

SMALLER HAEMOPHILIA CENTRES PRESENTATION

SHEFFIELD CHILDREN'S HOSPITAL

The Centre

1. During the 1970s to 1990s the Sheffield Children's Hospital ("SCH") acted as the paediatric wing of the Haemophilia Reference Centre for patients in the North Trent Region.¹ The SCH was based at Weston Bank, Sheffield. Care was provided to those aged 16 and under.

The Directors

2. Prior to 1975 the consultant hematologist at the SCH was Dr Jeremy Guyer. However, his principal interest was leukaemia so the responsibility of paediatric patients with bleeding disorders was primarily that of Professor Blackburn; the head of adult services at the Sheffield Hallamshire Hospital ("HH").²
3. From 1975 to 1995 Dr Lilleyman was the consultant haematologist at the SCH. He was initially partnered with a senior colleague, John Black, from 1975 to 1977 until he gained enough experience in paediatric matters.³ Dr Lilleyman was a member of UKHCDO over the same period. Dr Lilleyman has provided two witness statements to the Inquiry.⁴

Other staff members

4. R. R. Gordon, consultant paediatrician, treated paediatric patients in 1975 at the SCH.⁵ In 1980 Dr Salmon was a member of the SCH's haematology department.⁶

¹ In 1968 Sheffield, alongside Oxford and Manchester, was designated a Special Treatment Centre where special skills were available to patients requiring major surgery: DHSC0002179_070. Professor Eddie Blackburn was the Director with responsibility for adult haemophilia services until 1981. He was also the chair of the UKHCDO from 1969 to 1979. Professor Eric Preston took over as Director following Professor Blackburn's retirement.

² §5.5 of WITN5095001

³ §7.1 of WITN5095001

⁴ WITN5095001 and WITN5095002

⁵ See for example: TREL0000237_077

⁶ NHBT0031802_001

Dr P J Wyld represented Dr Lilleyman at the twelfth UKHCDO meeting on 9 October 1981.⁷

5. In around 1985 the SCH gained a dedicated haemophilia nurse, Ms Vicky Vidler.⁸ Ms Vidler participated in a broad range of activities, including running events for the Haemophilia Society and she was involved with Haemophilia Alliance.⁹

Facilities and staffing at the Centre in 1970s and 1980s

6. Dr Lilleyman has described that in the early 1970s inpatient adult haemophilia treatment took place at the old Sheffield Royal Infirmary (“SRI”). There were four haematology trainees at different stages of training under the direction of Professor Blackburn. Dr Lilleyman describes that they ‘*all took turns*’ to provide 24-hour cover of patients.¹⁰ The on-call trainee haematologist saw haemophilia patients in both the Hallamshire hospitals, i.e. the adult and the paediatric patients at the SCH.¹¹ From 1979 adult haemophilia care took place at the HH.
7. Out of hours cover for paediatric patients was provided by four senior registrar-grade rotating trainees in haematology at the HH, each being seconded to the SCH full-time for six months during their training.¹² Dr Lilleyman describes the staffing arrangements in the following terms:

*‘One of the four on call would take calls from the on-site junior paediatrician, and often would pop across to the children’s hospital to assess and advise on management. If consultant advice was needed, I was always on call unless I was away in which case I would ask one of my senior colleagues at the Hallamshire to provide cover. I lived within walking distance of the Children’s Hospital.’*¹³

8. The SCH was around 200 yards from the HH. Dr Lilleyman has told the Inquiry that in light of this modest distance ‘*we all met at least once a week for Journal reviews and discussion of clinical problems.*’¹⁴

⁷ HCDO0000248_002

⁸ §7.4 of WITN5095001

⁹ See for example, HSOC0016364 and HCDO0000013_043

¹⁰ Not all of these patients had bleeding disorders.

¹¹ §5.5 of WITN5095001

¹² §7.3 of WITN5095001

¹³ §7.3 of WITN5095001

¹⁴ §7.2 of WITN5095001

The Blood Transfusion Service

9. The Regional Blood Transfusion Centre opened in 1972¹⁵ and was located at Longley Lane, Sheffield adjacent to the grounds of the Northern General Hospital.¹⁶ Dr Wagstaff was the Director during this period.
10. There was a close relationship between the local blood transfusion service and the SCH. Dr Lilleyman has described to the Inquiry that Dr Wagstaff *'used to do a formal clinical session with me once a week, when he came to help with the leukaemia clinic. He was a useful contact for the supply of blood products, in particular cryoprecipitate.'*¹⁷
11. Dr Wagstaff, along with Dr Lilleyman, Dr Preston and Professor Blackburn, attended a joint meeting of the Regional Blood Transfusions Directors and Haemophilia Centre Directors of the Yorkshire and Trent Supra-Region on 21 January 1977.¹⁸ At this meeting there was a discussion about supply of factor VIII and the fact that commercial products had to be purchased because of a shortfall: an estimated 40 million units of factor VIII were needed nationally and only 15 million were available from the Lister Institute at Elstree.¹⁹ Dr Wagstaff, along with Dr Tovey, was asked to produce a paper so that this issue could be raised with the Central Committee of the Blood Transfusion Service.²⁰
12. At this meeting it was also noted that the Trent Region, as well as the Yorkshire region, was *'considerably under-financed compared with some other Regions and it was suggested that every opportunity should be taken to exert pressure on the DHSS with a view to obtaining an increase in resources to permit shortcomings to be rectified.'*²¹

¹⁵ NHBT0015832_001

¹⁶ CBLA0000396

¹⁷ §8.1 of WITN5095001

¹⁸ OXUH0000500_003

¹⁹ OXUH0000500_003

²⁰ See letter written by Professor Blackburn, on 13 December 1978, to the DHSS on the same theme of concerns about the supply of factor VIII and IX: DHSC0002191_014

²¹ OXUH0000500_003

13. In 1982 a new hepatitis laboratory was established in a new, purpose-built building.²² As at 1989:

*'All the blood and cellular blood products used in the hospitals in the Trent Region are supplied by the National Blood Transfusion Service in Sheffield. Plasma collected by the NBTS in Sheffield is sent to the Blood Products Laboratory at Elstree for the manufacture of NHS blood products. All donations are collected according to nationally agreed guidelines and tested in accordance with advice supplied by the UK Advisory Committee on Transfusion Transmitted Diseases.'*²³

Treatment policies and blood product usage

14. Dr Lilleyman has described to the Inquiry that there were two sources of obtaining blood products at the SCH. The first was direct from the UK National Blood Transfusion Service for fresh plasma and/or cryoprecipitate at the request of a clinician for a specific patient. These products were delivered to the haematology department and stored in the blood fridges.²⁴ The second method was via the SCH's pharmacy, which would order factor VIII concentrate via the HH's pharmacy. The SCH's pharmacy would then process the delivery notes and invoices, record the batch numbers and deliver the product to the haematology department to be stored in the blood fridges.²⁵

15. Dr Lilleyman has told the Inquiry that the selection and purchase of blood products was made by the consultant haematologists. He describes the '*regular informal meetings*' between consultants at the HH and the SCH as well as the wider discussions at the UKHCDO meetings.²⁶ Dr Lilleyman attended the 22 October 1976 meeting of Blood Transfusion Directors and Haemophilia Reference Centre Directors organised by Professor Blackburn.²⁷ The purpose of the meeting was to discuss the likely needs of cryoprecipitate and factor VIII.

²² NHBT0106118

²³ DHSC0020857_004

²⁴ §11.1.1 of WITN5095001

²⁵ §11.1.2 of WITN5095001

²⁶ §11.3 of WITN5095001

²⁷ CBLA0000473

16. Dr Lilleyman states that:

‘My personal involvement in deciding on which factor VIII concentrates to purchase was frequently to reiterate that for children who were small and required less Factor VIII per dose than adults, cryoprecipitate had many advantages and for most admissions for joint bleeds, bumps and scrapes, heavy bruises and minor surgery, was to be preferred since it only exposed patients to a very small number of UK donors and reduced the risk of viral transmission that was becoming a recognised problem with large pool fractionation processing.’²⁸

17. Dr Lilleyman describes cryoprecipitate as ‘the treatment of choice’ at the SCH *‘for all but the most serious bleeds or surgery particularly after the problems of viral transmission of Non A Non B hepatitis started to appear.’²⁹* He further states:

‘Antifibrinolytic agents such as tranexamic acid were useful for preventing clots from breaking down and were employed following surgery or dental extractions to reduce the FVIII required. For mild haemophiliacs and patients with von Willebrand’s Disease Desmopressin (DDAVP) was also used since it can raise the factor VIII concentration in those whose FVIII production was not zero.’³⁰

18. The Inquiry has received evidence from a mild haemophilia A patient, with a clotting factor between 7 and 13%, who received factor VIII at the SCH in 1971 during a hernia operation and in 1978 during a tooth extraction.³¹ He was infected with HCV as a result of one of these contaminated batches of factor VIII. He considers that he was infected by the 1978 administration because he became unwell in the 1980s.³²

19. Despite the focus on cryoprecipitate highlighted by Dr Lilleyman, the available documents demonstrate that some commercial products were used in relation to the treatment of boys from Treloar’s and other schools. For example, in April 1976 Dr Lilleyman issued a headmaster of St Frances school, Lincoln, with Profilate for a haemophiliac child.³³ On 19 September 1979 Dr Lilleyman wrote to

²⁸ §11.6 of WITN5095001

²⁹ §16.1 of WITN5095001

³⁰ §16.2 of WITN5095001

³¹ §4 of WITN0274001. The witness notes that his medical records from SCH have been lost but he has found this information within his records from another hospital, Lincoln.

³² §6 of WITN0274001.

³³ TREL0000237_068

Dr Aronstam of the Treloar's Haemophilia Centre about a child moving onto self-therapy:

*'The material that we use, subject to availability, is the Lister concentrate but we also use commercial concentrates (chiefly Factorate by Armour pharmaceuticals) to make up any shortfalls in supply. We would be happy to take over the provision of such materials for [the child] when he is on holiday.'*³⁴

20. Dr Lilleyman has told the Inquiry that he was not in charge of product selection for Treloar's patients.³⁵

Numbers of patients registered and numbers of patients treated

21. The annual return from 1976 states that there were 23 haemophilia A patients and 8 haemophilia B patients treated in that year.³⁶ The treatments used were cryoprecipitate, NHS factor VIII and IX, Abbott's Profilate, Armour's Factorate, Hyland's Hemofil, Immuno's Kyrobulin and FEIBA. There were no deaths during the year. No patients were noted to be jaundiced during the year.
22. The annual return from 1977 states that there were 21 haemophilia A patients treated that year.³⁷ The haemophilia A patients were treated with cryoprecipitate, NHS factor VIII, Armour's Factorate, Cutters' Koate, Hyland's Hemofil and Immuno's Kryobulin. FEIBA was also used. Five patients with haemophilia B were treated with Oxford factor IX. Two patients with von Willebrand's were treated with cryoprecipitate and Elstree factor VIII.
23. The Inquiry does not have an annual return for 1978.
24. The annual return from 1979 states that there were 23 haemophilia A and five haemophilia B patients treated that year.³⁸ The treatment used was cryoprecipitate, NHS factor VIII and IX, Armour's Factorate and Immuno's Kryobulin. FEIBA was also used. Five patients with haemophilia B were treated with Oxford factor

³⁴ TREL0000090_032

³⁵ See §59.2 of WITN0274001 and the Treloar's section below in this document.

³⁶ HCDO0001113

³⁷ HCDO0001201

³⁸ HCDO0001367

IX. One patient had von Willebrand's disease but needed no blood products. There were no deaths during the year. No patients were noted to be jaundiced.

25. The annual return from 1980 states that there were 20 haemophilia A and four haemophilia B patients treated that year.³⁹ One patient had von Willebrand's disease. The treatment provided was cryoprecipitate, NHS factor VIII and IX, Armour's Factorate and Immuno's Kryobulin.
26. The annual return from 1981 states that there were 20 haemophilia A and four haemophilia B patients treated that year.⁴⁰ There were no patients with von Willebrand's disease. The treatment provided was cryoprecipitate, NHS factor VIII and IX, Armour's Factorate, Immuno's Kryobulin, FFP and FEIBA.
27. The annual return from 1982 states that there were 19 haemophilia A and two haemophilia B patients treated that year.⁴¹ The treatment provided was cryoprecipitate, NHS factor VIII and Autoplex. Three haemophilia B patients received NHS factor IX.
28. The annual return from 1983 states that there were 17 haemophilia A patients and one haemophilia B patient treated that year.⁴² The treatment provided was cryoprecipitate, NHS factor VIII and IX, and Autoplex.
29. The annual return from 1984 states that there were 17 haemophilia A, two haemophilia B and three patients with von Willebrand's disease treated that year.⁴³ The treatment provided was cryoprecipitate, NHS factor VIII and IX, and Autoplex.
30. The annual return from 1985 states that there were 20 haemophilia A patients, two haemophilia B patients and one patient with von Willebrand's disease treated that year.⁴⁴ The treatment provided was cryoprecipitate, NHS factor VIII and IX,

³⁹ HCDO0001465

⁴⁰ HCDO0001566

⁴¹ HCDO0001664

⁴² HCDO0000139_004

⁴³ HCDO0001854

⁴⁴ HCDO0001948

HyateC and Autoplex.

31. The annual return from 1986 states that there were 14 haemophilia A patients, three haemophilia B patients and no patients with von Willebrand's disease treated that year.⁴⁵ The treatment provided was cryoprecipitate, NHS factor VIII and IX, HyateC and Autoplex.

Knowledge of risk of hepatitis and response to risk

32. Clinicians at both the adult and paediatric services at Sheffield had a particular interest in the relationship between blood products and hepatitis. Dr Lilleyman describes this in the following terms:

*'The main point I would make here is that we in Sheffield realised pretty early on that there was a potential problem of virus transfer in blood products used for haemophilia since non-A non-B hepatitis was already recognised as a problem following the observation that abnormal liver function tests were not an infrequent finding in both adults and young boys with severe haemophilia. We published a study from the Children's Hospital about this in 1980. (Mcgrath KM, Lilleyman JS, Triger DR, Underwood JC. Liver disease complicating severe haemophilia in childhood. Archives of Disease in Childhood, 1980, 55, 537-540).'*⁴⁶

33. Dr Lilleyman states that the above study '*reinforced*' the view at SCH that cryoprecipitate was a safer product than factor VIII: '*We therefore used this product in preference to FVIII concentrate for routine treatment for all but major surgery in young boys.*'⁴⁷

34. Dr Hay's paper '*Progressive Liver Disease In Haemophilia: An Understated Problem?*', published in the Lancet on 29 June 1985, was another important piece of research from Sheffield.⁴⁸ This was followed by his 1988 text *Haemophilia Liver Disease: the Sheffield Experience*.⁴⁹

⁴⁵ HCDO0002043

⁴⁶ §17.1 of WITN5095001. See OXUH0001751_003 for the article itself.

⁴⁷ §18.1 of WITN5095001

⁴⁸ PRSE0004229

⁴⁹ HCDO0000661

35. In addition to discussions and research at Sheffield, Dr Lilleyman also attended UKHCDO meetings where hepatitis was discussed. He attended the UKHCDO meeting held on 13 January 1977 where Dr Craske presented his study of hepatitis within haemophiliacs.⁵⁰ Dr Lilleyman, along with Sheffield adult haemophilia clinicians Professor Blackburn and Dr Preston, attended the 20-21 November 1979 UKHCDO meeting where Dr Craske noted that there were various possible causes of hepatitis and suggested that there were two types of non-A non-B hepatitis.⁵¹

36. In light of this knowledge about the relationship between blood products and hepatitis, Sheffield became known for its use of liver biopsies in haemophiliacs. This included in paediatric patients. In March 1979 Dr Lilleyman wrote to a patient's parents setting out the reasons for the suggestion that the patient should have a liver biopsy. The letter stated:

*'Since the introduction of factor VIII concentrates for the treatment of haemophilia it has been noted that quite a few haemophiliacs, both adults and children, have developed abnormalities of their liver function as tested from blood samples. Liver biopsies have recently been performed in some of these patients here in Sheffield and in other centres, and most show evidence of underlying chronic liver disease. The severity of liver disease is quite variable; most show only mild changes which do not require further treatment except observation. However occasional patients do show quite marked liver changes and consideration is then given to further treatment usually with steroids.'*⁵²

37. It was noted that the patient had shown abnormalities of his liver function in blood tests and therefore the clinicians wanted to know the extent of his liver damage by undertaking a liver biopsy. The letter set out the procedure and asked for the parents to give their consent.

Knowledge of risk of AIDS and response to risk

38. Dr Lilleyman describes his knowledge of the risk of AIDS in the following terms:

'My first inkling of HIV was at a childhood leukaemia meeting in London in 1981,

⁵⁰ PRSE0002268

⁵¹ BPLL0007384

⁵² ULHT0000001

where we learned of a rare lung infection called Pneumocystis carinii pneumonia (PCP) being found in 5 young, previously healthy gay men in Los Angeles. This was of interest because children on chemotherapy for acute leukaemia are also susceptible to this rare condition because of immunosuppression. By the end of 1981 there were 270 reported cases of severe immunodeficiency among gay men in the USA, and 121 of them had died. In June of 1982, the disease was reported in American haemophiliacs. In September, the CDC used the term AIDS (acquired immune deficiency syndrome) to describe the disease.

*I first became aware of the association between AIDS and blood products around the time when the matter was raised at the UKHCDO in September of 1982. (See document CBLA0001619). It states there in the minutes that 'It appeared that there was a remote possibility that commercial blood products were involved' after the report of the first three haemophiliacs to be diagnosed with the Acquired Immune Deficiency Syndrome in California.'*⁵³

39. At this September 1982 meeting Dr Craske made a request for Directors to request any cases. Dr Lilleyman has told the Inquiry that he never made such a report.⁵⁴
40. Dr Lilleyman attended the 8 March 1983 meeting of the Haemostasis Club where Professor Luscher discussed the issue of AIDS.⁵⁵ At that meeting Dr Lilleyman was noted to be looking at TE and T8 cell ratios in child haemophiliacs.
41. On 4 October 1983 Dr Lilleyman attended the British Society for Haematology meeting held in London along with a number of haemophilia clinicians.⁵⁶ The decision was made for the formation of a Working Party in order to '*investigate the problems of AIDS in relation to the practice of Haematology in the Diagnostic Laboratory.*' The composition of the committee included Dr Rizza and Professor Bloom along with Dr Pinching, immunologist, and Dr Jeffries, virology, as well as S. M Lewis, N.K Shinton and I.D. Fraser. It was noted that this Working Party had already met.
42. Dr Lilleyman also attended the fourteenth meeting of the UKHCDO at Oxford on 17 October 1983 where there was a discussion about AIDS and commercial concentrates.⁵⁷

⁵³ §28.1 of WITN5095001

⁵⁴ §33.1 of WITN5095001

⁵⁵ PARA0000013

⁵⁶ BSHA0000005_049

⁵⁷ PRSE0004440

Arrangements for testing patients for HTLV III and informing them of their diagnosis

43. Dr Lilleyman's evidence to the Inquiry on testing for HTLV III / HIV states that:

*'I think we did not rush to mass HIV testing for our patients who had only received cryoprecipitate or NHS Factor VIII. I cannot remember that we did. For any that wanted reassurance we would have agreed and discussed with the parents what the process involved and what a positive result could mean. But I cannot recall any positive results in our haemophiliac boys up to the time I left (1995).'*⁵⁸

44. A letter from Professor Preston to Dr Lilleyman, dated on 27 June 1985, enclosed the results of children from SCH. The blood samples had been sent in May 1985. The first batch of six all tested negative for HTLV III.⁵⁹ The second batch of six contained five negative and one positive result.⁶⁰

45. Dr Lilleyman attended the Sheffield Aids Forum meeting held on 15 June 1987. However, there was no documented discussion in relation to paediatric issues.⁶¹

Numbers infected with HIV

46. Dr Lilleyman's evidence to the Inquiry is that:

*'We were very keen to avoid using the American Factor VIII once AIDS appeared in California, and I honestly do not recollect any boys with haemophilia under our care developing this condition up to the time I left the Hospital in 1995.'*⁶²

47. That recollection is consistent with the data the Inquiry has received from the UKHCDO.⁶³ It is, however, not consistent with the letter from Professor Preston dated 27 June 1985 (see paragraph 44 above) which suggests one positive result for HTLV III.⁶⁴

⁵⁸ §47.1 of WITN5095001

⁵⁹ Page 4, RHAL0000485

⁶⁰ Page 8, RHAL0000485. But see below, in relation to other evidence of HIV infections.

⁶¹ RHAL0000982_047

⁶² §40.1 of WITN5095001

⁶³ INQY0000250

⁶⁴ RHAL0000485

Testing for Hepatitis C

48. Dr Lilleyman is unable to recall precisely when the Centre began testing for HCV.⁶⁵ The evidence from infected patients and their families who were treated at SCH as children (unsurprisingly) shows that their diagnoses with HCV commonly occurred at other, adult centres due to their age in the early 1990s.

Numbers infected with HCV

49. The Inquiry does not have a determinative figure for the number of children infected with HCV at SCH.

50. A 1997 document pertaining to the HCV litigation shows 10 cases where the defendant to the litigation was the Sheffield Children's Hospital NHS Trust.⁶⁶ Of the 10 patients, one of these claimants appears to have been infected following a transfusion but it is not clear if that patient had a bleeding disorder. This document suggests a series of late infections with HCV:⁶⁷ one patient is listed as being infected with HCV following administration of factor VIII in December 1991,⁶⁸ another with infected factor IX in September 1991,⁶⁹ another with infected factor VIII in September 1991,⁷⁰ another with infected factor IX in February 1991⁷¹ and another with infected factor IX in September 1990.⁷²

51. On 22 February 1991 Ms Spooner, research assistant to the UKHCDO, wrote to Dr Heptonstall at Colindale about a 1990 report from SCH about a case of HCV transmission asking her to look into this.⁷³

⁶⁵ §54.1 of WITN5095001

⁶⁶ DHSC0004606_039

⁶⁷ In the column headed '*how and when contracted (if known)*'

⁶⁸ See page 14 of DHSC0004606_039

⁶⁹ See page 4 of DHSC0004606_039

⁷⁰ See page 4 of DHSC0004606_039

⁷¹ See page 4 of DHSC0004606_039

⁷² See page 7 of DHSC0004606_039

⁷³ HCDO0000119_081

Treloar's School

52. Dr Lilleyman has described the relationship between the SCH and Treloar's school in the following terms:

*'Care of haemophiliac boys at Treloar's was shared as it was necessary to look after them in Sheffield when they came home for holidays. It would be necessary to receive a summary of events and treatments from Treloar's, and then to send one in return when the holidays were over.'*⁷⁴

53. Correspondence from 1975 shows Drs Guyer and Lilleyman recommending Treloar's school for a haemophiliac child.⁷⁵ There are examples of Dr Lilleyman writing to the Treloar's Haemophilia Centre with patient information. For example, on 2 September 1975 he wrote to Dr Kirk of the Treloar's Haemophilia Centre about a child's inhibitor status and noting that *'he has neither Australian Antigen nor Antibody.'*⁷⁶ In January 1976 he provided an update to Dr Kirk about the treatment given to various boys in the Christmas holidays.⁷⁷

54. In his evidence to the Inquiry Dr Lilleyman describes the relationship between SCH and Treloar's in the following terms:

'During my time we did have a few haemophiliac boys attend the Lord Mayor Treloar's School in Alton, Hampshire. I cannot remember how many, but it would be very few and only those whose pattern of morbidity warranted living away from home where education could continue uninterrupted by frequent trips to hospital.

We would have had no control over their choice of therapeutic products. I think some of the original referrals from Sheffield were made by my predecessor, Dr Jeremy Guyer (now sadly deceased) as consultant haematologist before me. By 1980 I was becoming concerned about hepatitis and since I had no control on which products were used with Treloar's boys, they were more exposed to American factor VIII (Profilate). In 1976 this would not have been virally inactivated. Nevertheless, I see that I also used this product in a serious problem with one of their boys while at home on holiday, where there was a life-threatening head injury (see document TREL0000191_002).

The concept of a special residential school for boys with haemophilia was a brave and exciting experiment. It gave the pupils a greater chance of not missing school

⁷⁴ §65.1 of WITN5095001

⁷⁵ See for example: TREL0000237_072

⁷⁶ TREL0000094_024

⁷⁷ TREL0000191_005

*because of hospital trips and to mingle with peers who had similar problems.*⁷⁸

55. Dr Lilleyman was also involved in a study run by Dr Kirk at Treloar's in September 1975. He has described his role in this study in the following terms:

*'The proposed Treloar hepatitis study was an attempt to look at the incidence of hepatitis in a cohort of boys who were restricted to one type of Factor VIII over a period of time to see whether the incidence and type of hepatitis differed from that of other cohorts restricted to other Factor VIII sources – that is different Factor VIII concentrates. My contribution was an offer to restrict our boys at home in Sheffield to cryoprecipitate for treatment with the proviso that we would obviously have to break protocol and give a concentrated form of Factor VIII for serious or life-threatening bleeds.'*⁷⁹

56. Dr Lilleyman has told the Inquiry that *'by 1980 I was increasingly concerned about potential exposure to hepatitis viruses with large pool Factor VII concentrate, particularly American products, because of the demographics of their paid plasma donors. Treloar used to use more of these products than I did in Sheffield.'*⁸⁰

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(AMENDED)

⁷⁸ §59 of WITN5095001

⁷⁹ §64.1 of WITN5095001

⁸⁰ §60.1 of WITN5095001