected product in her own hospital or to inform the BTSB and Professor Temperley so that its use could be stopped elsewhere and a proper investigation take place.

The Tribunal accepts that it is likely that the BTSB became aware in early January 1986 from information supplied by Professor Egan that one of his patients, Fionn, had been infected by the use of BTSB Cryoprecipitate and that this should have raised the possibility in the minds of the officials

in the BTSB that their non heated Factor IX could also be the course of infection. Nonetheless, the Tribunal believes that if Dr. Cotter had taken the appropriate action, which has been outlined, that the real risks in regard to the continued use of BTSB non heated Factor IX would have been apparent to both the BTSB and other treating doctors at an earlier time and in a clearer way.

The Initial Testing for HIV Antibodies

Dr. Cotter explained to the Tribunal that in January 1985 she arranged to take blood samples from persons with Haemophilia whom she was treating with a view to forwarding the samples to the Virus Reference Laboratory, who were in turn to arrange to have HIV testing carried out in the Middlesex Hospital. Her recollection is that she had a list of patients with Haemophilia registered in the centre and that she wrote to each of them to ask them to come for a test. There was some delay between the tests being sent off and the arrival of the results. Dr. Cotter felt that the results probably came back in two batches one in or around March/April 1985 and the other in or around June 1985 and there may have been repeat results which came in later.

It would appear that test results were given to patients when they attended the clinic at their next appointment following the arrival of their result. If they did not turn up for the appointment they would be contacted with a view to giving them another appointment although it would appear there would be no specific reference to coming in to get test results.

The Tribunal has no doubt that Dr. Cotter attempted to deal with a difficult task of giving results to patients in a sensitive and professional manner. Further, the Tribunal believes that Dr. Cotter attempted to ensure that patients who had been found to be positive would be able to get advice from Mr. Patrick Evans, a nurse in charge of infection control, in regard to the spread of infection and safe sex practices. However, it would appear that there was no formal counselling or social work service available, certainly in the initial stages of the imparting of test results. This was unfortunate as such counselling may have helped some patients to deal with the shock and upset of the diagnosis. In March 1986 Dr. Cotter wrote to the Consultant Microbiologist at the Cork University Hospital about the need for greater counselling facilities and ended the letter by saying that she was very aware of serious deficiencies in the present service. There clearly were deficiencies in regard to the availability of counselling and it would appear that Dr. Cotter attempted to have those deficiencies addressed and remedied.

Having considered the evidence of Dr. Cotter, the Tribunal believes that in general patients were probably given their test results within a reasonable time scale from the receipt of those results by the centre. However, the Tribunal believes that it is probable that there were difficulties and delays in individual cases. In the case of Gerard Healy it would appear that the original test result from the sample taken in January 1985 came back in or around March 1985 with an equivocal negative result to the effect "*Below the cut-off point, please repeat*". It would seem that such repeat testing did not take place until November or December 1985 and this would appear to be an undesirable delay in the circumstances.

In relation to the patient “Garrett” there was considerable dispute as to when his mother was told about his HIV test results. Having regard to Dr. Cotter’s evidence that she had no specific recollection of telling “Garretts” mother prior to 1990 of his HIV status and her stance that she would not dispute the mother’s view in regard to the date when she was told, the Tribunal is of the view that it is likely that the mother was only informed of her son’s positive test results in the month of August, 1990. There was also some dispute about when the patient “Noel” was told about his test results. In her evidence Dr. Cotter said she believed that she informed “Noel” of his HIV status in November 1985 before he went to England. These events took place many years before the

giving of evidence in the Tribunal and the Tribunal is of the view that it is difficult to reach a conclusive view in regard to the matter. The Tribunal, however, has considerable doubt that Dr. Cotter is correct in her recollection, having regard to the fact that the test results which Dr. Cotter would have had in November 1985 were an equivocal negative with a request to please repeat and a definitive positive in relation to a July sample. This raises a question in the mind of the Tribunal as to whether in such circumstances Dr. Cotter would have told "Noel" he was HIV positive, without the benefit of a confirmatory report. Also it would seem that in 1992 "Noel" himself did not realise that he was HIV positive.

Testing for Hepatitis C Virus

From the evidence of Dr. Cotter the Tribunal is satisfied that a group of persons with Haemophilia did not receive testing for Hepatitis C until the year 1995. At that time testing was carried out in Cork under the auspices of the BTSB. Dr. Cotter accepted that a reasonably reliable test for Hepatitis C had become available by 1992. However, she made the point that such testing facilities were not available in Cork until 1994.

Dr. Cotter also accepted that there would have been certain advantages for a person with Haemophilia to know in 1992 that they were infected with the Hepatitis C virus rather than to obtain that knowledge in 1995. Treatment could begin at an earlier stage and the risk of onward infection would be less. The Tribunal believes that in these circumstances Dr. Cotter should have arranged to have those persons with Haemophilia who had not already been tested for Hepatitis C to be so tested as soon as a reliable test became available, which the Tribunal believes to be at the latest in 1992. The Tribunal can see no practical reason why Dr. Cotter would have been unable to arrange for such Hepatitis testing for such patients to take place in Dublin. Such earlier testing would have been to their advantage and the Tribunal has no doubt that Dr. Cotter should have made suitable arrangements to make sure it was carried out. Also it would appear that at least one patient, "Oliver", was not offered a test for Hepatitis C even in 1995 due to difficulties with the hospital records.

Treatment Given to Persons with HIV

In her evidence to the Tribunal Dr. Cotter also dealt with the question of the circumstances in which patients with Haemophilia in the Cork centre were referred to an Infectious Diseases Consultant. She stated in her evidence that an Infectious Diseases Consultant did not become available in Cork until July 1997. She also accepted that because of the lack of an Infectious Diseases Consultant in Cork there was a greater delay in sending patients who had a drop in their CD4 count to such a consultant than would have been the case were such patients in Dublin.

It would appear from Dr. Cotter's evidence that in or around September or October 1996 she made arrangements for a number of her patients to be seen by an Infectious Diseases Consultant in Dublin. In July 1996 Dr. Cotter had referred her patient "Dominic" to a Dr. Gerard Sheehan, an Infectious Diseases Consultant in the Mater Hospital. It would seem that this referral to Dr. Sheehan may have arisen and been connected with the preparation of "Dominic's" then pending claim before the Hepatitis C Compensation Tribunal.

The Tribunal believes it is likely that the circumstances of "Dominic's" referral to an Infectious Diseases Consultant was a precipitating factor in the subsequent referral of other patients in September 1996 to an Infectious Diseases Consultant in St James's Hospital. In the opinion of the Tribunal it was certainly undesirable that the absence of an Infectious Diseases Consultant in Cork

should have brought about a situation that patients in Cork with low CD4 counts experienced a greater delay in being referred to an Infectious Diseases Consultant than patients in similar circumstances in Dublin. The fact of "Dominic's" case illustrate the difficulties which could arise by reason of such delay.

The Galway Centre

The Galway Regional Centre operated in Galway University Hospital and it would appear that it catered for a relatively small number of persons with haemophilia perhaps between 10 and 20. Evidence in regard to the operation of the centre was given by Professor Ernest Egan who was the doctor in charge since the late 1970s.

From the evidence of Professor Egan it would appear that the practice in regard to the treatment of Haemophilia A patients in the Galway Centre was different to that applicable in the National Centre and in the Cork Centre. Professor Egan used only cryoprecipitate to treat such patients. The Tribunal is satisfied that this arose for a number of reasons. Professor Egan found that the needs of his patients could be adequately met by the use of cryoprecipitate in that it would appear that he did not have patients with severe Haemophilia which could only be adequately controlled by the use of concentrates. Further Professor Egan adopted a traditional approach in regard to the treatment regime which he adopted, and was inclined to reduce the number of exposures of a recipient to individual donors.

Having regard to the evidence of Professor Egan and of Dr. Lawlor, and as has been stated elsewhere in the report, the Tribunal is of the view that it is likely that the infection of the patient "Fionn" was caused by cryoprecipitate which was made and supplied to the Galway Centre by the BTSB. In the view of the Tribunal the evidence establishes that Professor Egan became aware of the infection of his patient in early January 1986. Having regard to the timing, nature and contents of the letter from Professor Egan to Dr. Terence Walsh in the BTSB dated the 14 January 1986, the Tribunal is of the view that it is probable that one of the main reasons why Professor Egan then contacted the BTSB was his recent discovery of the infection of his patient "Fionn". The Tribunal is also of the view that it is probable that Professor Egan informed Dr. Walsh of the recent infection and of his belief that such infection had been caused by cryoprecipitate supplied by the BTSB.

The Tribunal can see nothing in the evidence to the Tribunal to suggest that the treatment regime adopted by Professor Egan in respect of his Haemophilia A patients, that is the use of cryoprecipitate, was inappropriate in their particular circumstances. The continued use of cryoprecipitate by the National Haemophilia Treatment Centre, until at least the autumn of 1985, is discussed by the Tribunal at Part V, Chapter 3. However, the Tribunal believes that because of the unacceptable and unfortunate level of communication between the Galway Centre and the National Treatment Centre, Professor Egan was unaware of developments in the National Centre and in the Cork Centre and the increasing level of disquiet and unease about the use of unheated products. It is clear from the evidence of the expert witnesses that unheated product continued to be used by some doctors in England at least for some time during the 1985. Also, the use of cryoprecipitate made from small numbers of Irish donations was relatively less risky than the use of unheated concentrate made from a much greater number of donations. Clearly, however, it would have been desirable if Professor Egan had been aware of developments and had at least considered ceasing the use of cryoprecipitate and beginning the use of heat-treated products at the latest as and from the beginning of the autumn of 1985.

The Tribunal is satisfied that once Professor Egan became aware of the infection of his patient "Fionn" he moved quickly to attempt to obtain safer products from the BTSB for the treatment of his

patients. Given that Fionn's first samples were 16 October 1985 and the 29 November 1985, the Tribunal is of the view that it is impossible to know when he was infected by the use of Cryoprecipitate, save that it was prior to the Autumn of 1985.

Finally, the Tribunal heard evidence from a patient, "Niamh" who had a deficiency in Factor VII, in regard to her treatment by Professor Egan. In the opinion of the Tribunal her evidence suggests that testing for Hepatitis C may not have been offered and made available to her at the earliest reasonable opportunity, since it would appear that she was not tested for Hepatitis C until October 1995.

Our Lady of Lourdes Hospital Drogheda

Our Lady of Lourdes Hospital in Drogheda provided treatment for a small number of persons suffering from Haemophilia. Evidence in regard to the nature and extent of that treatment was given to the Tribunal by Dr Murphy and Dr Long. In the view of the Tribunal that evidence establishes that any significant treatment decisions in regard to these patients were taken by the National Centre where the patients also attended on a periodical basis. This is consistent with the fact that there was no Haematologist in the Drogheda Hospital.

In relation to the patient "George" the evidence to the Tribunal establishes that Dr. Murphy was informed in or about the 2 December, 1985 that he had tested positive for HIV antibodies. "George" was a Haemophilia B patient and the evidence to the Tribunal suggests that the Drogheda Hospital used only BTSB Factor IX. Dr. Murphy did not inform Professor Temperley or the National Centre of the positive diagnosis, nor did she inform the BTSB with a view to obtaining alternative product. She stated that "George's" mother had told her that she, the mother, would tell Professor Temperley.

Dr. Murphy was not a Haematologist and it would be unreasonable to expect her to have the same level of knowledge in regard to Haemophilia as if she was a Haematologist. Her evidence to the Tribunal was that while she was generally aware in late 1985 that some persons with Haemophilia were being found to be HIV positive, she did not know or appreciate that there was any particular significance in a Haemophilia B patient being found to be positive for HIV. She also said that she did not know whether "George" had any previous HIV tests or the results of such tests.

The Tribunal has already commented on the fact that it would appear that there were no clear procedures or protocols which required the reporting of a finding of infection in a particular Haemophilia patient. Having regard to this and to her state of knowledge in regard to Haemophilia, the Tribunal is of the opinion that while clearly it would have been better if Dr. Murphy had informed the National Centre and/or the BTSB of "George's" infection, the Tribunal does not believe that her failure to do so was unreasonable in all the circumstances.

The Limerick Centre

A number of patients with Haemophilia, between twenty and thirty, were treated in the Limerick Regional Hospital and Dr. Basheer gave evidence to the Tribunal of the arrangements for the treatment of such patients. While Limerick was referred to as a regional centre, the Tribunal is of the opinion that it is clear from the evidence of Dr. Basheer that this was the case in name only. Any significant decisions in regard to the treatment of the patients who attended in Limerick were made by the National Centre where these patients also attended. In the view of the Tribunal the Limerick Hospital was simply a local venue in which patients from that area could receive product, the nature of which had been determined by the National Centre. Again this is consistent with there being no Haematologist present in the Limerick venue.

As is indicated above, the Tribunal believes that in common with other regional centres and hospitals communications between the Limerick Hospital and the National Centre were somewhat informal. No proper arrangements were in place to ensure that the medical personnel in the National Centre knew what was happening to their patients in Limerick or that the medical personnel in Limerick knew what was happening to their patients in Dublin.

Part V

Division III
Chapter 8

The Irish Haemophilia Society

Introduction

The Tribunal had the benefit of hearing evidence from a number of persons who at various times were members of the Committee of the Irish Haemophilia Society; Mr. Frank Bird, Mr. Seamus Farrelly, Ms. Pamela Aldrich and Mr. Brian O'Mahony. Ms Rosemary Daly, the Administrator of the Society also gave evidence. Their evidence covered the activities of the Society from its inception to the present time.

From their evidence and the evidence of others that dealt with the Society over the years, the Tribunal is satisfied that the organisation which exists today has changed greatly from the Society as it existed in its early days. In the late 1970s and early 1980s, the Society was a small ill-resourced voluntary body which relied upon the efforts of its members and in particular the Committee members. It did not have its own premises and much of its time was taken up with fund raising to allow it to carry out even the most basic tasks such as holding social events, issuing an occasional newsletter and holding its Annual General Meeting. It would appear that the Society enjoyed the support of the BTSB and treating doctors including amongst others, Dr. O'Riordan, Mr. Hanratty, Professor Temperley and Dr. Cotter.

Choice of Product

The Irish Haemophilia Society participated in the work of the National Haemophilia Services Co-ordinating Committee and had two representatives on the Committee. The Tribunal is of the opinion that it is clear from the evidence of Mr. Bird, Mr. Farrelly and Mr. O'Mahony that at least in regard to matters where technical expertise was required, such as the choice of product to be used, the representatives of the Haemophilia Society took a somewhat deferential attitude towards the opinions of the treating doctors and the representatives of the BTSB. The Tribunal believes that it

would be surprising if this was not the case given that the representatives of the Society relied on the doctors for their own care and would not have had anything like the knowledge of the doctors and the representatives of the BTSB in regard to the advantages and disadvantages of particular products.

As the real threat that the spread of the AIDS virus posed to persons with Haemophilia emerged during 1983, the Society was in receipt of some degree of information in regard to what was occurring through the information exchange system of the World Federation of Haemophilia. However, the Tribunal does not think that the Society had the resources to obtain and to properly analyse the ever-increasing amounts of information, sometimes contradictory information, which was becoming available in regard to the possible spread of the AIDS virus through blood and blood products. On some occasions representatives of the Society did raise concerns such as the discussion between Mr. O'Mahony and Mr. Hanratty in May 1983. The primary approach adopted by the Society however was to rely upon the expertise and advice of the treating doctors and of the experts within the BTSB and in the view of the Tribunal this was a reasonable and proper approach.

The Giving of Information

One of the valuable functions fulfilled by the Society was the giving of information about the origins and treatment of Haemophilia to its members. It this did primarily through meetings, intermittent newsletters and social gatherings. It was also involved with the Health Education Bureau in the compilation of a booklet in regard to Haemophilia care which was published in December 1985 and revised in the autumn of 1987. When the threat posed by the AIDS virus began to become more apparent the Society attempted to find out what was happening and to give information to its members. Again the main approach was to rely upon the advice and expertise of treating doctors in this country for example by printing a letter from Professor Temperley in their newsletter in September 1983 and January 1985. The tone of the information given was reassuring but the Tribunal is of the view that this did no more than reflect the approach of the treating doctors and indeed other Haemophilia Societies abroad. It is difficult to see how the Society could have taken up any other stance in the circumstances. To do so might have caused even greater alarm and confusion.

The Provision of Services

Another aspect of the work of the Society over the years was the provision of assistance and services to its members. In recent years the nature and breadth of these services have increased greatly in line with the much greater resources available to the Society. The Tribunal has no doubt that in 1985 when the results of HIV testing of persons with Haemophilia became available, the Society was faced with a very acute situation with considerable numbers of its members having been diagnosed as positive for HIV antibodies. The Society did its best to provide support and assistance to those persons and their families. The situation was all the more difficult given the lack of suitable professional counselling services available at the time.

The Society was faced with an even more serious situation in the late 1980s and early 1990s as many of its members became seriously ill and some of whom died from AIDS. The evidence to the Tribunal shows that the Society provided a very helpful supportive role to these persons and their families and helped them with terminal care in sometimes extraordinary distressing circumstances. In carrying out this work the Society not only provided an invaluable service for its members but also helped to fill gaps in the services provided by statutory agencies.

Part V

Division III
Chapter 9

The National Haemophilia Services Co-ordinating Committee

History

From the establishment of the National Haemophilia Treatment Centre in the Meath Hospital in 1971 there was in existence a committee known as the "Committee of the National Haemophilia Treatment Centre". It would appear that the purpose of the committee was to co-ordinate the work of the National Treatment Centre and of the various persons who worked there. The committee also had the benefit of a representative or representatives from the Irish Haemophilia Society.

The minutes of the committee disclose that in or around the beginning of 1977 consideration was given to the relationship between the committee and the Department of Health. The minutes of the meeting of the committee of the National Haemophilia Treatment Centre of the 18 January 1977 record that the Department had promised formal recognition for the formation of a committee for the haemophiliac service throughout the country and had requested guidelines from the committee of the National Centre. In these minutes it was further noted that the committee should in future be known as "The National Haemophilia Service Committee". It would seem that this change of name was indicative of a change in the make-up and function of the committee which by then had a wider base, including representatives of regional centres, and whose aim had become the provision of a national service for persons with haemophilia.

At its meeting in June 1978 the committee noted that a letter dated the 12 June 1978 had been received from the Department of Health which set out the Department's view that "*It was not considered necessary or desirable that the National Haemophilia Services Co-ordinating Committee should be appointed by the Minister or have a departmental officer appointed on it but that the Minister is prepared to recognise such committee as the body representing the various interests in this field capable of advising the government departments on how the needs of haemophiliacs might best be met.*" It was also agreed at this meeting that the name of the committee should once again be changed to "The National Haemophilia Service Co-ordinating Committee". Discussion continued

within the committee and with the Department in regard to the objects of the committee and its composition.

Ultimately, the committee agreed upon Terms of Reference and a list of membership of the committee and the minutes of the 5 October 1979 record that the Chairman had submitted the Terms of Reference to the Department and that the Department's formal approval of Terms of Reference and membership of the committed had been received.

The Terms of Reference of the Committee

The Terms of Reference of the National Haemophilia Service Co-ordinating Committee which were approved by the Department of Health were as follows:

"1. *The committee shall be known as the National Haemophilia Service Co-ordinating Committee and shall have the following terms of reference:*

2. *To act in an advisory capacity to the Department of Health, other statutory bodies and to relevant organisations to ensure the provision of a unified service for haemophiliacs throughout the country. In this context haemophiliacs are understood to be patients suffering from any congenital coagulation factor disorder.*

3. *To foster and develop the National Haemophilia Centre and the Regional Clinics to meet international standards and procedures.*

4. *To ensure that satisfactory educational facilities, social services and employment opportunities are available to haemophiliacs by co-operating with the various agencies involved, such as the National Rehabilitation Board and the Departments of Education, Social Welfare and Labour.*

5. *To promote the compilation and operation of a confidential National Register of Haemophiliacs.*

6. *To encourage the education of haemophiliacs in the methods of coping with their problems and in the scope of the services that are available to them, to inform the public of the nature of haemophilia and to create a proper understanding by the public of the capabilities of haemophiliacs.*

7. *To maintain and develop links with the Irish Haemophilia Society.*

8. *To ensure maximum co-operation between the Blood Transfusion Service Board and the treatment centres.*

9. *To stimulate research into any matter relating to haemophilia.*"

The Membership of the Committee

The membership of the committee, as approved by the Department of Health, was as follows:

"1. *Blood Transfusion Board:*
National Director – ex officio;
One Representative appointed by the Board.

2. *Dental Profession:*
   One Representative.

3. *Department of Education:*
   One Representative.

4. *Federation Dublin Voluntary Hospitals and St. James's Hospital:*
   The Director of the National Haemophilia Centre – ex officio.
   One Representative appointed by the Central Council of the Federated Dublin Voluntary Hospitals.

5. *Irish Haemophilia Society:*
   Two Representatives.

6. *National Rehabilitation Board:*
   One medical member of the Board.

7. *Nursing Profession:*
   One Representative.

8. *Orthopaedic Surgeons:*
   One Representative.

9. *Recognised Regional Treatment Centres:*
   One medical Representative from each Centre.

10. *The Organisation of Chief Executives of Health Boards:*
    One Representative."

The following points were also agreed

"*(a) Members of the committee shall be elected for a period of three years.*
(b) The Chairman of the committee shall be elected by its members every three years.
(c) A quorum of the committee shall be four members.
(d) The committee shall have the power to co-opt up to four members for the term of the committee."

The End of the Committee

The evidence to the Tribunal indicates that from in or around the middle of the 1980s meetings of the Co-ordinating Committee became less frequent. It would seem that the committee held its last meeting in 1989.

The Tribunal will now go on to consider a number of specific questions in regard to the work of the committee. However, before doing so the Tribunal feels that it is only appropriate to state that it is clear that over the years the committee was responsible for carrying out a considerable level of valuable work in regard to the improvement of the care of persons with haemophilia, much of which is outside the direct ambit of the matters under investigation by this Tribunal. Further, it would

appear that the various members of the committee gave their time and services to it on a voluntary basis even though most, if not all of them, were already extremely busy with other aspects of their professional or personal lives.

Whether the NHSCC provided an appropriate forum for discussion among and decision by relevant persons in the choice of product for the treatment of persons with haemophilia?

The Tribunal believes that the NHSCC was an appropriate forum in which to discuss the choice of product for the treatment of persons with haemophilia. It was an appropriate forum because it had representatives from the various interest groups who were affected by the choice of product; the distributing body, the Blood Transfusion Service Board, the treating doctors and the ultimate recipients the persons with haemophilia. The policy which was adopted by the NHSCC in early 1980 would appear to have given an appropriate mechanism whereby decisions in regard to choice of product could be brought before the NHSCC for discussion.

A number of points can be made in regard to the practical operation of the NHSCC in relation to product choice. In general it would appear that the committee to a considerable degree was simply a "rubber stamp" for the decision of the treating doctors in consultation with the BTSB as to what products should be used. This is entirely understandable given that the relevant expertise lay in the treating doctors and the BTSB. As a matter of practice it would appear contrary to the terms of the policy document the National Drugs Advisory Board was not consulted in regard to choice of product. Also, it would appear that as time went on the role of the Co-ordinating Committee in regard to choice of product diminished and that even the relatively superficial examination of this issue by the committee ceased to take place.

Whether the NHSCC provided an appropriate forum for communication between persons with haemophilia as represented by the Irish Haemophilia Society and relevant persons and bodies involved in their treatment or care?

Again the Tribunal is of the view that the Co-ordinating Committee did constitute an appropriate forum for such communication between persons with haemophilia and the various persons and organisations who were providing services for them. The great benefit of the Co-ordinating Committee was that it had representatives across the full spectrum of haemophiliac care and therefore provided an opportunity to discuss and develop all aspects of such care. It would appear that the representatives of the Irish Haemophilia Society were active participants in the committee but that their input was more in regard to practical aspects of care, rather than areas where medical and technical expertise were required. The Tribunal believes that given the development of the Irish Haemophilia Society, its input into an equivalent Co-ordinating Committee at the present time would be of a different order than occurred during the life of the original Co-ordinating Committee.

One of the objectives of the Co-ordinating Committee was "*To encourage the education of haemophiliacs in the method of coping with their problem and in the scope of the services that are available to them.*" It is interesting to note that it would appear that there was little if any direct communication by the Co-ordinating Committee with persons with haemophilia. Rather, it relied on

the various representatives from different organisations to carry out such communication. This was unsatisfactory given that the attendance at meetings of the Co-ordinating Committee was somewhat haphazard, understandably so given the other commitments of persons on the Committee. It is unfortunate that the Co-ordinating Committee did not take a more active role in communicating itself directly with not just persons with haemophilia but also those who had responsibility for the care of such persons. The Tribunal has already commented that the committee considered drafting a leaflet which would explain the risk inherent in using commercial concentrates with regard to Hepatitis, but that such a leaflet was never issued. This is but one example of where the Co-ordinating Committee could have become more involved in the dissemination of information in regard to what was happening in relation to haemophilia care; the Tribunal believes if it had done so it could have been of considerable benefit in that there would appear to have been a lack of reliable sources of information in regard to developments concerning the risk of infection with HIV and/or Hepatitis. No doubt lack of resources was one, if not the primary reason why the Co-ordinating Committee did not become involved to a greater degree in this role.

Whether the NHSCC provided an appropriate forum for communication between the National Haemophilia Treatment Centre and other hospitals and doctors providing treatment to persons with haemophilia?

The Tribunal believes that the Co-ordinating Committee did, in theory, provide an appropriate forum for communication between the National Centre and Regional Centres and other hospitals providing haemophilia care but in practice such communication was haphazard and unreliable. It would appear that one of the reasons for this was that there was a tension within the committee from the very establishment of its objects in early 1979 as to the relationship between Regional Centres and the National Centre. This tension centred on the issue as to whether Regional Centres were to be autonomous in nature or simply to be viewed as "satellites" of the National Centre. It would appear from the evidence of Professor Egan that he formed the view that the benefits to the Galway Centre from his continued participation in the work of the committee was minimal and therefore he ceased to attend meetings.

A further difficulty as set out in previous paragraphs was that the Co-ordinating Committee did not become involved in disseminating information, whether by way of circulars or information leaflets, in regard to haemophilia care. Again, as has been previously pointed out, attendance at committee meetings was variable in nature. All of this contributed to a situation whereby the committee was not effective in its role to act on an advisory capacity "*To ensure the provision of a unified service for haemophiliacs throughout the country*".

Whether the effectiveness of the NHSCC was reduced by reason of its status as a non-statutory body or by a lack of funding for secretarial and other services?

The Tribunal has little doubt that the work and effectiveness of the Co-ordinating Committee was adversely affected by its lack of resources and in particular its lack of back-up administrative and secretarial services. To a degree this sprung from the very nature and lack of formal status of the committee whereby it was recognised by the Department of Health but did not have any formal existence whether statutory or otherwise or any power to enforce its views or decisions. The Tribunal believes that it would have been far better if the Committee had a representative or

representatives nominated by the Department of Health, and also was allocated a budget or at least given ancillary staff and office facilities to allow it to carry out its work more effectively. As it was, one of the difficulties caused by the existence of the Co-ordinating Committee was that it gave the illusion of a national service for persons with haemophilia, whereas some of the so-called "regional centres" were centres in name only and the level of co-ordination of the service was at best variable and at times minimal, in particular in relation to services provided outside the two main centres in Dublin and Cork.

Part V

Division III
Chapter 10

Licensing Matters
(Term of Reference 13)

Regulatory Codes

The Tribunal heard evidence from Mr. Thomas McGuinn, Pharmacist of the Department of Health & Children, and from a number of witnesses from the National Drugs Advisory Board of the three regulatory codes which might have relevant to infective products, namely:-

The Therapeutic Substances Code
The Manufacturer and Wholesaler Licensing Code
The Product Authorisation Code

The Therapeutic Substances Code

The code based on the Therapeutic Substances Act 1932 and regulations made pursuant to the Act provided for licensing of manufacturing and importing of therapeutic substances. The intended scheme of the Act was that regulations should establish the relevant standards on a virtually product-by-product basis. Mr. McGuinn's evidence was that such standards were established by regulation up to about 1955 but not thereafter. It would also seem from Mr. McGuinn's evidence that by the mid-1970s the Therapeutic Substances Code contained no standards which could be applied to blood products and was not regarded in the Department of Health as containing effective measures to secure their safety. It also seems there was widespread non-compliance with the Act and that the code was not enforced by the Department. The code remained theoretically in force until the 31 December 1992. It seems the only reason it was not repealed earlier was that it required primary legislation to do so.

The Department of Health regarded blood products as coming within the ambit of the Therapeutic Substances Code on the basis that they came within article 13 (G) of the Act as inserted by the Therapeutic Substances (Amendment) Regulations 1939, namely:-

> "*Any other therapeutic substances of animal origin intended for injection.*"

An issue could arise as to whether as a matter of law the Department were correct in taking the view that "*a therapeutic substance of animal origin*" included products made from human blood. However, since during the period relevant to the Tribunal's inquiry the evidence is that the Department neither applied the Therapeutic Substances Code to blood products nor regarded it as containing measures to secure their safety, it does not seem necessary to express any view on that legal issue.

The NDAB had no involvement of any kind in the Therapeutic Substances Code.

The Manufacturer and Wholesaler Licensing Code

The NDAB did have a role in advising the Minister in respect of this code. The Tribunal heard evidence from Mr. John Lynch of the NDAB of the history of manufacturers and wholesalers licences granted and renewed to the BTSB and the wholesalers licence to AccuScience and of the inspections carried out by his predecessor, Mr. Dowd. Mr. Lynch gave evidence that Mr. O'Dowd, now deceased, had described this code as being directed more towards the integrity of the process than to the actual products themselves. The Tribunal does not believe the evidence it heard raised issues about the integrity of the process in respect of infective product.

The Product Authorisation Code.

Two statutory instruments contain the product authorisation provisions which are relevant to the work of the Tribunal – the European Communities (Proprietary Medicinal Product) Regulations 1975, S.I. No. 301 of 1975, (the 1975 Regulations) *(See Appendix 35)* and the Medical Preparations (Licensing, Advertisement and Sale) Regulations 1984, S.I. No. 210 of 1984, (The 1984 Regulations) *(See Appendix 36).*

The policy and legislative history which led to the adoption of these regulations was again described by Mr. McGuinn. In 1965, the E.E.C. adopted Council Directive 65/65 E.E.C. which provided for product authorisations for proprietary medicinal products. The directive may have been in part prompted by the Thalidomide tragedy. Proprietary medicinal product was defined in Article 1 of the directive to mean:-

> "*Any ready-prepared medicinal product placed on the market under special name and in a special pack.*"

The definition of medicinal product expressly included human blood and human blood products.

After Ireland joined the E.E.C., the European Communities (Proprietary Medicinal Products) Regulations 1974, S.I. 187 of 1974, were introduced to comply with the provisions of E.E.C. Directive 65/65. In 1975 by Article 34 of Council Directive 75/319/E.E.C. it was provided that Council Directive 65/65/E.E.C. should not apply to medicinal products based on human blood or blood constituents. The 1975 regulations, while referring to Council Directive 75/319/E.E.C. in Article 3, expressly included "*coagulation, blood protein and substitutes*" in the schedule of products.

The 1975 regulations purported to be made by the Minister for Health an exercise of powers conferred on him by Section 3 of the European Communities Act 1972. They purported to give effect to Directives 65/65/E.E.C. and 75/319/E.E.C. but also required product authorisations for proprietary medicinal blood products even though the E.E.C. directives expressly did not apply to such products. It is hard to see how the purported application of the 1975 regulations to blood products in those circumstances could have any legal validity or how it could have withstood legal challenge.

It seems the Department of Health were fully aware of this legal infirmity. Mr. McGuinn referred to stretching the powers of the European Communities Act, "*as far as possible and even beyond*". He also stated that he thought reputable companies would not dispute the requirement. The reason for this highly unsatisfactory procedure was again apparently a desire to avoid having to introduce primary legislation.

The 1975 regulations applied only to proprietary medicinal products. All of the commercial concentrates were apparently regarded as proprietary medicinal products. There was some uncertainty as to whether BTSB Factor IX was a proprietary medicinal product but both the BTSB and the NDAB proceeded on the basis that it was. Under the 1975 regulations all products which had not been on the market before the 1 October 1974 required a product authorisation from the 1 April 1976. Products which had been on the market before the 1 October 1974 required a product authorisation from 1 April 1983. In practice, the only two relevant products which were on the market prior to 1 October 1974 were Hemofil and BTSB Factor IX.

The 1984 regulations applied to all medical preparations. The definition of medical preparations included concentrates fractionated from blood and plasma. The regulations were made by reference to powers contained in the Health Acts and the Misuse of Drugs Act 1977. They would not, therefore, have suffered from the same legal infirmity as the 1975 regulations. The commencement date in the 1984 regulations for proprietary preparations was the 1 October 1984. This was also the commencement date for non-proprietary preparations which were not on the market prior to 1 October 1984. For non-proprietary preparations derived from blood products which were on the market prior to the 1 October 1984, the commencement date in the 1984 regulations was the 1 April 1989. The only concentrate which could possibly have come into this category was BTSB Factor IX.

The NDAB had a central role in the product authorisation code in that, although the regulations refer to decisions being taken by the Minister, all applications for product authorisations were in fact referred to and assessed by the NDAB and the Minister always acted on their recommendation.

In the Tribunal's view the regulatory framework before the introduction of the 1984 regulations was very unsatisfactory. The necessity to avoid primary legislation was not a sufficient reason for the procedure which was adopted in the 1975 regulations. The Tribunal can see no reason why regulations to deal with medical preparations based on blood products should not have been made in 1975 pursuant to the provisions of the Health Acts and the Misuse of Drugs Act as occurred in 1984. Apart from their legal infirmity, the 1975 regulations created something of a problem for the NDAB in that they were required to apply the proprietary medicinal code of product authorisations to blood products in circumstances where the code was not applied by the E.E.C. directives to those products. No standards were laid down in the regulations and the NDAB, therefore, effectively had to find and apply their own standards. That situation was not cured by the 1984 regulations. The E.E.C. directives were not applied to blood products until Council Directive 89/381/E.E.C. which applied the directive to "*Medicinal products based on blood constituents which are prepared industrially by public or private establishments.*"

Mr. McGuinn's answer to this criticism was to say that product authorisation codes do not generally lay down rigid standards and that there were standards which the NDAB could apply, such as the Pharmacopoeia. While there is some truth in this argument, the difficulty for the NDAB in applying the product authorisation regulations was increased not alone by the absence of prescribed standards but by the fact that the product authorisation code was not being applied by other European countries to blood products making it less likely that European standards would emerge in practice.

The Present Position

The regulatory position has changed significantly since the 1980s. Relevant products are now regulated at European Union level. Dr. Morris, Pharmaceutical Director of the Irish Medicines Board, described to the Tribunal the work of the European Medicines Agency and the Committee for Proprietary Medicinal Products. Dr. Prince drew specific attention in his evidence to the advantages of the regulation of products being carried out at European level. He pointed out that it is essential that regulatory decisions should be made by a truly expert regulatory authority and that it wasn't reasonable to expect each country to have sufficient expertise in its own regulatory authority to be capable of handling issues in the optimal way. He thought the situation in the European Union a good example of the international collaboration which he considered to be essential.

The Irish Medicines Board Act of 1995 established a new body, the Irish Medicines Board, which in effect replaced the NDAB. In a fundamental change of procedure the Irish Medicines Board, rather than the Minister, is now the licensing authority and the "competent authority" referred to in European Union legislation.

The Work of the NDAB in Product Authorisation

In 1966 the NDAB, National Drugs Advisory Board, was established by the Minister for Health by the National Drugs Advisory Board (Establishment) Order 1966 S.I. No. 163 of 1966. *(See Appendix 37.)* It seems the NDAB was also established as a response to the Thalidomide tragedy. Article 4 of the 1966 regulations set out the functions of the Board:-

" *(a) To organise and administer a service for obtaining and assessing information as regards the safety of new and reformulated drugs and, in particular, their toxicity and other adverse effects,*

(b) to organise and administer a service for obtaining and assessing reports on the adverse effect of drugs in use in the State,

(c) to advise the Minister and others concerned as to the precautions or restrictions, if any, subject to which drugs may be marketed or continued in use in the State,

(d) if requested by the Minister, to consider and report to him on the arrangements to be made for the quality control of drugs, for the registration and inspection of the premises of drug manufacturers, importers and wholesalers, and for the sampling and testing of drugs,

(e) if requested by the Minister, to advise on the certification for export purposes of drugs manufactured or processed in the State,

(f) if requested by the Minister and subject to such conditions as he may approve, to arrange for the collection and dissemination of information in respect of drugs, their pharmacological classification and therapeutic efficacy and in respect of economies in prescribing,

(g) if requested by the Minister to make recommendations regarding standards for the composition, purity and strength of drugs and for the methods of testing drugs,

(h) to consider and report to the Minister on such general or particular matters in regard to drugs as he may refer to the Board for advice."

Between 1966 and 1974 the NDAB had no statutory powers of any kind and a system of drug assessment was carried out on the basis of the voluntary co-operation of the pharmaceutical companies concerned.

In 1974 the National Drugs Advisory Board (Establishment) Order 1966 (Amendment) Order 1974, S.I. No. 176 of 1974, amended the functions of the NDAB by substituting the following for sub-paragraph (e) of paragraph 4:-

" *(e) If requested by the Minister, to advise on the licensing of the manufacture, importation, distribution and sale of drugs, on the standards of manufacturing practice (including quality control) of manufacturers of drugs and on the certification for export purposes or for any other purposes of drugs.*"

This amendment was made to enable the NDAB fulfil the function of advising the Minister in respect of product authorisation applications under the Proprietary Medicinal Products Regulations of 1974 and 1975.

Dr. Allene Scott was Medical Director of the NDAB from June 1967 until her retirement in March 1992. She died in 1994. She was a key figure in the work of the NDAB during the period relevant to the Tribunal's inquiries. The difficulties which her non-availability created for the Tribunal have been lessened by the reasonably comprehensive written records made available by the NDAB and the clear and detailed account of the work of the NDAB, including that of Dr. Scott, given to the Tribunal by witnesses from the NDAB. The Tribunal appreciates this work by the witnesses from the NDAB.

The Tribunal believes the work of the NDAB relevant to Term of Reference 13 can best be examined by reference to a number of issues.

(1) Whether the NDAB responded adequately and appropriately to the emerging information of the risk of transmission of HIV through concentrates in its dealings with the commercial fractionators during 1983 and 1984?

On the 8 June 1983 Dr. Scott wrote to Armour, Travenol, Immuno and Dr. O'Riordan of the BTSB a letter in the following form:-

"*The National Drugs Advisory Board has recently expressed concern with regard to the possibility of transmission of AIDS through blood products and derivatives. Your comments would be appreciated on this matter and the steps which can be taken to minimise this risk.*"

The letters of response from the fractionators all stated that the companies had complied with the F.D.A. Office of Biologics Recommendations of the 24 March 1983 concerning the selection of donors." *(A copy of these recommendations is at Appendix 38.)* The letters from Armour and Travenol also referred to their investigation of heat treatment, principally in the context of reducing the risk of hepatitis transmission. In his reply Dr. O'Riordan enclosed information on AIDS from the Committee of Experts meeting at Lisbon in May 1983.

Armour, Travenol and Immuno were the commercial fractionators who held product authorisations for Factor VIII from the NDAB in mid-1983. In the Tribunal's view the letter from Dr. Scott was an appropriate and timely response by the NDAB to information which would have emerged about the risk of transmission of AIDS through blood products in the first half of 1983.

In February 1984 an application by Cutter for product authorisation for a Koate, non-heat treated Factor VIII, was rejected by Committee 1 of the NDAB and deferred by Committee 2 pending the result of consultation by the NDAB with haematologists about the source of plasma. The NDAB then pursued a correspondence with Cutter about their sources of plasma, and in particular whether they complied with the F.D.A. recommendations. In May 1984 the NDAB wrote to a number of consultant haematologists seeking their view as to whether they would use a Factor VIII product "knowing the source was pooled plasma collected from many centres in the U.S.A. including New York, Miami and San Francisco". The NDAB received replies from Dr. Brian Otridge, Dr. Egan and Professor Temperley.

On the 13 September 1984 the NDAB wrote to Cutter informing them that:-

> " *(1) As the Factor VIII preparations currently on the Irish market are all heat treated for prevention of hepatitis transmission, the National Drugs Advisory Board would be unwilling to accept any Factor VIII products which were not similarly treated;*
>
> *(2) Moreover, haematologists have indicated that they would be unhappy about using Factor VIII concentrates whose original plasma was collected within the areas associated with Acquired Immune Deficiency Syndrome. A written guarantee and evidence that Cutter does not collect source plasma for this product from any of the risk areas would be required to satisfy this point.*"

(A copy of this letter is at Appendix 39.)

On the 9 October 1984 Professor Temperley wrote a letter to Dr. Scott to which reference has already been made. In the letter Professor Temperley summarised the information about AIDS, hepatitis and commercial concentrates which he had received from various sources, including U.K. Haemophilia Centre Directors. He stated at that time that he intended to continue using non-heat treated product.

(A copy of the letter is at Appendix 40.)

Dr. Scott acknowledged Professor Temperley's letter on the 14 November 1984 and stated that the NDAB had agreed in principle to availability of both types until specialists in haemophilia had reached a conclusion on their preference.

(A copy of this letter is at Appendix 41.)

The NDAB had thus raised and pursued with the commercial fractionators the two issues of importance during 1983 and 1984, namely the question of the source of plasma and, in the latter

part of 1984, the question of heat treatment. The September letter to Cutter had referred to heat treatment "for prevention of hepatitis transmission" and was not completely accurate in saying that all Factor VIII preparations then currently on the Irish market were heat treated. Having regard to the letter from Professor Temperley and the limited information then available about the efficacy of heat treatment in inactivating the HIV virus, the Tribunal considers the response to Professor Temperley's letter to have been appropriate and reasonable.

(2) Whether the NDAB adopted a policy in December 1984/January 1985 that only heat treated Factor VIII and Factor IX concentrates should be available on the market? Whether that policy was adopted in a timely fashion?

The diagnosis of AIDS in a patient with haemophilia in St. James's Hospital came to the notice of the NDAB in early December 1984. The question of AIDS and heat treatment of concentrates was considered at a meeting of Committee 1 in December following which Dr. Scott wrote a letter to all companies then in contact with the NDAB who fractionated Factor VIII concentrate, Armour, Cutter, Travenol, Alpha Therapeutic, Immuno and Nordisk:-

> "*The National Drugs Advisory Board is currently considering the matter of heat treatment of Factor VIII containing preparations and a proposal that only such preparation should be available on the market.*
>
> *Before reaching a final decision on such a recommendation, the Board would appreciate your comments in the light of your own product and also with regard to the present state of knowledge.*
>
> *Your early reply would be appreciated.*"

On the 20 December 1984 the NDAB received a letter from Professor Temperley dealing with the circumstances of his patient who had been diagnosed with AIDS. The letter went on to deal with the more general situation:-

> "*From discussions with the Reference Centre Directors which included eminent Virologists and representatives of the DHS, the BTS and the DHSS, Plasma Fractionation Plants, it became clear that heat treat concentrates would have to be used in Ireland forthwith. Evidence of the efficacy of heat treatment is indirect but the seriousness of the problem demands that Haemophiliacs are protected by every possible means. I appreciate this is in opposition to the advice received by me and given to you earlier in the year but I think you would agree that this problem is fast moving and demands constant assessment and revision.*
>
> *With the above in mind Dr. Paule Cotter, Regional Haemophilia Centre, Cork, and I have advised purchase and use of only heat treated products from January 1, 1985. I have advised the BTSB through Dr. J. P. O'Riordan that we will expect this supplier to provide heat treated products in the very near future. I have been in touch with DOH to warn of the extra costs involved. During Christmas and early New Year all non-heated products will be withdrawn.*"

On the 9 January 1985 Dr. Scott wrote to Professor Temperley stating that the NDAB had notified all concerned with regard to the use of heat treated blood products.

By letter of the 8 January 1985 the NDAB wrote to Travenol stating that the NDAB would in future only be recommending for authorisation Factor VIII concentrates which incorporate a suitable heat treatment stage in their preparation. The letter went on:-

> *"While most concern has centred on Factor VIII concentrates to date, it is felt that such measures should be extended to other blood Factors, such as Factor IX complex, as soon as possible. The Board would appreciate hearing of your plans with regard to heat-treatment of this Factor IX complex."*

(See Appendix 42.)

On the 17 January 1985 Professor Temperley wrote to Dr. Scott in the following terms:-

> *"During 1985 we are purchasing only two commercial heat-treated Factor VIII concentrates from Cutter and Armour. We will be purchasing our usual quantity of cryoprecipitate from Pelican House and are assured this will be heat-treated in about one month's time. We will be purchasing only heat-treated Factor IX concentrate from Cutter and have been advised that Pelican House Factor IX concentrate will be shortly heat-treated."*

(See Appendix 43.)

At this stage, the NDAB had already authorised Haemate P, a pasteurised product and Hemofil T, a dry heat-treated product. The NDAB received co-operative responses from the fractionators on the issue of heat treatment and subsequently issued product authorisation for Armour and Cutter heat-treated products.

The Tribunal believes the NDAB did adopt a policy in December 1984/January 1985 that only heat-treated Factor VIII and Factor IX concentrate should be available on the market. The Tribunal also believes this was adopted in a timely fashion and, in conjunction with the initiative taken by Professor Temperley and Dr. Cotter, brought about a switch for commercial concentrates to heat-treated product in this country at a date which compares favourably with that achieved elsewhere.

(3) Whether the NDAB carried out an appropriate assessment on the protocols of heat treatment proposed as a means of protection against the risk of HIV by companies seeking product authorisations or variations of existing product authorisations?

The Tribunal heard evidence on this issue from Vincent Morley and Mary Rafter, Pharmacy Assessors. The first application for product authorisation for a dry heat treatment protocol was that for Hemofil T considered by Vincent Morley in 1983. At that stage the HTLV III virus had not been identified and the information submitted in support of the application all related to hepatitis and primarily consisted of chimpanzees' studies. The first application for a product authorisation including heat treatment designed to inactivate HTLV III was an application by Armour in January 1985. They submitted results from the CDC, Atlanta, and a letter from Bruce Evatt indicating HTLV III had proved very heat labile, even after short heating. In January 1985 no standards had been established for heat treatment protocols. The Armour heat treatment had been accepted by the regulatory authorities in the United States and in the United Kingdom. In the Tribunal's view the acceptance of the protocol by the NDAB was, in the circumstances, appropriate.

The Tribunal similarly believes that the approval granted by the NDAB in April 1985 for Koate HT, the Cutter product, using 68 degrees centigrade for 72 hours was also appropriate.

In 1987 an application was made by Armour for a variation of their product authorisation to include a heat treatment protocol of 68 degrees for 72 hours (the Cutter protocol). The application by Armour at that time obviously required particularly scrutiny having regard to the withdrawal of the Armour product heated at 60 degrees centigrade for 30 hours in October 1986. The Tribunal is satisfied that the application did receive suitable scrutiny and that the protocol involved, 68 degrees centigrade for 72 hours was well regarded at that time as a means of inactivating the HIV virus. The documentation accompanying the application suggested a viral inactivation for that protocol of greater than 7.4 logs which gave a margin of safety over the 4 or 5 log reduction which was regarded as standard.

The Tribunal therefore believes the assessments carried out by the NDAB on the heat treatment protocols proposed as a means of protection against the risk of transmission of HIV were appropriate.

(4) Whether the NDAB received any communication from Armour or any other party which should have led it to question the safety of Armour dry heat-treated Factor VIII in respect of the risk of transmission of HIV either before the 21 February 1986 or between that date and the withdrawal of the product in October 1986?

There is no evidence that the NDAB received any communication from Armour or any other party which should have led it to question the safety of Armour dry heat-treated Factor VIII before October 1986. Indeed, the communication the BTSB received from Armour during this period was reassuring. In reply to a letter from Dr. Scott inquiring when product from HIB antibody tested donors would be available on the market, Armour wrote on the 5 March 1986,

> "*The material from tested donors is already on the market and is that currently being supplied to Eire.*"

(See Appendix 44.)

(5) Whether there was any published material which ought to have led the NDAB to question the safety of the Armour product either in the period prior to the 21 February 1986 or in the period between the 21 February 1986 and October 1986?

The relevant published material seems to be the letters to the *Lancet* from White & Others and Van den Burg & Others dated 15 March 1986 and 5 April 1986 and from Dr. Prince dated 31 May 1986 together with the editorial note of the 14 June 1986 all of which are referred to in Part III, Chapter 4 in the section entitled Viral Inactivation 1985/6. In the Tribunal's view these letters would not, in themselves, have been sufficient to require the NDAB to take any concrete step in respect of the Armour product. If the NDAB had the resources to monitor the letters' section of the Lancet and to

pursue lines of inquiry arising out of such monitoring, it might be suggested that the NDAB should have pursued inquiries with Armour or perhaps other regulatory authorities arising out of these publications. The evidence was that the NDAB at this time had a shortage of staff and enormous backlogs of work. In those circumstances the Tribunal does not believe the NDAB should be subject to criticism for not having pursued inquiries arising out of these letters.

(6) Whether the product authorisation which issued on the 25 March 1985 for non-heat treated Koate Factor VIII was issued as a result of an administrative error in the NDAB?

The evidence indicates that in January 1985 Cutter informed the NDAB that it was moving towards total production of heat-treated Koate and that it did not anticipate any future clinical use of the non-heat-treated product. No non-heat-treated Koate Factor VIII was supplied by Cutter to this country after January 1985. An application for heat-treated Koate was submitted by Cutter and subsequently granted.

No product was ever supplied on foot of the product authorisation which issued on 25 March 1985. The Tribunal nonetheless heard evidence of the circumstances in which that product authorisation was granted. The Tribunal is satisfied it occurred as a result of an administrative error on the part of the NDAB in wrongly informing the Department of Health that the application for the non-heat-treated product had been approved by the Board of the NDAB.

(7) Whether and to what extent the NDAB had a responsibility to monitor compliance with the product authorisation code? If this was not the responsibility of the NDAB, whether such monitoring was carried out by the Department?

The extent of the role of the NDAB in monitoring compliance with the product authorisation code was a matter of some contention between the NDAB and the Department of Health & Children during the Tribunal's hearings. The Tribunal does not believe the NDAB was given any general responsibility for monitoring compliance with the product authorisation code. It was neither given the statutory powers which would have been appropriate to that function nor the practical resources to carry it out. The Tribunal believes the general obligation and responsibility for monitoring compliance with the product authorisation code lay with the Department of Health. It seems from the evidence that during the relevant period the Department did not have any satisfactory system for doing so

(8) Whether there were particular matters which came to the notice of the NDAB in respect of BTSB Factor IX which ought to have led the NDAB to pursue the question of product authorisation with the BTSB and if necessary by way of report to the Department? Whether the NDAB ought to have contacted the BTSB in January 1985 or within a relatively short time thereafter to ascertain whether the BTSB was heat treating its Factor IX?

Dr. Morris, who joined the NDAB in 1987 as Senior Pharmacist, gave evidence from an examination of the records of the NDAB of the contact recorded between the BTSB and the NDAB concerning BTSB Factor IX in the period prior to January 1985. On the 23 December 1982 Dr. O'Riordan wrote to Dr. Scott a letter which appears to have been a review under the 1975 regulations of products which would have been on the market before the 1 October 1974 and would therefore have required product authorisation by the 1 April 1983. In the course of the letter he referred to Factor IX concentrate (BTSB) and stated,

> "*In connection with the application for Factor IX concentrate, further information is required from the National Haemophilia Treatment Centre. The application will be submitted as soon as possible.*"

He concluded the letter by saying,

> "*Further details in respect of any of the above will be provided as necessary: meanwhile, formal application to the Department of Health is being withheld, pending your further advice.*"

(See Appendix 45.)

There was no recorded response or further correspondence at that stage.

In 1984 there was contact between Ms. Cecily Cunningham of the BTSB and the NDAB. This led to a letter from Dr. O'Riordan dated 6 June 1984 to Dr. Scott in which he stated:-

> "*The Blood Transfusion Service Board (BTSB) is drafting its application to manufacture human Factor IX concentrate as an established drug.*
>
> *This product has been prepared and used with complete success since 1972, the BTSB currently supplying 65% of the country's needs of 1,200,000 I.U. per annum.*"

He went on to deal with the question of the packaging of the product for home treatment and the desirability of attaining 100% self-sufficiency. *(See Appendix 46.)*

Dr. Scott replied by letter of the 21 June 1984 suggesting that an application for the two forms of BTSB Factor IX should be made at the same time. *(See Appendix 47.)*

The BTSB did not submit an application for product authorisation for BTSB Factor IX and had not done so by December 1984/January 1985.

The letter of the 6 June 1984 had made it clear that the BTSB had been supplying Factor IX since 1972 and was currently supplying 65% of the country's total needs. Both the BTSB and the NDAB were clearly proceeding on the basis that BTSB Factor IX was a proprietary medicinal product which required a product authorisation under the 1975 regulations. It should therefore have had an authorisation prior to the 1 April 1983. Although the NDAB did not have the general responsibility for monitoring compliance with the product authorisation code, an issue does arise as to whether in such circumstances where it had specifically come to the attention of the NDAB that the BTSB were issuing Factor IX without the appropriate product authorisation, the NDAB should have pursued the matter initially with the BTSB and, if necessary, with the Department.

The primary obligation to make and pursue an application for product authorisation lay with the BTSB. When they did not do so it would have been appropriate for the NDAB to pursue the matter with the BTSB in correspondence. However, it is perhaps understandable that since no product authorisation application was pending the matter did not receive any continuing attention in the NDAB.

In the Tribunal's view, the second issue, whether the NDAB ought to have contacted the BTSB in January 1985 or within a relatively short time thereafter to ascertain whether it was heat treating its Factor IX is the more significant. The policy adopted by the NDAB of requiring product to be heat-treated has been described and the two relevant letters from Professor Temperley to the NDAB of the 20 December 1984 and the 17 January 1985 have been quoted. If the only letter received by the NDAB had been that of the 20 December 1984, they might reasonably have inferred that all non-heat-treated products, including BTSB products, would be withdrawn. The letter of the 17 January, however, seems to contain an inference that the BTSB were continuing to supply both cryoprecipitate and Factor IX concentrate although containing assurances that they would be heat treated in "*one month's time*" and "*shortly*".

There is no record of any contact between the NDAB and the BTSB at this time to ascertain whether the BTSB products had been heat treated. In the Tribunal's view the NDAB should have made such an inquiry. Apart from the general knowledge which the NDAB had of the BTSB products, they were specifically referred to in Professor Temperley's letter. The policy of requiring that all products should be heat treated was obviously of fundamental importance and regarded as such by the NDAB. The Tribunal appreciates that the NDAB at that time would have been more inclined to assume that the BTSB, as another public service body, would have implemented the assurances reported by Professor Temperley than in the case of a commercial enterprise. The Tribunal nonetheless feels the NDAB should have sought information from the BTSB.

It is difficult to assess what effect if any would have resulted from the NDAB pursuing the matter with the BTSB. It doesn't seem at all likely that any such intervention would have resulted in the immediate withdrawal of non-heat treated BTSB product. It seems much more likely that the BTSB would, in effect, have both sought and been given time to implement heat treatment. What might have been achieved by an intervention by the NDAB was some additional pressure on the BTSB to implement heat treatment more speedily than in fact occurred.

(9) Whether the NDAB failed to deal with an application in 1988 by the BTSB to be substituted for Armour as the licence holder of the product authorisation for the Factor VIII custom fractionated by Armour for the BTSB and whether this had any practical consequences for the safety of the product?

The evidence indicated that the NDAB did fail to deal with such an application by the BTSB but it also indicated that this did not have any consequences for the safety of the product. The application related to a product which was the subject matter of an existing authorisation. The only matter in the application was to substitute the BTSB for Armour as the licence holder. There was no change proposed in the nature of the product.

(11) Whether the NDAB should have adopted a policy from in or about 1987 of requiring more effective methods of inactivation against the risk of transmission of NANB hepatitis?

The last dry heat treated product variation approved by the NDAB was the Armour application to adopt the Cutter protocol of 68 degrees at 72 hours approved on the 6 August 1987. Subsequent applications were for monoclonal and solvent detergent product which were approved by the NDAB. The issue therefore seems to be whether the NDAB ought to have revoked the product authorisations for dry heat treated products in the period prior to 1990 on the ground that they did not provide sufficient protection against the risk of transmission of NANB hepatitis. The Tribunal did not have evidence of such a policy of being adopted by any other regulatory authority at that time. The Tribunal does not believe that it could properly conclude that such a step was required of the NDAB during that period.

Conclusion

The Tribunal's overall impression of the work of the NDAB was that it was carried out appropriately having regard to the resources then available to the NDAB, the then available information and prevailing standards of opinion and practice. However, the Tribunal has set out its concerns in regard to the failure to pursue the issue of whether the BTSB had commenced heat treating its products early in 1985.

Part V

Division III
Chapter 11

The Minister and Department of Health & Children (Term of Reference 14)

Introduction

The Tribunal heard evidence from a number of officials in the Department of Health and Children and from two former Ministers for Health, Mr. Barry Desmond and Dr. Rory O'Hanlon.

The basic relationship between the Department of Health and Children and the BTSB was established by the terms of the Blood Transfusion Service Board (Establishment) Order 1965, a copy of which is set out in *Appendix 10* hereto. The functions of the Minister for Health and Children in respect or the Board are set out therein; he has power to make directions in regard to charges to be made by the Board, he is entitled to receive advice, information and assistance in relation to any aspect of the service provided by the Board; he appoints the Chairman and members of the Board; he receives a yearly report from the Board and he is entitled to require the Board to provide such information as he may require from time to time regarding the performance of its functions. Further, the Minister may declare that any of the powers of the Board can only be exercised with his consent. The Tribunal intends to look at the relationship between the Department and the BTSB under a number of different headings.

Control and Administration of the BTSB

The primary responsibility in regard to the making available of blood and blood products lay upon the BTSB pursuant to the provisions of the 1965 establishment order. The BTSB had its own professional staff some of whom at the relevant time in the 1980s would have had a considerable international reputation in their particular fields. Further various members of the Board of the BTSB brought specialised knowledge to their role. In these circumstances, the Tribunal believes that the Minister for Health and the Department would have been open to justifiable criticism if they had

attempted to interfere in regard to the day-to-day running of the service. The Tribunal believes that it was in general reasonable for the Minister and the Department to rely upon the expertise of the staff employed in the BTSB and of the members of its Board.

Nonetheless, the Tribunal is of the opinion that the Department's supervisory actions were lacking in a number of respects. It was clear from the evidence given to the Tribunal by Mr. Barron and Mr. O'Dwyer that the Department did review the staffing and structures of the BTSB. They were aware of certain structural weaknesses in the organisation which had become apparent in regard to the difficulties which had emerged at the time of the move of the headquarters to Pelican House in Mespil Road. Also, a full review of the structures of the organisation had taken place in 1981. The Department had concerns about the dual role of Chief Executive and Medical Director being carried out by the same person. Further it was aware since 1980 that Dr. O'Riordan was approaching retirement age and that other senior medical personnel in the Board were similarly relatively close to retirement. Although the concerns were about administrative competence rather than clinical matters, nonetheless they revolved around real perceived weaknesses in the organisation.

These matters should have alerted the Department to the probability that the BTSB was ill-suited and ill equipped to deal with the considerable challenges to blood services brought about by the emergence of the AIDS virus in 1982 and 1983. In the opinion of the Tribunal the Department should have moved more quickly and more decisively to attempt to resolve staffing and structural problems in the BTSB particularly as it became clear that that organisation would be required to deal with very significant problems as a result of the spread of AIDS. The Tribunal is of the opinion that its failure to do so contributed to the situation where the BTSB found it very difficult to deal with the problems caused to the blood service by the rapid progression of AIDS. Strengthening the membership of the Board, in particular to regard to financial expertise, was not enough, to adequately deal with the situation.

Again, the Tribunal is of the view that it should have been obvious that there was always likely to be difficulties in the BTSB when Dr. O'Riordan, who had held the office of National Director for many years retired from that post. The Department did not take sufficient steps to try to ensure that those difficulties did not emerge or at least that their effects would be reduced. Indeed it would appear that there was a steady reduction in the number of medical consultants employed in the Board in the years following the retirement of Dr. O'Riordan, in this regard see Part III Chapter 7. This, in the Tribunal's view, simply added to the very real difficulties which the BTSB was already experiencing.

Finance

The Tribunal had the benefit of very helpful evidence from Mr. Dermot Smyth of the Department of Health and Children in regard to the general financial position of the Department during the periods relevant to the work of this Tribunal. In regard to the details of the finances of the BTSB the Tribunal also had the benefit of evidence from Mr. John McStay together with a comprehensive report prepared by him.

The Tribunal is of the opinion that it is perfectly clear from the evidence of Mr. Smyth that the 1980s were a period of considerable financial hardship in respect of the public service in general and in respect of the Department of Health and Children in particular. Very severe cutbacks in services were required to stay within strict financial limits. The attitude of the Department of Health in relation to the finances of the BTSB and to the National Haemophilia Treatment Centre in St. James's Hospital must be viewed against this background.

The Tribunal was left with the impression that the BTSB did no worse that other agencies that received financial contributions from the Department. From the evidence given to the Tribunal, it could see no pattern of excessive delay in dealing with applications for increases in the price of blood, a matter which was central to the financial well being of the BTSB. Capital grants were made available to the organisation to deal with various requirements as they arose, for example the movement of the headquarters to Pelican House albeit such grants seemed to be paid after the expenditure had occurred which caused financial pressures to develop. The problems arising from the lack of working capital and the system of paying capital grants after expenditure are examined and analysed by the Tribunal at Part III, Chapter 6.

In regard to the National Haemophilia Treatment Centre in St. James's Hospital, the Tribunal has no doubt that the level of service provided was probably affected by the overall financial situation in the Health Services in the 1980s. But again the Tribunal believes that they were not treated any worse or any better than other aspects of the health service. The Tribunal believes that in common with much of the health service at that time the emphasis was on ensuring that basic essential services were available.

In regard to two matters, however, the Tribunal is of the opinion that the response of the Department was lacking that is in regard to the provision of dental services for persons with Haemophilia and counselling for persons who had been found to be infected with the HIV virus. The Tribunal is of the opinion that it is likely that the Department were aware of the critical deficiencies in the dental services available to persons with Haemophilia. It would appear that small amounts of money could have made considerable improvements in the service.

In relation to counselling the authorities in St. James's Hospital wrote on a number of occasions to the Department of Health pointing out the acute situation which had arisen in the hospital in regard to the lack of counselling facilities for persons with Haemophilia who had been diagnosed as being HIV positive. The Tribunal is satisfied that there was a failure to deal with this correspondence within a reasonable time scale in that there was no response for 17 months; the gap between first request and actual appointment was two-and -a-half years. Again, the Tribunal is of the view that this was an area in which there was a critical deficiency in the nature of the services available which could have been dealt with by sanctioning additional social work staff. Even having regard to the difficult financial circumstances which pertained at the time, the Tribunal believes that the Department should have looked more sympathetically at the application for an additional social worker and should have dealt with the matter in a much more expeditious way. There can be no doubt that the lack of availability of suitable counselling facilities made an already very difficult situation even worse for the persons with Haemophilia who were affected.

The National Drugs Advisory Board

The Minister for Health also had certain powers and functions in regard to the National Drugs Advisory Board pursuant to its 1966 Establishment Order. The Tribunal is of the view that it is unnecessary in this portion of the Report to set out in detail those functions or the interaction between the Department of Health and the NDAB. However, there was evidence before the Tribunal of the continuing efforts over the years by the NDAB to obtain approval for more staff and resources from the Department.

Again, these requests must be viewed against a background of considerable fiscal rectitude which was being promoted by the Government throughout the 1980s. The Tribunal was left with the impression that the NDAB was constantly struggling to obtain sufficient staff to allow it to carry out its work in a more efficient way but that generally it was unsuccessful in its efforts. The position

would appear to have been that the NDAB simply did not have the staff and the resources to carry out all of its functions in an expeditious way. This led to a situation where it was a regular feature of the NDAB that there were very considerable backlogs of work.

The Tribunal is of the opinion that it is clear that the Department of Health were aware of the situation and of the nature and extent of the backlogs which had developed. The Department attempted to make some more staff available but always against the backdrop that there were many other calls upon its resources. The result of this was that the NDAB was involved in a constant struggle to attempt to catch up with its backlog of work which it could never achieve because of the staff levels and resources available to it.

Self-sufficiency

The various witnesses from the Department and in particular Mr. Barron accepted that certainly from the very early 1980s it was an element of national policy that the State should attempt to achieve self-sufficiency in regard to blood and blood products. It would appear that this policy was never formally decided upon by a particular Minister for Health or reduced to writing in a specific policy document. The policy seems to have been underpinned by a number of factors; a recognition that Irish-sourced products would be safer than the equivalent products from abroad; the acceptance by international organisations such as the Council of Europe that self sufficiency was an important and desirable objective; an understandable wish from a perspective of national esteem that the country should not be reliant on others in respect of blood products and possible administrative efficiencies and economic savings which could result from self-sufficiency.

Since it was an important policy objective, the Tribunal believes that the Department of Health and Children had a responsibility to attempt to ensure that the goal of self-sufficiency was being pursued and would be met in this country. The Tribunal is of the opinion that this view is supported by the fact that recommendations from the Council of Europe were directed to member States and supported and emphasised the importance of self-sufficiency in regard to blood products. Also the actions of the various departmental officials support the view that the Department did have a role to play in regard to self-sufficiency since they themselves on occasions made inquiries to the BTSB in regard to what was happening to achieve the objective.

However, in assessing how the Department carried out its role, the Tribunal is of the opinion that one must have regard to a number of important matters. The primary responsibility in regard to the making available of blood and blood products lay upon the BTSB pursuant to the provisions of the 1965 establishment order. The persons with expertise in the area of blood and the production of blood products were working in the BTSB and the Department did not have any personnel with particular expertise in that area. It was not until early 1983 that the risk of the transmission of AIDS through blood products became widely recognised in the medical community. Also in the early 1980s the seriousness and effects of non-A non-B Hepatitis were not widely recognised.

The evidence to the Tribunal shows that a policy document on the purchase and use of concentrates was drawn up by the National Haemophilia Services Co-ordinating Committee in late 1979 and early 1980 and the finalised document was sent to the Department of Health on the 1 February 1980. Internal discussions took place within the Department. On the 25 June 1980 a reply issued. *(See copy of reply at Appendix 48.)* It stated inter alia that if the BTSB felt it necessary to produce a more concentrated form of Factor VIII it was empowered to do so under Article 4 of its Establishment Order. It also confirmed that the Department had no objection to the proposals set out in paragraph (1) to (5) of the policy document.

On the 23 September 1980 Dr. O'Riordan sent to the Department a copy of recommendation R (80) 5 of the Council of Europe. This recommendation provided among other things that it seemed desirable for each Member State to attempt to find within its own population the necessary quantities of anti haemophiliac factors or the required quantities of plasma for their production. On the 9 July 1981 Dr. O'Riordan in his capacity as Chairman of the Co-ordinating Committee sent to the Department a copy of a report prepared by Professor Temperley and Mr. Hanratty in regard to the requirements for Factor VIII concentrate which report he indicated had been unanimously agreed by the Co-ordinating Committee on the 22 May 1981. The Report concluded that from the information available production by the BTSB of 1.5 million Factor VIII units would by 1985 represent a modest but reasonable target. The Department replied by letter dated the 21 July 1981 asking whether the BTSB had considered the report and accepted its findings and if so what additional resources would be needed to implement them and how the Board would propose to meet the costs involved. *(See copy of this letter at Appendix 49).*

Internal Memoranda within the Department show that inquiries were made of Dr. O'Siochfhradha, a department official who was on the Board of the BTSB, as to whether the report of the 19 May 1981 prepared by Professor Temperley and Mr. Hanratty had been considered by the Board. He kept Mr. Kelly informed of developments and supplied him with a copy of an extract from the minutes of a board meeting of the 21 October 1981 to the effect that it was agreed to defer further consideration of the question of the production of a more purified concentrate for the treatment of Haemophilia A pending the outcome of an ongoing clinical trial of the proposed product. The extract from the minutes of the meeting is as follows:-

> "*The ND commented briefly on the financial and other advantages to be gained from the production by the Board of a more purified concentrate for the treatment of Haemophilia A, particularly as this relates to home treatment.*
>
> *It was agreed to defer further consideration of the correspondence pending the outcome of an 'on-going' clinical trial of the proposed product.*"

It would appear that the Department continued to make inquiries from Dr. O'Siochfhradha until February 1982 when he indicated that the matter had not been on the agenda of the BTSB Board since October 1981. There was no evidence available from departmental files that further inquiries were made after that time.

The evidence of Mr. Barron, and in particular Mr. Kelly, establishes that the Department did consider in 1980 and 1981 the question of the production of a more concentrated form of Factor VIII by the BTSB. The Department by its letter of the 21 July 1981 in effect inquired from the BTSB what was its position in regard to the production of such a concentrate and whether it required additional resources for that purpose. The internal memoranda suggest that the information available to the Department in the autumn of 1981 was that clinical trials of a product were ongoing and that there was no change in that situation by February 1982. The evidence to the Tribunal also shows that as late as the end of 1983 the BTSB were of the view that the prospects for a home-produced product were encouraging and on the 12 July 1983 Dr. O'Riordan had written to the Department enclosing a copy of a press statement to the effect that the BTSB was on the point of making a big breakthrough with regard to the question of home production of Factor VIII.

The development of an intermediate product was a fairly technical and specialised matter and the Tribunal believes that there was no reason why the officials in the Department should not have accepted the information which was being given to them by the BTSB in regard to same. The Tribunal is of the opinion that the efforts made by Mr. Kelly and other officials in the Department to get information in regard to the matter in the summer and autumn of 1981 were reasonable and the

information which they obtained indicated that progress in the sense of an ongoing clinical trial was taking place. In the view of the Tribunal this is consistent with other evidence before the Tribunal which suggests that officials in the BTSB, and in particular Dr. O'Riordan and Mr. Hanratty, took an overly optimistic and positive view of the potential of the "Heparin" project.

After February 1982 there is no evidence that the Department continued to inquire or to monitor the progress of the BTSB in producing an intermediate product with a view to achieving self-sufficiency. While in the view of the Tribunal the Department should have done so, the Tribunal has no doubt that if such inquiries were pursued by the Department it is probable that they would have been given reassurance that the matter was in hand and that progress was being made. This is consistent with the approach of the BTSB in regard to the matter in 1983. While there would appear to have been a change of policy by the BTSB at the beginning of 1984 in regard to how the goal of self sufficiency might be achieved, again, the Tribunal is of the opinion that it is likely that if inquiries had been made by the Department in 1984 the BTSB would have informed them of its plans for plasma collection to allow custom fractionation to take place.

Safety of Blood Products

In the opinion of the Tribunal both the Minister for Health and the Department of Health had functions and responsibilities in relation to attempting to ensure that blood and blood products being used in Ireland were as safe as possible. This responsibility stemmed from a wider responsibility on the Minister and the Department to attempt to promote and preserve the health and welfare of the citizens of the country and to attempt to ensure that all medicines, drugs and blood products being used in this country were of a suitable and safe standard. Further, the Tribunal is of the opinion that this responsibility was heightened by the recommendations of the Council of Europe which required member States to take appropriate measures to ensure the safety of blood and blood products which were being used in their respective jurisdictions.

However, it again seems to the Tribunal that the Department was entitled to rely to a significant extent upon the experience and expertise of other bodies who had a more direct responsibility for ensuring the safety of blood products. The primary responsibility in this regard lay on the BTSB. Other bodies however also had functions and responsibilities in the area such as the National Haemophilia Services Co-Co-ordinating Committee and the National Drugs Advisory Board. These bodies had far greater levels of experience and expertise available to them than would have been present in the Department of Health.

The evidence to the Tribunal discloses that the Department of Health was active in attempting to ensure the safety of blood products. Following the diagnosis that a person with Haemophilia was suffering from AIDS in November 1984 Dr. James Walsh of the Department was involved in meetings with Professor Temperley and Dr. Cotter with a view to bringing about the use of solely heat-treated concentrates. Dr. James Walsh was again involved in meetings with the BTSB in the Summer of 1985 in regard to the pending introduction of HIV testing and correspondence took place between the Secretary of the Department and Dr. O'Riordan in regard to the rate of progress in relation to such introduction. The Department, through Dr. Walsh, was engaged in discussions with the BTSB in January 1986 in regard to the need for a withdrawal of certain untested products and the then secretary of the Department wrote to the BTSB at that time stressing the importance of such a withdrawal.

The evidence to the Tribunal suggests that the Department in general displayed a real and significant interest in the safety of blood products and was willing to become involved if questions in regard to such safety arose. On occasions the Department representatives relied upon and perhaps

deferred to the views of experts such as treating doctors or medical personnel in the BTSB but the Tribunal does not think that they can be blamed for doing so. However, there is one area where the Tribunal if of the opinion that the evidence clearly disclosed that the Department and its officials could have pursued a matter involving the safety of blood products with more vigour.

Following the meeting with Professor Temperley and Dr. Cotter in December 1984 a letter dated the 18 December 1984 was sent to the BTSB seeking the urgent use of only heat-treated products. *(See a copy of this letter at Appendix 13)*. Dr. O'Riordan replied to Professor Temperley on the 2 January 1985 to the effect that the question of heat treatment of all products for the treatment of persons with Haemophilia was being given urgent attention by the Board. *(See copy of this letter at Appendix 50)*. The evidence to the Tribunal shows that on the same date the 2 January 1985, the Department issued a press statement which including a paragraph to the effect, that the Department had recommended that only heat-treated products be used. The evidence does not disclose any further contact by the Department during 1985, with a view to ensuring that the desired object, the use of only heat-treated product, was being or had been achieved.

Given the importance of the use of heat-treated products, the Tribunal is of the opinion that the Department should have continued to pursue the matter during 1985 and if it had, presumably it would have become aware that the BTSB was continuing to produce and to issue unheated Factor IX during that year. Of course it should be said that the BTSB does not appear to have taken the initiative and informed the Department of what was occurring but nonetheless the Tribunal does not think that this can absolve the Department from failing to continue to inquire about and to ascertain the true position during the course of 1985. Because of its lack of further enquiry and of the failure of the BTSB to provide accurate up to date information, it would appear that the Department proceeded on an erroneous assumption that only heat-treated products were being provided by the BTSB as of the beginning of 1985 and this erroneous assumption seems to have continued in the Department right up to and beyond 1991. This also led to incorrect information being given to the Dail in November 1985, in that a reply to a Dail question indicated that only heat-treated blood products had been issued by the BTSB since the 1 January 1985 *(See copy of extract Dail Report 20 November 1985 at Appendix 51.)*

While the Tribunal accepts that the Department did intervene at various times to attempt to ensure the safety of blood products it does not seem to have become involved in attempting to ensure that adequate and accurate information was available to recipients of such products in relation to risks which were inherent in their use. The Tribunal can understand that the Department may well have felt that this was more properly a matter for others and in particular the treating doctors. However, Recommendation Number 83 (8) of the Council of Europe did suggest that member States should take steps to ensure that recipients of blood products were made aware of risks attaching to those products. Also the Department itself received some information in the context of the Council of Europe which indicated that prior to the introduction of HIV testing of blood donations in the United States there were significant risks attaching to concentrates made from plasma collected in that country. In particular it received documentation from the British Department of Health and Social Security in or around September/October 1983 although it would seem this information did not cause any action to be taken by the various committees in the Council of Europe. *(See copy of this document at Appendix 52.)*

The Tribunal believes that in these circumstances the Department should have at least taken some steps or made some inquiries to attempt to ascertain the nature and extent of information that was being given to users of blood products and in particular persons with Haemophilia. Obviously the Department might well have been very reluctant or indeed found it impossible to interfere with or override the advice and information which was being provided by the treating doctors. But the Tribunal does not think that this can mean that it was proper for the Department not to become involved at all in attempting to ascertain what information if any was being made available.

Surrogate Testing

The main evidence given to the Tribunal in regard to the Department's involvement with the BTSB in regard to surrogate testing was that given by Dr. Boothman and Mr. Mulligan.

The Tribunal is of the opinion that it is clear from their evidence that it felt that its function in looking at the request of the 16 July 1987 from the BTSB that ALT testing be introduced in this country was to assess the practical and financial effects of such a development, rather than to attempt to assess the intrinsic scientific and medical benefits of same. The Tribunal is of the opinion that this was a reasonable approach for the Department to adopt given the levels of expertise which were available to it in assessing such matters as the desirability of ALT testing. The detailed history of this matter is reviewed by the Tribunal at Part III, Chapter 5.

The Tribunal cannot see anything in the evidence dealing with the contact between the BTSB and the Department in respect of ALT testing which indicates that the Department attempted to delay or frustrate the introduction of such testing. Rather its approach seems to have been designed to obtain information which it felt was relevant and necessary in assessing what would be the effects of such introduction. It would appear from the evidence to the Tribunal that the Department was unhappy with some aspects of the information which it had been given and pursued discussions and queries with the BTSB between July 1987 and July 1988. The effect of the approach adopted by the Department was that it did not become necessary for it to accept or reject the BTSB proposal that ALT testing should be introduced.

Recompense

The Tribunal heard evidence from a number of persons in relation to the recompense campaign commenced by the Irish Haemophilia Society in 1988 and in relation to the progress and ultimate settlement of litigation commenced by persons with Haemophilia in or around the summer of 1989. The main evidence in regard to this matter given from a Department perspective was that of Mr. Michael Lyons and Mr. John Collins, while the perspective of the Irish Haemophilia Society was given by Ms Rosemary Daly, its administrator. The Tribunal also had the benefit of hearing evidence from Dr. Rory O'Hanlon who held the office of Minister for Health at the relevant time.

From the evidence of these witnesses the Tribunal was given a comprehensive view of the progress of the recompense campaign and of the litigation that was allied to it. Having regard to the stance taken up by the State at the Tribunal in regard to this matter and to the frank acknowledgements made by Dr. O'Hanlon the then Minister, the Tribunal is of the opinion that it is only necessary to set out a brief summary of what occurred.

The Irish Haemophilia Society undertook a campaign to seek recompense for its members, the first step in regard to same being the issue in April 1988 of a submission entitled "*AIDS, Haemophilia and the Government*". *(See copy of the submission at Appendix 53.)* They were seeking the establishment of a trust fund, assistance in the area of life assurance and mortgages and also improved treatment in regard to certain benefits. The claims made by the Society were considered by departmental officials and in particular Mr. Lyons, who was of the view that there were adequate defences available to support a decision not to introduce compensation here. The then Minister Dr. Rory O'Hanlon together with officials of the Department met representatives of the Society on the 10 February 1989 and indicated that he was willing to allocate £50,000 to the Society for counselling purposes. In effect the position taken up by the Minister would appear to have been that he was not willing to make special arrangements for persons with Haemophilia as opposed to other AIDS sufferers, other than the allocation of the £50,000.

Mr. Lyons prepared a memorandum in regard to Haemophilia and HIV/AIDS in March/April 1989 for the purposes of a debate which was to take place in the Dail in regard to the matter in late April 1989. He consulted with the relevant sections within the Department and with the BTSB and the NDAB. Mr. Lyons also had discussions with the Irish Haemophilia Society and the memorandum records that the Society stated that two persons were infected from home produced Factor IX. Mr. Lyons accepted in his evidence that the contents of the memorandum were incomplete and inaccurate in certain respects and in particular in regard to the assertion that heat-treated products only were used from 1985. *(See copy of the memorandum of the 20 April 1989 at Appendix 54.)* A memorandum to Government in April 1989 suggested the establishment of a general commission to review medical related injuries; that all persons with HIV should be treated in a similar manner and that £50,000 should be made available for counselling for persons with Haemophilia.

The Dáil debate did take place on the 25/26 April 1989 and resulted in the passing of a motion proposed by the Labour Party that a trust fund in the sum of £400,000 should be established for persons with Haemophilia. Shortly thereafter an election took place and following the election the newly elected government decided to put in place a trust fund consisting of £1M for the benefit of persons with haemophilia. The trust was established in or around September/October of 1989 with its Chairperson being the Honourable Ms. Justice Carroll, a Judge of the High Court.

Parallel to this litigation had been commenced in the summer/autumn of 1989 by persons with Haemophilia against a number of defendants including the State, the BTSB, the NDAB and a number of treating doctors. That litigation would appear to have progressed slowly through the balance of 1989 and through 1990. In or around December 1990 the issue of a possible settlement of the proceedings arose in part because the Government in the United Kingdom decided to reach a settlement with persons with Haemophilia infected there. Also by then the number of persons with Haemophilia becoming ill and dying was increasing.

Discussions took place with the Irish Haemophilia Society in early 1991 and the Society was asked to make an updated submission. The Government on the 14 May 1991 agreed in principle to the establishment of a fund to a maximum of £7M under the management of the Haemophilia Trust and that the Government contribution to the fund would be a maximum of £4M to be spread over two years. A Memorandum for Government and an Aide Memoire were placed before the Government prior to that meeting. The Aide Memoire had attached to it a pressing cutting from the *Irish Times* dated the 9 June 1986 which contained a report of a meeting at that time where Professor Temperley raised the possibility that four patients with Haemophilia B had become infected with HIV due to the use of BTSB Factor IX.

A meeting took place between representatives of the Irish Haemophilia Society and the Minister for Health and officials of the Department on the 14 June 1991. The Society decided to reject the offer of £7M by way of settlement. At a subsequent meeting of the Government in early July 1991 it was decided to increase the offer of settlement to a sum of £8M to include the legal costs of the claimants and the Society and the various claimants decided to accept this sum. The settlement monies were subsequently divided on an agreed basis between the various claimants.

It would appear from the evidence to the Tribunal that at the time of the settlement the Government believed that the State and the Minister for Health had a good arguable defence to the claims brought against them and that their legal advice was to that effect. These advises were based on the information in the Memorandum of 20 April 1989. The present Minister for Health and Children, Mr. Michael Martin, waived the legal professional privilege attaching to the advices given to the State and the then Minister so that the Tribunal would have the opportunity of seeing and taking into account the nature of those advices. On the other hand, the Tribunal is of the opinion that it is clear from the evidence of Ms. Daly that the persons with Haemophilia who had brought claims found

themselves under significant pressures to settle the litigation. These pressures arose from a number of factors the most important being that a considerable number of the claimants were very ill and a number had died since the beginning of the litigation. Pursuing the claims was taking a heavy toll on the claimants and they had serious concerns about the financial costs involved.

When this matter was dealt with in evidence by the Tribunal the witnesses from the Department of Health and indeed the then-Minister Dr. O'Hanlon, frankly acknowledged that it was clear that the information available to the Minister and the Government in 1989 and 1991 was both incomplete and inaccurate. It was inaccurate in that the briefing documents and memoranda prepared by the Department contained a statement to the effect that only heat-treated concentrates had been used after the 1 January 1985, while in fact the BTSB had continued to distribute non-heat-treated Factor IX until the Autumn of 1985. It was incomplete in that the Department and the Government were unaware that seven persons with Haemophilia B had become infected with HIV as a result of the use of unheated BTSB Factor IX during 1985 and the beginning of 1986.

In the opinion of the Tribunal these deficiencies in the information available to the Department and the Government arose in a number of ways. The Department seems to have been under the impression, and to have assumed, since in or around the beginning of 1985 that following correspondence from Professor Temperley in December 1984, the BTSB had ceased to use non-heat-treated products as of the start of that year. Mr. Lyons in his evidence said that when he was preparing the briefing document for the Minister in or around March/April 1989 he had some contact with the BTSB at that time in regard to the contents of the document and the Board Minutes of the BTSB of the 15 February 1989 indicate that the BTSB intended to send a memorandum to the Department setting out their view of the claim for compensation which was being made by persons with haemophilia.

Notwithstanding the contacts between the BTSB and the Department the full and accurate information did not emerge. The Tribunal believes that this is consistent with an ambivalence by the BTSB in regard to the infection which had been caused by the non-heat-treated product in 1985 and 1986 and a reluctance to acknowledge that that product had been the cause of infection. Indeed this ambivalence is reflected in the approach adopted by the Board to the claim for compensation as recorded in the minutes of its meeting of the 15 February 1989:-

> "*Haemophiliacs:*
> *CEO is concerned about the present campaign by the Irish Haemophilia Society to obtain certain concessions from the Minister for Health. Such campaigns do not help blood donation and indeed can damage it to an extent. The particular concern is that certain statements have been made which would indicate that some of our products were infected, whereas it is quite clear that the source of infection was imported products even though these were ordered and supplied by us to different hospitals. The Minister has been advised fully by us in regard to these events and a detailed memorandum was submitted to his officials. CEO has refrained from issuing any public statement since it is felt that this might exacerbate the situation, but one of our officers has been talking to different people involved, outlining our particular position.*
>
> *The Board considered this matter at length and were advised by Prof. Temperley of the present position. After considerable discussion, it was decided to keep the matter under review, but to ascertain in the meantime the precise level of cover for public liability from the year 1980 to the current year.*"

That full and accurate information did not emerge is also consistent with an ongoing failure by the Department to properly clarify the situation in regard to the use of heat-treated products since the beginning of 1985.

While the Tribunal accepts that the Irish Haemophilia Society had some knowledge that a number of its members may have been infected by reason of the use of BTSB Factor IX and more detailed information may have been available in the documentation discovered in the litigation, nonetheless this does not take away from the fact that the Department and the Government proceeded on the basis of erroneous information both in 1989 and in 1991. In his evidence Dr. O'Hanlon acknowledged that if the true position had been known to the Government it might have influenced or changed their view in regard to what should be done. However, the Tribunal is of the opinion that it is unnecessary for it to make any further comments in regard to the matter since the Tribunal is aware that the present Minister for Health and Children, Mr. Michael Martin has reached agreement with the Irish Haemophilia Society in regard to the payment of further compensation to persons with haemophilia who have been infected with HIV. These arrangements are contained in the Hepatitis C Compensation Tribunal (Amendment) Act 2002.

The Role of the Minister for Health

The Tribunal had the advantage of hearing evidence from two persons who held the office of Minister for Health during the relevant periods, Mr. Barry Desmond and Dr. Rory O'Hanlon. Mr. Desmond held the office in the period from December 1982 until February 1987and Dr. O'Hanlon from March 1987 until November 1991.

The Tribunal is satisfied from Mr. Desmond's evidence that he had almost no direct input or involvement in regard to the formulation or implementation of the Department's policy in respect of blood products during his term in office. Having regard to the range of duties performed by the Minister for Health at the time, indeed from December 1982 until January 1986 Mr. Desmond had responsibility not just for health but also for social welfare, the Tribunal does not think it would be reasonable to expect the then-Minister to have had a greater involvement in what was then just one aspect of a very wide portfolio of responsibilities. Mr. Desmond did unintentionally give inaccurate and misleading information to Dáil Éireann in November 1985 in response to a Dáil query but he was simply putting on the record of the House information supplied to him by his civil servants. The Tribunal does not believe that any blame can be placed on him in regard to the inaccuracy of the information.

Dr. O'Hanlon's main involvement was in regard to the Department and Government's reaction to the Irish Haemophilia Society's recompense campaign during 1989 and 1991. He was responsible at a political level for attempting to form a response to that campaign and to the litigation which was commenced in the summer/autumn of 1989. The Tribunal is of the opinion that it is clear that in attempting to formulate that response Dr. O'Hanlon was acting upon incomplete and unsatisfactory information but the Tribunal does not believe that he can in any way be blamed for this. Likewise while it would appear that in April 1989 he gave inaccurate information to Dáil Éireann in the context of the debate in respect of the Labour Party motion again the Tribunal is satisfied that he was doing no more than placing on the record of the House information which was given to him by officials in the Department. It would not be fair or correct to place any blame on him in respect of the inaccuracy of that information.

Part VI

Recommendations

Part VI

Recommendations

The events which gave rise to the establishment of this Tribunal took place many years ago. It follows that the vast bulk of the evidence which was given to the Tribunal was historic in nature. Some limited evidence was given by Dr. Owen Smith, Professor Shaun McCann and Dr. Fiona Mulcahy in regard to the present arrangements for the treatment of persons with haemophilia. However, the main focus of the Tribunal was the past rather than the present.

It is clear to the Tribunal that great changes have taken place in personnel, facilities and procedures since the occurrence of the events which were investigated by the Tribunal. Equally, there have been very considerable advances in medical and scientific knowledge in regard to the nature and treatment of HIV and hepatitis infection since the early 1980s. The regulatory arrangements have also changed and have become more organised on a European Community basis.

Given the essential historical nature of its investigation, the Tribunal is reluctant to make detailed recommendations in regard to the operation of the Blood Transfusion Service or the arrangements for the treatment and care of persons with haemophilia at the present time. Notwithstanding such reluctance, the Tribunal believes that there are a number of matters in respect of which it can usefully make recommendations and these are as follows:-

1 The blood products supplied to persons with haemophilia should be of the highest standard and of the safest nature that are available. The Tribunal believes that this is the situation at present but this must continue to be the case.

2 A Co-ordinating Committee in regard to the treatment and care of persons with haemophilia should be established with representatives from the various different organisations and interest groups in relation to haemophilia care. The Tribunal does not believe that it is appropriate for it to set out a detailed structure and composition of such a committee, rather this should be a subject of discussion and agreement

between the various interested parties and the Minister for Health and Children. Its remit should include all aspects of the treatment and care of persons with haemophilia including choice of blood products to be given to such persons. The Tribunal is of the view that it is essential that this Committee be properly resourced and have adequate personnel and office facilities available to it. Consideration should be given to whether it would be desirable to have the Committee established pursuant to Statute to ensure its efficient and effective operation.

3 There should be greater co-operation and exchange of information among the various doctors who treat and care for persons with haemophilia. The Tribunal formed the impression that co-operation and exchange of information between the National Haemophilia Treatment Centre and Regional Centres and Hospitals caring for persons with haemophilia was and is somewhat haphazard. There should be a meeting at least once a year of doctors treating persons with haemophilia at which a doctor or doctors from the National Haemophilia Treatment Centre and each Regional Centre or Hospital where haemophilia care is provided should attend. This should hopefully ensure better co-ordination and more efficient exchange of information.

4 A sufficient number of Consultant Haematologists should be appointed to posts throughout the country to provide adequately for persons with haemophilia and others who require haematology treatment. The Tribunal is satisfied that until recently the number of Consultant Haematology posts was grossly inadequate. It heard evidence of recent efforts to improve the situation. It is essential these should be pursued to a successful conclusion.

5 Medical records should be kept and maintained in a more satisfactory manner. During the course of its work the Tribunal was struck by the unsatisfactory and incomplete nature of the medical records which were available in regard to particular patients. Of course, this may have been caused to some degree by the passage of time, but nonetheless record keeping seems to have been uneven and incomplete. It may well be that the greater use of computer records has already brought about improvements in this area.

6 Complete and accurate statistical records should be maintained by the National Haemophilia Treatment Centre in regard to the level and type of infection experienced by persons with haemophilia in this country. Again the Tribunal found it difficult, despite the best efforts of the Virus Reference Laboratory, to obtain a full and complete picture of the true level of infection of persons with haemophilia, in particular in regard to the level of infection with hepatitis C. It seems to the Tribunal that such national records should be maintained by the National Haemophilia Treatment Centre and should be readily available as may be required.

7 Doctors should ensure that test results in relation to patients are given to them as soon as such results become available, unless there is a compelling medical reason to the contrary. Also if such results are such as to be likely to cause distress and upset to the patient he or she should be referred on to the appropriate agency in the hospital or unit for appropriate advice and counselling. A recurring theme in the Tribunal was the upset and distress which can be caused by delay in obtaining such results and by the absence of appropriate counselling and further advice.

8 The Irish Blood Transfusion Service should establish protocols to ensure that if in the future new tests become available for infective agents in blood or blood products, a

positive result of any such test is communicated to the relevant donor as soon as possible and he or she is referred for appropriate counselling and further advice. Such protocols should also ensure that the necessary look back procedures are carried out arising from a positive test result in regard to such an infective agent.

The Tribunal has considered the submission made to it that it should forward a copy of its Report to the Director of Public Prosecutions. It is not the function of a Tribunal of Inquiry to decide issues of criminal or civil liability. The Tribunal is of the view that it is not appropriate in these circumstances to send a copy of the Report to the Director.

The Tribunal is aware that since the completion of its public hearings the Minister for Health and Children has commissioned and obtained a report from Mr. Paul Gardiner SC in regard to the possibility and viability of the holding of a further Inquiry into the role of the international drug companies in relation to the infection of persons with haemophilia in this country. In these circumstances, the Tribunal does not believe that it would be appropriate for it to make any comment in relation to the possibility of a future Tribunal of Inquiry since the Minister has sought and obtained a detailed report in regard to that very question.

Further, the Tribunal is aware that the Minister for Health and Children and the Irish Haemophilia Society have reached agreement in regard to the payment of compensation to persons with haemophilia who were infected with HIV. The arrangements for the payment of such compensation are contained in the Hepatitis C Compensation Tribunal (Amendment) Act 2002. The Tribunal, therefore, believes that it is not necessary or appropriate for it to make any recommendation in regard to the question of compensation for such persons.