Tuesday, 30 March 2021

(10.00 am)

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: Good morning, sir. Today and tomorrow we will be looking at the [Belfast] Haemophilia Centre. As with all presentations on haemophilia centres, this isn't intended to be the last word on the Belfast Haemophilia Centre. Rather, the intention is to explain and put into the public domain what contemporaneous documents that have been received and examined so far by the Inquiry explain or reveal or suggest about the facilities, policies and practices at the centre.

I'll also highlight at various stages aspects of what witness testimony has told the Inquiry. You, sir, will recall the very powerful oral evidence heard in Belfast from individuals who had been infected or whose family members had been infected.

SIR BRIAN LANGSTAFF: I do indeed, yes.

MS RICHARDS: In addition to that testimony, the Inquiry has of course received a number of other statements, again from those infected or from their families, all of which have been read and considered by the Inquiry before today and I'll refer to some of the themes that emerge from those statements.

In terms of clinical evidence, we have several witness statements from Dr Elizabeth Mayne who, as you know, sir, will not be giving oral evidence to the Inquiry but we have her written testimony, as well as a number of earlier reports that she produced in the course of the late 1980s or early 1990s and I'll be referring to those in some detail in the course of today and tomorrow.

We have a statement from Professor Bridges, a statement from Dr McNulty and a statement from Dr Anderson, and we are also seeking statements from other clinicians, and you, sir, will decide whether to hear any oral evidence from any of those clinicians once you've seen such further evidence, such further statements, as the Inquiry is able to obtain.

We will be hearing on Thursday from a more recent perspective from Dr Benson, the current Haemophilia Centre Director, and you will recall in relation to the Cardiff Haemophilia Centre we heard from Professor Peter Collins, who was in a similar position. Obviously, he cannot deal with the events of earlier decades and we won't be asking him to do so.

So that's by way of introduction. I'm going to start with an overview of the centre, its facilities

and staffing and patient numbers and will then turn to look in more detail at the products that were used and the treatment policies gleaned from a number of different sources.

The Belfast centre was established by Professor Nelson in 1958. It was located, at that stage, within the hospital's Clinical Pathology Department. Soumik, if we go RHSC0000067_002, please. This is a report from March 1988 called "A profile of the management of haemophilia in Northern Ireland". I'll come back to it at various stages. It's authored by Dr Mayne and it appears it was a document addressed to the health authorities in Northern Ireland exploring issues about funding of haemophilia care in Northern Ireland.

For present purposes, if we go to the second page, we can pick up some information about numbers in the 1950s. Top of the page there's a table. 1958, 44 patients with haemophilia A and one with haemophilia B. Dr Mayne tells us, in the sentence below the table:

"In the 1950s no true haemostatic treatment was available. Bleeding episodes were managed with infusions of fresh frozen plasma."

That's a snapshot of the numbers in 1958. The

available documentary and witness statement evidence suggests that that remained the number of patients known to the centre during the course of the 1960s.

There was no -- there were no dedicated staff or in-patient facility for haemophilia care during that period and no specific physical location for the centre, according to the documents that we have.

That's in terms of adult haemophilia care. In terms of paediatric care, children with bleeding disorders were cared for at the children's hospital, and Professor Bridges, who was the paediatrician in charge there until around 1979, has estimated in his statement that there were approximately ten child patients with bleeding disorders prior to 1979.

We can take that document down, thank you, Soumik.

We know from the various documents and statements that we have that the numbers of patients grew during the 1970s and 1980s and the staff team also grew so that from around the 1983 there was a part-time physiotherapist, a nurse, a secretary and some social work input and I'll look in a few moments at a document which has more detail of staffing in the 80s.

The haemophilia centre in Belfast was not

a reference centre for a number of years, and if we go to HCDO0000405, please, you'll see these are the minutes of a meeting of Haemophilia Reference Centre Directors, 26 February 1980, and if we go to page 6, under the heading "Haemophilia Reference Centres in Scotland and Northern Ireland", we will see the question of the status of the centre being raised:

"Professor Blackburn said that patients had raised with him the question of Haemophilia Reference Centres in Scotland and Northern Ireland. There were at present no official Reference Centres in either Scotland or Northern Ireland and some patients were very worried about this."

Then there's reference to a DHSS leaflet in the 70s from Professor Bloom and reference to what was said to have been agreed in relation to Scotland. Picking it up a few lines down, we then come to Northern Ireland:

"Northern Ireland was included in the Oxford supra-region and Belfast was the only Haemophilia Centre in Northern Ireland. After some discussion, it was suggested that Belfast should be regarded as the Reference Centre for Northern Ireland and that Dr Rizza should write to Dr Mayne asking if she would approve of this idea and if she would like to attend

future Reference Centre Directors Meetings. This was agreed. It was also agreed that the Department of Health should be asked to put Edinburgh and Glasgow as the Scottish Reference Centres and Belfast as the Northern Ireland Reference Centre, in the list of UK Haemophilia Centres when this was reprinted."

We can take that down. So we can see the agreement there that Belfast should become a reference centre. One of the significant consequences of that was that from the point at which it was recognised as a reference centre, Dr Mayne was, as it were, eligible to attend the Reference Centre Directors meetings and would thus be privy to the information that was discussed and disseminated at those meetings from the early 1980s onwards.

We don't need to go to the document but the minutes of a UKHCDO meeting from September 1981 notes that a Dr Thornton in the Northern Ireland Office of the DHSS had written to Professor Bloom confirming that the centre at the Royal Victoria Hospital had been designated as a haemophilia reference centre.

As that document recorded, there was only one recognised haemophilia centre in Northern Ireland and it served patients drawn from all over Northern Ireland. There was a reciprocal arrangement with

a centre in Dublin which enabled some patients from the Republic of Ireland to attend Belfast for treatment if that was more convenient and Belfast patients to receive treatment in southern centres when in the Republic.

We can see that if we go to HSOC0022947. You'll see this is a copy of The Haemophilia Society's Bulletin. There's a publication for 1989.

Soumik, if we go to page 9, and if we look at the heading, "The centre", so it's the second one, that's it, the first paragraph:

"The Northern Ireland Haemophilia Centre serves a population of 1.5 million. Its patients are drawn from all over the province and a reciprocal arrangement is operated between the Centres in Belfast and Dublin. This enables a small number of families from the Irish Republic to attend Belfast for convenience of travel, otherwise they would need to make a long and tedious journey to Dublin. In return, patients from the Northern Ireland Centre who go on holiday in the Republic of Ireland are treated free of charge at appropriate southern Centres."

We can see a question that arose about how that should be dealt with in financial terms from an exchange of correspondence between Dr Mayne and

Professor Temperley from Dublin.

Soumik, if we could go to BHCT0000623, please. We can see that in September 1984 Dr Mayne was writing to Professor Temperley about a particular patient. If we go down so we can see the text of the letter, and in the second paragraph -- it's a patient who had attended the centre in Belfast for treatment it would appear whilst on holiday in the north. In the second paragraph she says this:

"I enclose a total of the amount of factor VIII that he has received while in the North and I suppose the simplest method of payment would be for your Centre to send our Centre the same amount in kind rather than involve our respective finance officers."

So it would appear that Dr Mayne contemplated that concentrate from Dublin would be sent to Belfast as a payment in kind rather than some form of financial charging arrangement. Before we look -- sorry, next paragraph she says:

"Perhaps when we next meet we might discuss this type of problem, as of course, it will arise from time to time."

If we just look at the last paragraph of that letter you will see reference to the "Blood Club" and she says:

"... I am sorry I will not be able to be at the Blood Club later this month, as I was already committed to a haemostasis meeting in London."

This appears to have been some kind of a gathering for Northern Irish and Irish clinicians to discuss matters relevant to haematology. It may have overlapped with or fulfilled a similar function to that which we've described as -- that which we've heard described taking place under the auspices of Professor Savidge. It may be the same, it may be something different or it may be something that performance a similar function; we've not got any further information at present.

Turning to the issue raised with Professor Temperley, we can see his reply at BHCT0000622. He says in his response of 10 October 1984:

"I think it would be rather silly to charge each other for treatment of [haemophilia] during short visits North or South of the border. This should in the ordinary course of events balance out. On the other hand, I agree when prolonged treatment is envisaged for a citizen of the Republic in Northern Ireland we should make suitable compensation as we discussed? Perhaps you might give the question

of short visits more thought."

I won't go to Dr Milne's subsequent letter but she agrees there's no need to charge for short visits. Whether there transpired any exchanges of concentrate in kind, as it were, for longer visits, the documentation doesn't tell us one way or another.

Soumik, can we go back to The Bulletin article, so HSOC22947 -- sorry, HSOC0022947, my apologies.

If we go to page 8, we can pick up, in the same article, a little more information about the staffing arrangements. This is by the 1980s, late 1980s. We look at the heading "Staff", we can see this is the position by 1989:

"The permanent medical staff of the Centre comprises three Consultant Haematologists: one the author [that's Dr Mayne], who has overall responsibility for province-wide haemophilic care, aided by the Professor of Haematology, Professor Bridges, and Dr Dempsey, who carries responsibility for all paediatric activity in the Centre. Sister Catherine Farrell is the Sister-in-Charge of the outpatient facilities; she is on the committee of the Haemophilia Nurses' Association and is the present membership secretary of that organisation. She is ably supported by Staff Nurse Colette McAfee. In the

ward, Sister Mary McGuigan keeps a close eye on haemophilia inpatient problems. Both are members of the Haemophilia Nurses' Association, as are many other ward nurses, making a total of seven members at the present time."

So that's nursing staff.

In terms of physiotherapy staff, we learn in the next paragraph that in 1983 a part-time haemophilic physiotherapist was appointed initially, and for a further number of years she was funded by The Haemophilia Society.

"Mrs Lynne Crockard has proven her worth time and time again."

Then if we go to the next paragraph we find details of dental care, a dentist there identified who has provided consultant dental care and runs a primary care clinic devoted to the management of patients with bleeding disorders.

There's then reference to the various laboratory staff, the Senior Chief MLSO, Mr Carville, who is said to have been in charge of blood product provision since the late 1960s, when cryoprecipitate was prepared locally in the department, and then Dr Mayne continues:

"After the transfer of its manufacture to the

Northern Ireland Blood Transfusion Service, he became in some respects what might be described as 'the keeper of the privy purse'. He has never allowed the stocks of blood products to run dry and he and his staff in the hospital Blood Bank are responsible for issuing all the material for home treatment.

"They maintain computerised records of the same and indeed all treatment -- a job important and so necessary for the compilation of the annual returns for Oxford. No Haemophilia Centre can exist without accurate laboratory tests to establish the diagnosis and to maintain monitoring of the effectiveness of the treatment given and the Chief MLSO Terry Ingles, has been in charge of the Coagulation Laboratory for more than 12 years. More recently new additions to the staff have taken place."

So we see reference in the next sentence to there being a permanent secretary for the haemophilia centre and a scientist.

The next paragraph refers to the involvement of a professor of orthopaedic surgery. Then in the last paragraph, under the heading "Staff", Dr Mayne picks up on the question of social work, and says this:

"In the past the Northern Ireland Haemophilia Centre was not overwhelmed by help or interest in

terms of input from social workers. Some came and went, some showed interest and occasionally when an excellent one was appointed, she had to leave, having gained promotion. Others declared that the problems of haemophilic patients were 'insoluble'. However, the picture during the past year has changed since the appointment of Miss Geraldine Kerr, the social worker is now closely involved and is rapidly making her mark in the Centre and amongst the patients."

So that's the picture in terms of staffing by 1989. Obviously at earlier stages far fewer staff members.

If we could then turn to BHCT0000503, you will see the date of the document at the bottom. It's 1 August 1985. That's actually the second page of the document, so if we could go to the next page, which is where it begins, this would appear to be a document authored by Dr Mayne. Certainly in terms of its look and style, it sounds like Dr Mayne. It's headed "Northern Ireland Haemophilia Reference Centre Factor VIII usage". I'll no doubt come back to it when we look at blood product usage but for present purposes this provides an update of information about numbers of patients. The first sentence suggests that

the centre became a designated reference centre in 1976. As we've seen from UKHCDO minutes, that would appear to be incorrect. But, in any event, in the second paragraph we then see the number of people registered in 1984/85 as suffering from inherited bleeding disorders, 189 persons broken down as there set out: so 124 with haemophilia A; 16, haemophilia B; 45, von Willebrand's disease; 2 with Factor X deficiency; one with Factor XIII deficiency; and one with Factor XI deficiency.

Then we see in the paragraph below that:

"Out of this number of patients, 63 are residential and drawn from the Eastern Health Board area. Some 25 of these originate from the North and West Belfast District. The remaining patients are equally divided between the other Health Boards -- 43 from the Northern Board, 43 from the Western Board and 40 under the aegis of the Southern Board."

She explains below that:

"In order to simplify the treatment of these patients, all the blood products necessary for treatment are held at the Reference Centre and issued to other hospitals in the Province, specifically designated for individual patients."

Then I'll leave that document now because I'll

come back to what it says about products in due course.

We have various further figures in relation to increases in patient numbers and we can pick that up in terms of the modern picture and the picture over recent years from the evidence of Dr Benson on Thursday.

The article in The Bulletin, I won't go back to it, but it also shows development of the physical facilities such that by 1989 there was a day centre and an in-patient unit with 16 designated beds, and Dr Mayne's article suggests that at least a quarter of those tended to be occupied by haemophiliac patients much of the time.

There is also reference in the documents to a joint haemophiliac and orthopaedic clinic being held every three months by March of 1988, and we've seen reference in that article to there being a regular dental clinic.

Again, just sticking with an overview of the facilities and services at the centre, if we go to LOTH0000051_089, we'll see a short document from January 1992. It's confidential, to the Haemophilia Centre Directors of Scotland and Northern Ireland, and it's a report on clinical audit from 1991 and it sets

out the results of clinical audit visits.

If we look at the list of centres, Belfast was audited by Dr Ludlam, and that's centre 2, and if we look at the recommendations made by the auditors in the list below for centre 2, what Dr Ludlam apparently picked up on his audit visit to Belfast in 1991 were issues about privacy of bedside and telephone conversations, and there's a suggestion of dedicated rooms and staff and a need for more social work and physiotherapy input.

If we look a little further down the page, the last section of the document says:

"Replies were received from patient questionnaires as follows ..."

So it would appear that the audit involved a patient questionnaire process. And for centre 2 -- I don't know whether "n equals 5" suggests that the number of replies received were 5 -- and it picks up upon those replies having suggested that HIV counselling --

SIR BRIAN LANGSTAFF: Not the number of replies, the number of replies that dealt with the question.

MS RICHARDS: Ah, yes, you may be right.

"HIV counselling by juniors inadequate", is what is picked up there.

SIR BRIAN LANGSTAFF: Just before you pass from that, it is interesting that while Professor Ludlam was auditing Belfast, Dr Mayne appears to have been auditing Glasgow.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: The comments critical of Glasgow appear to include that it needs counselling rooms, which is very similar to the criticism which Professor Ludlam is making of Belfast.

MS RICHARDS: Yes. Yes, you are right, sir.

SIR BRIAN LANGSTAFF: Which is interesting.

MS RICHARDS: If we go to a document authored by Dr Mayne which sets out a reflection on the audit, it's at WITN0736010. It's described as a "1991 report of activity of the Northern Ireland Regional Centre for hereditary hemorrhagic disorders", and if we go to page 6, we can see under the heading "Haemophilia Clinical Audit", Dr Mayne says this:

"The haemophilia Clinical Audit was completed during the month of August 1991. It was carried out by Dr Christopher Ludlam from the Regional Haemophilia Centre attached to the Edinburgh Royal Infirmary. All the facilities at the Centre in Belfast were examined and a signed copy of his report is attached to this document. He has indicated clearly the areas which he

regarded to be significantly deficient. The most important lack of facility is an area where the patients can be seen in privacy and confidentiality. This is particularly relevant to those patients who are HIV positive. The second deficiency was the lack of a dedicated Social Worker to all the Haemophilics in the Province. Due to the widespread distribution of patients and families within the region of Northern Ireland, it has always been a sad lack that there was no facility for a peripatetic Social Worker who could carry out the appropriate home visits. It is hoped that this will be rectified within the near future."

It's a report dated, if we just go a little further down that page, 9 July 1992.

So although the article in The Bulletin in 1989 had expressed a degree of optimism about the provision of social work, by that stage at least it would appear that the position had not been satisfactorily addressed by 1992.

SIR BRIAN LANGSTAFF: I don't quite understand the reasoning there. It is obviously true of Northern Ireland that there will be a widespread distribution of patients and families if you have one treatment centre covering the whole of Northern Ireland, but because of that, it's said, there's

always been a sad lack -- there was no facility for a peripatetic social worker. It's saying because you have got space to go to, places to go to, there's no facility for someone who goes to places? I don't understand the logic.

MS RICHARDS: I can't cast any further light on it, sir. I see your point. That's what we have about it.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: It appears that there was an ongoing lack of such provision and, indeed, of the other facilities identified in the audit and referred to here by Dr Mayne.

SIR BRIAN LANGSTAFF: I mean, I would have thought the reasoning won't be a question of distance from centre to home but a question of funding.

MS RICHARDS: Yes. Yes or possibly difficulties of recruitment. I don't know.

SIR BRIAN LANGSTAFF: Maybe. I suppose if people are spending their time travelling rather than actually working, there may be questions asked by finance. That may have been the reason for it but, still, that's what we see.

MS RICHARDS: It is. We know that by this time -- sorry, it's the same document. Let me just get the page.

Yes, if we go to the first page, just to get

an update of numbers, we can see it says the -- this is the third line:

"The categories of patients which were seen are as follows ..."

So this is not patients simply registered but patients seen. Then it says "(Registered numbers shown in brackets)", but there aren't brackets, so I'm not quite sure what that refers to. But in any event: haemophilia A, 147; haemophilia B, 14; von Willebrand's disease, 61; symptomatic carriers of haemophilia A, 7; and then inherited platelet disorders, 24; and then reference to further clotting disorders and blood disorders as set out there.

Sir, I think that probably is the number of registered patients.

SIR BRIAN LANGSTAFF: If so, it's gone up by about 100 from 1985.

MS RICHARDS: No, from an earlier period I think the figure -- oh, no, you might be right, sir. Yes, there were 189 in total --

SIR BRIAN LANGSTAFF: That was --

MS RICHARDS: -- in 1985.

SIR BRIAN LANGSTAFF: And this is '92. So seven years.

MS RICHARDS: Yes.

In the early 2000s, 2001/2002, haematology

services at the Royal Victoria Hospital were amalgamated with the City Hospital and the centre moved from the Royal Victoria Hospital to the Belfast City Hospital. The arrangements for the move and a comparison between the available facilities is set out in some detail in the statement of Dr Julia Anderson, and Dr Benson may also be able to provide some information about the current arrangements in his evidence on Thursday.

That's adult care. In terms of when children transferred from paediatric care to adult care, if we look at Dr Mayne's evidence, it's WITN0736006. This is a statement of hers from February 2020. If we go to page 5, paragraph 22, and we look at the last sentence, she says:

"... the transfer age to adult care at the Royal Victoria Hospital was 13 years of age ..."

Professor Bridges' statement is at WITN4569001, and if we go to the third page, he gives an age of around 14 but says there were no hard and fast rules. So he says:

"At the Children's Hospital [so that's the Royal Belfast Hospital for Sick Children], I was responsible for the care of patients with haemophilia and related disorders as well as children with

leukaemia and other blood disorders. Children with haemophilia would have been looked after in the Children's Hospital up to the age of around 14 before transferring to the adult hospital (Royal Victoria Hospital), although there were no hard or fast rules and no formal process for transferring to the adult haemophilia service."

He does indicate -- and I'll come back to this part of the statement in a little while. He does indicate that there might have been children who were transferred at a younger age to the care of Dr Mayne if he thought that they might need to be treated with factor concentrates because he used only cryoprecipitate and anyone who needed treatment with factor concentrates would be dealt with by Dr Mayne. Again, Dr Benson will be able to tell us what the current position is in terms of the transition from paediatric to adult services.

We can take that down, thank you.

Just dealing a little more with the various doctor names that we see crop up from time to time in the material, or in the case of Dr Mayne we see crop up frequently in the material.

Dr Elizabeth Mayne trained in Belfast. She worked as a senior registrar in haematology at the

Royal Victoria Hospital from 1968 to 1972. She completed her MRCPath in 1970, became a consultant haematologist in 1972, and she remained at the Royal Victoria Hospital Belfast throughout her career until she retired in 1999.

She was the director of the centre, taking over from Professor Nelson, from 1978 until her retirement in 1999. Dr Mayne was also a member of a number of different committees and organisations. She was chair of UKHCDO in the early 1990s. She was a trustee of the Macfarlane Trust and the Eileen Trust for a period of time in the 1990s. She was at some stage vice president of the World Federation of Haemophilia and I think also in the early 1990s she participated on the Committee on Safety of Medicines.

We have six witness statements from Dr Mayne. Five are statements responding to a range of individual witness statements from patients or former patients and their families. Her sixth and most recent statement is a long statement in response to the broader general questions posed of her by the Inquiry. We also have, as you have seen already, some various miscellaneous documents authored by her and then a lengthier expert report that she produced in 1990 for the HIV litigation, presumably at the request

of the Department of Health.

In terms of other clinicians, I've made reference already to Professor Bridges. He was a consultant clinical pathologist at the Royal group of hospitals in Belfast and based at the Royal Belfast Hospital for Sick Children and, as we've seen, responsible for paediatric care for those patients with bleeding disorders who were children until 1979.

In 1979 he was appointed chair of haematology at Queen's University Belfast, and his statement indicates he spent 50 per cent of his time thereafter in clinical practice, and worked at the adult hospital primarily in leukemia and general blood disorders and his only involvement with adult haemophilia care, he says, thereafter was to provide cover for Dr Mayne.

His role at the Children's Hospital was taken on by Dr Dempsey, and Professor Bridges then retired in 1994.

There's also Dr El-Agnaf, who worked as a registrar in haematology at the Royal Victoria Hospital for a period of a little -- just under a year, August '82 to July '83, and then worked at the City Hospital. He worked in the Blood Transfusion Service for a period of time and then again at the Royal Victoria Hospital, and in January 1988 became an

acting consultant haematologist at the Belfast City Hospital. Again, however, his role appears to have been predominantly in relation to more general haematology.

Dr McNulty worked in the haemophilia centre from 1992. She was a staff grade doctor from 2000 and an associate specialist from 2008.

Dr Frank Jones was the acting director of the haemophilia centre upon Dr Mayne's retirement, and he was acting director from 1999 to 2001. In 2001 or thereabouts Dr Julia Anderson became full-time haemophilia consultant and director at the centre. She was there until around 2005, and then Dr Jones seems to have taken up the mantle of acting director again until Dr Benson's employment.

There was also a brief interlude in which there was a Dr O'Keeffe as consultant in 2006.

I'm going to turn now, having given that overview of the centre facilities and staffing, to the use of blood products. We've seen a passing reference to the position in the 50s, treatment with fresh frozen plasma. Prior to the advent of factor concentrates, it's clear that the product of choice was cryoprecipitate. I want to look at what both Professor Bridges and Dr Mayne say about

cryoprecipitate.

So we'll start with Dr Bridges and go back to his statement at WITN4569001. If we go to page 5 -- sorry, page 3, my apologies. So under the heading "Roles and responsibilities at the Children's Hospital", we have looked at the first paragraph already in terms of age of transfer. In the second paragraph he says this:

"During my time at the Children's Hospital, the main treatment for children with haemophilia was cryoprecipitate. There was no register of patients as far as I can remember. I do not recall having any child patients who would have been under the ages of 5-7 approximately although I cannot be certain. Cryoprecipitate became available around the mid-1960s. This was a major development in the treatment of haemophilia. Prior to the introduction of cryoprecipitate, treatment would have been limited to measures such as bed rest and pain relief and so on."

Then in the next paragraph he says:

"Because my clinical experience of treating haemophilia patients involved mainly treatment with cryoprecipitate, a child who I considered might require treatment with factor concentrates, would have been referred to the adult hospital to be seen by

Dr Mayne."

If we go over the page, if we look at the very bottom of the page you'll see a heading "Selection, purchase and use of blood products (in particular factor concentrates)" and, we go to the top of the next page, he says at the top of that page:

"When I was at the Children's Hospital, concentrates were not used. We used cryoprecipitate which, to the best of my knowledge, was supplied by the Northern Ireland Blood Transfusion Service."

Then he refers to the position at the Royal Victoria Hospital where he spent some of his time after 1979 but essentially says he was not involved in decision-making about what products to use, either generally or in relation to individual patients.

If we go to the next page, we can see at the top of the page he says:

"When I was at the Children's Hospital concentrates were not available. We used cryoprecipitate -- there was nothing else so the question of advantages or disadvantages did not arise."

Then he comments:

"Although I did not use concentrates, I know they were much more effective. They were also much

more convenient, especially for Home Treatment. Cryoprecipitate had to be frozen. You needed space to store it and so on. Back then people did not have freezers that could accommodate it. Another disadvantage of cryoprecipitate was it could not be used for surgery because you would not have had the level of cover needed."

In fact, there's evidence it was used for surgery and did provide an effective level of cover, but that may not have been the case, obviously, for paediatric patients.

He again confirms in the paragraph below he wasn't involved in deciding on the use of concentrates as opposed to cryoprecipitate or in formulating policy regarding home treatment.

So that tells us comparatively little other than cryoprecipitate was the product of choice at the Children's Hospital throughout the 1970s.

In terms of Dr Mayne's perspective on cryoprecipitate, if we go first to RHSC0000067_002. We looked at this a few minutes ago. This is her March 1988 report. I want to pick up, first of all, what she says in the first paragraph. She refers in the second line to the Birch paper about life expectancy of a severe haemophiliac in the 1930s and

then says this:

"New treatment in the late 1960s [which can only have been cryoprecipitate not concentrates] and the innovation of a Home Care Programme in the early 1970s ..."

Pausing there, the evidence in relation to Belfast is that home treatment was introduced either in 1974 or 1976 but certainly the mid rather than early 70s:

"... increased the life expectancy to 71 years in 1977."

She doesn't say where she gets that figure from but if that's the life expectancy by 1977, logically it would seem that must in large measure at least be due either to cryoprecipitate and not solely attributable to factor concentrates because the evidence suggests that cryoprecipitate remained in active use for much of the 1970s.

If we then go over the page, pick it up under the heading "Treatment", Dr Mayne says this:

"In 1967 a milestone occurred; a revolutionary concentrate was produced called 'cryoprecipitate'. It was prepared from single plasma donation according to the methodology discovered by Poole, 1965. It was prepared initially in the Haematology Laboratory,

Royal Victoria Hospital. Then the process was scaled up and taken over by the Blood Transfusion Service. No donor screening programme existed for the detection of viral hepatitis and many recipients developed clinical or subclinical hepatitis B. Nonetheless, the patients were ecstatic about the new treatment. A simple dental extraction was normalised and no longer constituted a major ordeal necessitating many weeks in hospital."

Then if we go to the next page, she says:

"During 1971 cryoprecipitate was replaced gradually by commercially produced freeze-dried/lyophilised factor VIII."

We'll look at the returns which show in fact some continuing usage for cryoprecipitate:

"It had a higher purity and a predictable potency. It became the routine treatment for severely affected patients, cryoprecipitate being reserved for mildly affected patients and those suffering from von Willebrand's disease. Thereafter, from 1974 [so that's the date given here for the commencement of home treatment], the patients were encouraged to learn to treat themselves. This was to reduce or eliminate the endless hospital admissions ..."

Then if we go down a couple of lines she says:

"Within ten years from commencement, all patients with adequate vein access and who had passed successfully the 3-month teaching programme, were placed on home treatment. The benefits accrued from this were as follows ..."

Then she sets them out, in particular hospital admissions becoming a rarity and improved ability to attend school regularly and maintain further education.

SIR BRIAN LANGSTAFF: So when it says "within ten years from commencement", it means by about 1984?

MS RICHARDS: Yes, I think that's what this document is suggesting, yes.

That's her March 1988 report produced I think, as I say for the purposes of trying to secure further funding.

If we then go to CBLA0000072_024, this is Dr Mayne's expert witness report regarding HIV litigation dated May 1990. If we turn to page 6, we can pick up, about four lines down, Dr Mayne's observations on cryoprecipitate. She says this:

"Earlier, in 1954, Professor Gwyn MacFarlane had defined the goal of treatment of a Haemophiliac with Factor VIII as 'continuation replacement as in the treatment of diabetics with insulin'. Factor VIII

availability as cryoprecipitate transformed Haemophilia treatment. It did not achieve MacFarlane's goal but the crippling childhood deformities, the pain, the constant fear of death from trivial injury and the further fear of bleeding following dental extractions or emergency surgery receded.

"Cryoprecipitate was and is prepared by the simple methodology of rapidly freezing donor plasma, followed by slow thawing. Its Factor VIII content is variable as donor plasma levels have a wide range of normal within the population ..."

She sets out the range and sets out what, on average, a single donation of plasma will produce, on average between 70 and 100 units of Factor VIII.

If we just go down a few lines so we can see the rest of the page, picking it up with the sentence:

"In time, experience using cryoprecipitate established that many donations were needed for the treatment of severely affected adult patients. The quantity required led to infusions, large in volume and high in protein content."

Then if we go -- oh, she says at bottom of the page, it also contains the Factor VIII requirements for treating the bleeding of von Willebrand's

syndrome. Go to the top of the next page. She then sets out reactions to treatment:

"Reactions to treatment occurred, probably related to the extraneous protein present. The adverse reactions included the development of skin rashes, minor chills, fevers and, on occasions, more severe anaphylactoid responses occurred associated with difficulty in breathing and a lowering of the blood pressure. Reactions also occurred when small volumes were infused but in general the mildly affected, the children and patients with the von Willebrand syndrome were treated with less complication. A major disadvantage was the unpredictability of infused dosage. Efficacy was assessed clinically and retrospectively in regard to achievement of Factor VIII level in the patient. Maintenance of the sterility of each donor pack precluded estimates prior to infusion. A further disadvantage was the necessity of storage of the product within a deep freeze unit."

So those are what are said to be disadvantages of cryoprecipitate:

"Advantages were efficacy, low donor exposure [safety] and simplicity of manufacture."

There are pieces of correspondence, we've

referred to them in our note on the centre -- I'm not going to go to them now but the references are in paragraph 30 of the note -- which show cryoprecipitate being used in individual cases in the course of 1974.

If we then look at Dr Mayne's witness statement and we go to WITN0736009, this is her most recent statement, 4 February 2021.

If we go to page 6, first of all, Soumik.

I'm just going to pick up references to cryoprecipitate here, so paragraph 5.3, second paragraph on the page:

"The late 1960s was a special time for Haemophilia. Cryoprecipitate, the first really effective treatment had been discovered by Pool and Shannon in 1965.

"My fellow registrar, Dr Brian Otridge, initially, was responsible for preparing 'in house' cryo within the hospital Blood Bank. He took up a consultant post in Dublin in 1968. I took over his mantle until the preparation of cryo was transferred to the Northern Ireland Blood Transfusion Service ... for production on a larger scale."

So cryoprecipitate initially produced in-house before being taken over by the Transfusion Service.

We don't, I think, have a date for when the

preparation of cryoprecipitate was transferred to the Transfusion Service, but elsewhere in her statements and documents, Dr Mayne makes plain there was never a difficulty in terms of obtaining sufficient quantities of cryoprecipitate from the Transfusion Service.

Then if we go to page 11, I think, we can see at paragraph 10.1 she essentially confirms Professor Bridges' evidence. She says:

"In the 1970s apart from myself no other individual was concerned with the selection and purchase of Factor Concentrate. Cryoprecipitate remained the treatment of choice for children. The then Paediatric Haematologist [so no doubt Professor Bridges], rightly, declined involvement in discussing the selection of products for adults."

Then if we go to page 15 -- we'll obviously come back to what she says about factor concentrates -- she talks about cryoprecipitate further in her statement as follows. She says this:

"When planning for home treatment with concentrates, I was anxious and apprehensive about repeatedly injecting patients with any material, particularly over periods of weeks and months via the intravenous route. Therefore, I decided that all

children should remain on treatment with cryoprecipitate. This was early in the 1970s and Dr John Bridges, the paediatric haematologist, was happy with the decision. Later in 1982 his newly appointed successor, Dr ... Dempsey, was even more enthusiastic about using cryo in this way than myself. However, we agreed an exception should be made in respect of a very limited category of patient."

So this is still dealing with children. In the next paragraph she says this:

"In addition to the two severely affected paediatric patients already on home treatment, it was decided that patients with brain injuries or those who required major surgery should have definitive amounts of Factor VIII concentrate to guarantee the achievement of 100 per cent VIII C levels. Fortunately, the situation never arose and concentrates were never used in those circumstances during my time."

So as is apparent from elsewhere in her statements, there were two child patients on home treatment with factor concentrates. The remainder of children, because no other exceptional circumstances arise, remained on cryoprecipitate.

Under the heading below, "Why cryoprecipitate

for Children?" she says this:

"Due to their diminutive size, children did not require large doses of cryoprecipitate to be effective. This reduced the likelihood of allergic reactions which were common in adult patients who did require larger doses. There are a number of problems associated with using cryoprecipitate in large doses."

Then she sets out her perception of disadvantages of cryoprecipitate:

"Firstly, the inability to make reliable dose calculations. This was a very significant problem. Factor VIII C clotting activity has a wide physiological variation. It can increase (along with other clotting factors) four-fold during the third trimester of pregnancy. Likewise, it is raised taking the oral contraceptive pill. It is also increased at ovulation, the point mid-cycle of the menstrual period. This is probably designed, physiologically, to aid ovulation. Thereafter the level falls again prior to the onset of menstrual bleeding. Exercise, particularly circuit running, is also associated with doubling or trebling the Factor VIII clotting activity on a temporary basis. It is likely due to increased blood flow through the spleen ... Thus there is wide variation in the VIII C activity from batch to batch

of cryoprecipitate, dependent on the status of the donor."

So that's Dr Mayne's explanation about the reasons why there might be variations in the amount of Factor VIII activity in individual batches of cryoprecipitate.

Her second identified disadvantage is a purity issue, there's a purity issue due to the presence of incidental material, and she explains that during the time she was involved in the preparation of cryo, technicians noticing packs which had an odd colour and suggests that those might be changes due to the oral contraceptive pill or donors using self-tanning sprays and lotions.

She then says:

"Thirdly, allergic reactions occurred in some patients. Reactions were mild - such as an itchy rash, but others were more alarming clinically with temperature rises and rigors often lasting several hours.

"Fourthly, its preparation for use and its administration are relatively time consuming inconvenient. A fridge freezer is necessary for safe storage. Generally patients prefer other forms of treatment."

Then her fifth identified disadvantage is:

"... like all untreated blood products it carries the risk of viral infection."

I should say that the question that was posed to her was a question to identify the advantages and disadvantages of alternative treatment. She set out there, in relation to cryoprecipitate, disadvantages, but not added anything in relation to what might be thought to have been some of the advantages of cryoprecipitate.

So that's Professor Bridges and Dr Mayne on the use of cryoprecipitate.

I turn next then to the evidence about the use of factor concentrates. If we go to BHCT0000784, this is a document about an individual case. It's dated 12 February 1970. If we go down, we can see it's from Dr Mayne to a Dr Wallace, and picking it up in the second line, it says:

"In view of the importance of this knee joint to [the patient's] everyday life and well being, and in consideration of the fact that he had received no cryoprecipitate for at least one year, we decided to treat him with Factor VIII concentrate on this occasion."

I raise that because it's the first documented

usage of Factor VIII concentrates that we found, February 1970. It's right to note that other documents suggest that the caution in relation to this particular patient about using cryoprecipitate is because of previous reactions to cryoprecipitate and concerns about inhibitor development rather than any concerns specific -- rather than any issue relating to factor concentrates.

So that's what we've seen as the first documented use of factor concentrates. I think elsewhere in the material, Dr Mayne, in her statement, suggests that the first usage was in November 1971, but she may well have, understandably, forgotten this particular incident.

SIR BRIAN LANGSTAFF: She may also have been referring in the latter to commercial concentrate --

MS RICHARDS: She may.

SIR BRIAN LANGSTAFF: -- imported -- then it would have had been on a named patient basis.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: And there's no suggestion in that letter that this patient had it on a named patient basis. So presumably it must have been some of the BPL product, such as it was at the time.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: Lister product, I should say.
MS RICHARDS: Yes. I don't think we -- I'm just looking at an earlier letter we have about this particular patient but I don't think it tells us anything in terms of what the source of the concentrate would be, but that would seem to be right, sir, given the date.

So that's the earliest usage we've identified from the documents in terms of factor concentrates. If we go back to Dr Mayne's witness statement WITN0736009, and if we go to page -- sorry, yes, WITN0736009. Go to page 11.

We can pick up in paragraph 10.2 Dr Mayne's recollection in her recent witness statements of the first use of concentrate. She says:

"The first use of concentrate in Belfast was in November 1971. A haemophilic was admitted with severe intestinal bleeding. Copious amounts of 'cryo' were ineffective. It was impossible to stop the bleeding. He had developed a High Responding Inhibitor. It negated the effect of his treatment."

Then she refers to having, earlier that month, spent some time in the United States doing research at Brown University, and then in Boston having seen the new Factor VIII concentrate being used most effectively. She says she was impressed and brought

this information home:

"Thus, my senior colleague Dr John Bridges recalling this information suggested that I speak to my colleagues in the USA to see if any of the new concentrate could be procured for this young man ... I duly made contact. I arranged for a consignment of 'Hemofil' (manufactured by Travenol Laboratories Ltd) to be sent to Belfast. Coincidentally on that very [same] day Prof Isley Ingram from St Thomas's in London had an identical problem. The company agreed to double the consignment to the UK. The product arrived in Belfast that evening. After treatment, the bleeding stopped and the patient remained well until discharge."

Then she says this:

"Thereafter, Hemofil was the only commercial concentrate in use in Belfast for the next three years."

I will look at some more documents about Hemofil and other products in a moment but if we turn, before we do that, to CBLA0000187, these are the minutes of what's described as a "Joint meeting of Directors of Haemophilia Centres and Blood Transfusion Directors", held at the Regional Blood Transfusion Centre in Sheffield, 31 January 1974. If we go to the

top of the next page, we can see that beneath Dr Maycock's name we see Dr Mayne was there representing Professor Nelson of Belfast Haemophilia Centre.

Then if we go to page 6, we just see a contribution by Dr Mayne to a discussion about -- under the heading -- a broader heading of "The present and future supply of Factor VIII". Under the subheading, "How much material was likely to be needed?", we see recorded this:

"Dr E Mayne gave statistics for Belfast and said that they use material prepared from approximately 10,000 donors for the management of their patients. They keep a stock of commercial concentrate which they find invaluable in the present troubled times."

What the "troubled times" specifically referred to is not clear but there's information about both keeping a stock of commercial concentrate and pool sizes as at 1974.

SIR BRIAN LANGSTAFF: Yes, the pool size, it doesn't say whether it's NHS or commercial but, given the scale of that, that looks very much like commercial.
MS RICHARDS: It does.
SIR BRIAN LANGSTAFF: That was her understanding at the

time?
MS RICHARDS: Yes, precisely.

Now, that's the evidence we have about the introduction and early use of factor concentrates. In terms of which particular concentrates were used over the following years I'm going to look, first of all, at Dr Mayne's statements and reports and then look at the contemporaneous documents.

So if we start with one of her witness statements, it's WITN0736006. This is her statement of 21 February 2020. And if we go to the second page and we pick up in paragraph 5, the bottom half of the page, I'm going to pick it up in the second line:

"The Northern Ireland Blood Transfusion Service ... did not have the capability to manufacture concentrate. It provided local volunteer derived, single donation cryoprecipitate. Therefore, in the mid-1970s when initiated a Home Treatment Programme (HT) for severely affected patients commercial Factor Concentrate had to be used. The following policy for the [Northern Ireland] Haemophilia Centre was drawn up by myself is as follows:

"i) All HT [so home treatment] patients would be treated with only one product: KRYOBULIN Immuno Limited Vienna

"ii) All non HT patients would be treated with HEMOFIL Travenol Laboratories USA

"iii) All children would continue to be treated with cryoprecipitate. There were 2 exceptions; namely 2 severely affected children who were entered into the HT [so home treatment] group."

There's then an observation that no child became HIV positive in Northern Ireland, and I'll come back to that when we look at the scale of the infections.

At paragraph 6:

"At the time there was little scientific basis for the preceding policy, merely my innate apprehension about injecting material repeatedly, and at frequent intervals by the intravenous route, into young patients.

"At the time, I used what I considered to be the best and safest product for those patients who logically would need/use the most Factor, namely the [home treatment] group. I selected KRYOBULIN because I found the Company business-like, straightforward and their packaging was ideal."

None of those factors would go to safety. She then says, however:

"Incidentally [which might tend to suggest that

it wasn't a primary motivating factor in her mind], the source of their donors was within Europe. The second product for the non HT patients [so patients receiving treatment in hospital, essentially] was Hemofil, with which I had been familiar for several years, from 1971.

"In summary the products used within the Centre was as follows:

"a. HT [so home treatment] Group KRYOBULIN Immuno

"b. Non [home treatment] Group -- Hemofil Travenol Ltd USA

"c. Children Cryoprecipitate [manufactured by the Northern Ireland Blood Transfusion Service]

"However, demand exceeded supply within the [home treatment] group. The patients found that using the prophylaxis resulted in a normal lifestyle. UK wide knowledge of good results in [Northern Ireland], plus increased demands, resulted in Immuno being unable to fulfil [Northern Ireland] orders. Therefore, a further supply of Factor VIII was obtained from Armour Pharmaceutical Limited USA.

"In later years when heat treated product became available supplies were received from SNBTS and Elstree."

In fact, there's evidence of supplies being received from SNBTS pre-heat treatment, which I'll come back to:

"No supplies were received from the Republic of Ireland."

So that's that witness statement. If we then go to --

SIR BRIAN LANGSTAFF: Just pausing there, she makes a comment there about Kryobulin and the source of the plasma. We know from other sources that in the late 1970s Immuno were offering Kryobulin manufactured from two different plasma sources: one USA plasma, the other from European plasma. And the difference being that the European plasma cost more, the implication being that it was less likely to be infected with the hepatitis virus. So it would be interesting to know what particular period of time Dr Mayne is talking about. She doesn't say, does she?

MS RICHARDS: She doesn't, no.

SIR BRIAN LANGSTAFF: It's a very broad overview, written looking back.

MS RICHARDS: It is. We do have a number of the annual returns, not all of them, but they do help build up a picture and I will come on to those.

SIR BRIAN LANGSTAFF: Thank you.

MS RICHARDS: But Dr Mayne does not address that; you're right.

If we then go to her most recent statement at WITN0736009 and we go to page 12, we can see she's been asked what were the reasons that led to the choice of one product over another. She says:

"Kryobulin ... was chosen ..."

So this is the top of the page:

"... as the most suitable product for Home Treatment ... patients for a variety of reasons."

Then she gives reasons in the next paragraph:

"Firstly, the packaging had been well thought out by the company. It was eminently suitable for all patients requirements to enable an injection to be prepared and administered with ease. All components were available and presented with clear instructions -- right down to the Mister Men plasters! The latter amused the adults. The company personnel were business-like and efficient."

So no reference there to donor source as a factor for the choice or any different perception in terms of safety.

And then she says in the next paragraph:

"The only concentrate in use in the Centre previously was Hemofil. That company had no Home

Treatment ... package and did not wish to increase their commitment to Northern Ireland.

"Therefore, the Centre's treatment policy was as follows:

"Cryoprecipitate for children

"Hemofil for all non HT patients

"Kryobulin for all HT patients

"thereby attempting to minimise donor exposure in each group. There was no cross-over of usage between groups. This is a most relevant point."

So in addition to telling us which products were used, it would appear from this that part of Dr Mayne's policy was to keep patients on one product. The extent to which that was successful or not is unclear, because certainly annual return information suggests that there were a number of patients who received a range of different products, and we'll look at that in due course.

But that's what she says the policy was. And then she continues in paragraph 10.8:

"Furthermore, the number of companies that would need to be dealt with was also minimised, just in case of any mishap or complication that might occur. Always I had concerns regarding the repeated injections of IV material in relation to the risk of

as yet unknown viruses being transmitted."

She then, if we just look further down --

SIR BRIAN LANGSTAFF: Just pausing there, just a few moments ago you were showing me a document which said there was no scientific basis for the regime which she adopted. She's now setting one out.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: We then see, paragraph 10.9, she says:

"It was difficult in the early days to estimate the quantities of concentrate required, particularly for home treatment patients. I came to the conclusion that these patients would require amounts double or even treble after their first year of treatment. It seemed likely that patients would change from using treatment to stop a bleed when it occurred to taking treatment to prevent a bleed occurring. Each patient would develop a particular pattern of prophylaxis to suit his lifestyle. This scenario did occur. The expected increase in demand for concentrate developed. Therefore, it became necessary to meet frequently with the both companies to plan and adjust standing orders to obtain discounts for the increased quantities in use and to ensure continuity of availability.

"During the late 1980s [and that, I think, is

an error and it's not consistent with what she says elsewhere], a third product had to be introduced due to increased demands for Kryobulin creating a significant shortage. Armour Pharmaceuticals made a successful tender and became the provider of the third product."

SIR BRIAN LANGSTAFF: If only one company was being used for home treatment, then I don't understand the logic of her comment in 10.9, "became necessary to meet frequently with both companies to plan and adjust standing orders" when the reason for the increase has been home treatment demand.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: I can't offer an explanation, sir. You are right to identify. It doesn't entirely add up in terms of reasoning. As I say, the date of late 1980s I'm fairly confident isn't correct in terms of needing to resort to Armour.

Sir, before we break, just one other document on this theme. There are quite a lot of important documents to look at. This is RHSC0000067_002. So this is the same March 1988 report that we've looked at already on two occasions. If we go to page 5 -- sorry, page 4 -- bottom of the page, she looks at HIV,

numbers of those infected. I'm going to come on to that this afternoon or tomorrow but I just want to pick up what she says about policy, last four lines on this page:

"The figures may be explained on the basis of the transfusion policy operated in the Haemophilia Centre since home treatment began in 1974. A single commercial product was used for all home treatment patients and a second product was used for the rest. Thus, patients were exposed to a regular and restricted number of donors. It is probable that exposure to many different commercial products resulted in the higher positivity rates in other centres."

Actually I will just read the whole paragraph, I think:

"Despite using the same quantity of Factor VIII per patient per year, the Northern Ireland positivity percentage is equivalent to that in Edinburgh, which only used local material from the Blood Transfusion Service and at no time used commercial concentrates from whatever source. In addition, all the severely affected patients in Northern Ireland were placed on product A for both home treatment and inpatients."

Pausing there, that doesn't appear to be right

when we look at the data submitted to Oxford:

"It so happened that this product was of European origin which became contaminated at a later date compared with American products. It is likely that this caused the smaller number of positivities in the Province ..."

Then that is said to be hopefully a saving for the future:

"... as there will be fewer patients [who] develop the full-blown acquired immunodeficiency syndrome."

So that was her evidence in 1988 -- I say "evidence", her report in 1988 about the treatment policy.

I'm going to come on to various other documents, in particular contemporaneous documents, but perhaps we could do that, sir, after the break.

SIR BRIAN LANGSTAFF: Thank you.

We'll take a break then until well quarter to 12.

MS RICHARDS: Thank you, sir.

(11.16 am)

(A short break)

(11.44 am)

MS RICHARDS: Sir, we were looking at documents relating

to product usage and treatment policies.

If we could go next to WITN2658002, and if we go to the second page you'll see this is a document authored by Dr Mayne called "A synopsis of haemophilia re: Mr Malachy Devlin". You will recall, sir, we looked at this in some detail during the Belfast hearings when we had evidence about Mr Devlin from his family.

For today's purposes, I'm going to see what the report says more widely about treatment policies, and so if we could go to page 14, please, under the heading just over halfway down the page, "Choice of material for usage in NIHC", so Northern Ireland Haemophilia Centre. "Policy was adopted in 1977", this says, which doesn't quite accord with what we've seen elsewhere:

"It concerned the usage of commercial factor VIII material. As far as was practical, 'one brand' was used for the home treatment patients and a second brand for those unsuitable for home treatment. Depending upon availability and the patient's clinical situation, the policy would be maintained."

Just pausing there, you will see the other documents we have looked at tended to suggest this was

a rigidly adhered to policy. This suggests that it may not have always been possible to adhere to it, and that's borne out by what we will look at in a few minutes in terms of the annual returns.

So:

"If possible, a home treatment patient would continue on the same brand, even should he become an inpatient for emergency or planned surgery."

Again, that is said to be "if possible":

"Additionally, it was felt important to try and treat all children with locally prepared Cryoprecipitate in the first instance to avoid hepatitis."

So that's the reason given in this report for the usage of cryoprecipitate for children.

If we go to the next page -- I should say, the date of this report is 6 November 1989, and again, it's authored by Dr Mayne. So we see Dr Mayne saying this:

"Kryobulin (Immuno Limited, Vienna) was selected for the home treatment patients due to its ready solubility and easy of preparation."

Again, no reference there to anything about donor pools or donor source:

"The decision taken at that time was the

personal one of the Director who felt that it might be prudent to restrict heavy users to only one product. It was not possible to place all the haemophilic patients on home treatment, only those patients with good accessible veins, a reasonable intelligence and who had someone available at home throughout the 24-hour period to help with the administration of the material could be included. There was an almost equal number of non-home treatment patients who were treated with a second brand, Hemofil, manufactured by Travenol Limited, USA. Hemofil was the first commercial product which entered the United Kingdom. It was used in the Northern Ireland Haemophilia Centre in the early 1970s and at that time had proven to be lifesaving. It had less good solubility than Kryobulin and thus was more suitable for hospital usage when professionals were available to carry out its preparation."

Then continuing down the page:

"From time to time, when emergencies occurred the quantities of material needed and the likely duration of the period of treatment had to be considered. It was difficult to maintain large stocks of material. In general there was more Hemofil in stock than Kryobulin, as much of the latter material

was distributed in the home treatment patients' own refrigerators throughout the Province."

Then she goes on to observe that in 1970 Mr Devlin was treated with Hemofil rather than Kryobulin. And then she says this:

"An unforeseen difficulty occurred in late 1982 and in particular throughout 1983. Due to increased demands for European origin Kryobulin on a worldwide basis, standing orders were unable to be met as a consequence a third brand of material was introduced to the Haemophilia Centre in the Royal Victoria Hospital. The third material was Factorate produced by Armour Limited, USA."

Then she goes on to document Mr Devlin's own treatment.

So you'll see there that rather than, as the witness statement had suggested, it being in the late 80s that a third product had to be introduced, that the closer in time material suggests that it was due to an inability to obtain sufficient Kryobulin that the third concentrate, commercial concentrate, Factorate was introduced in the early 1980s, in particular 1983.

If we then look at one further contemporaneous document before we turn to Factor IX and then to the

annual returns.

Soumik, IPSN0000332_021, please.

This is an internal note from -- it's "DRW", I think that's Mr Williams of Speywood, 19 October 1978. Sorry, if we just look at the bottom of the page for a moment, you will see the initials "DRW" and we will see the date, 19 October 1978.

And then if we go to the top of the page, we see the heading, "Meeting with Dr Mayne, the Royal Victoria Hospital, Belfast, October 10th 1978". So this appears to have been the Speywood representative's visit to Dr Mayne and he is recording this:

"This is the only Haemophilia Centre in Northern Ireland and there are 120 patients on the books. 45 are severe and 12 have inhibitors.

"Dr Mayne is not prepared to change her present policy concerning human factor VIII. She uses Hemofil for operations and Immuno for home treatment [and it's said then to be 22 patients]. She realises this is an expensive policy, but feels that treatment changes are something best avoided with Haemophiliacs. She is very concerned about liver enzyme changes [so that's what's recorded about this meeting here], but at least she knows what to expect with products which have been

used for some years. There is also loyalty to Hemofil, because Baxter obviously gave her considerable financial help in the early days. Nonetheless, I will be quoting for an annual contract, hoping that our price will be sufficiently lower to awaken her interest. The one thing she would not tell me, was her current buying in price."

So what the reference is to current financial help is not currently known, and I should, in fairness to Dr Mayne, note that she wasn't asked about this, hasn't been asked about this at this stage, so we don't know what she would say in relation to that.

It continues on to say that:

"She has 2 serious vW patients, one of whom had 300,000 units of human last year. Dr Mayne is very keen to look at our proposed product in this area.

"She feels Feiba is of little value, but believes Rizza's frequent low human dose discipline for inhibitors to be of benefit. However, in her view animal has a definite place and she would like to study the PE material."

We will come back to what Dr Mayne thought of and what use she made of the Hyate:C porcine product a little later:

"Dr Mayne has a very open personality and is

a very good source of information. We must keep in touch."

So, in any event we see there what Mr Williams' understanding was of Dr Mayne's approach as at October 1978 and, in particular, he appears to have picked up a concern about liver enzyme changes.

Just to complete the picture in relation to interactions with Mr Williams around this time, if we go to IPSN0000332_019 -- sorry, Soumik, my apologies could we go, first of all, to IPSN0000332_020.

We can see there's an exchange of correspondence, Mr Williams writing to Dr Mayne, on 6 November 1978, referring to the visit, and then inviting her, in the second paragraph -- whether he could persuade her to use some Koate, so a fourth commercial concentrate, and he sets out what the price would be and sets out what he perceives to be certain advantages of it.

If we go to Dr Mayne's reply, IPSN0000332_019, she writes in the second paragraph, second sentence:

"It may be possible that I will be reconsidering the financial expenditure regarding the purchase of Factor VIII concentrates to other to treat our haemophilic patients.

"If there is any change in my policy, I shall

not hesitate to get in touch with you."

Then if we go to IPCN0000332_017, we pick this up now a few weeks later, in early 1979, and again Dr Mayne's writing to Mr Williams at Speywood, and she says in the second paragraph:

"I am most interested in the prices that you are quoting for Koate during the forthcoming year. I think they are competitive but regret to inform you that they are not quite so favourably competitive as our present contracts with the two commercial Factor VIII firms. However, I have had long discussions with my Senior Chief Medical Laboratory Scientific Officer in the Blood Bank, with the following results:

"It seems likely that our Home Treatment programme will expand and that our needs for commercial Factor VIII may expand further due to increasing orthopaedic operations, et cetera, being carried out on the site. Therefore Mr Carville and myself agree that, should expansion become necessary, we will be happy to place a further order with your firm for any additional supplies of Factor VIII that will become necessary.

"I appreciate that this is a further ray of hope but trust you will keep in touch and look forward

to hearing further about your porcine material."

So that's her communication in relation to the possibility of purchasing Koate in the future.

Then Mr Williams wrote to Dr Mayne in February explaining that there was a price reduction in terms of the current stocks of Koate because of a change in the packaging style, and we can see Dr Mayne's response to that at IPSN0000332_015.

This is a letter of 16 February 1979 to Mr Williams referring to the letter I have just mentioned informing her of a price reduction in the current stocks, and she says:

"I have asked Mr John Carville, Chief, Med Lab Scientific Officer, to place an order through the pharmacy for 30,000 units of the 970 packs ... I would be grateful if you would reserve this quantity for us until receipt of the order -- persistence is usually rewarded."

So an order placed for Koate in February 1979, so an additional commercial concentrate introduced.

Then in terms of Factor IX concentrates, we can perhaps pick this up in one of Dr Mayne's statements. It's WITN0736005. And if we could go -- I'm not sure of the page number, it's paragraph 3.3, please Soumik. So if we go on a couple of pages, go to the next

page -- sorry, if we keep going. It's a very long set of sub-paragraphs numbered 2. Yes, so if we go to the next page. Thank you.

So if we look at 3.3.2, this is the position in relation to Factor IX, she says this:

"During the early 1970s there was no concentrate or product available designed specifically to treat patients with Haemophilia B. In order to ameliorate this situation I contrived to produce locally a product to correct the Factor IX deficiency."

Then she explains that she took her research to Dr Bidwell in Oxford. She was initially left with a flea in her ear, she says, but then got a call from Dr Bidwell who said her research was amazing -- that's paragraph 3.3.3 -- but that it was too late for implementation. Then at the last few lines of paragraph 3.3.3 Dr Mayne says this:

"At the conclusion of our phone call, she suggested that Oxford would send us in Northern Ireland some of their own Factor IX concentrate. At the time it was not freely available and Northern Ireland was fortunate to receive such material manufactured from volunteer plasma in England."

Then in the next paragraph she says that

commercial products, so commercial Factor IX products, were not introduced until the mid-1980s, when UK supplies were unable to cope with demand. So NHS Factor IX from Oxford is what Dr Mayne says was used for the treatment of those with haemophilia B.

I want to turn next, sir, to the annual returns and see what they tell us about actual product use. We have a number of annual returns, so if we start with the first that we have, which is for 1976, it's HCDO0000054_006. If we look at the top of the page, we can see it's "Annual return for 1976 ... materials used to treat patients having haemophilia or Christmas disease". The director is Dr Nelson. Dr Mayne's name is also there.

"Total number of haemophilic patients treated during the year: 37.

"Number with ... antibodies: 6.

"Total number of Christmas disease patients treated during the year: [7 crossed out] 6."

That's not 76, that's 6:

"Number with Factor IX antibodies: NONE."

Then if we look at the material being used, we can see in relation to cryoprecipitate, Factor VIII units, 376,190. And then we can see Hemofil, 271,970 units, and Kryobulin, 151,686 units.

So a mix there of cryoprecipitate and then, in terms of factor concentrates, Hemofil and Kryobulin, as Dr Mayne has explained in her statements.

Then we can see in relation to NHS Factor IX concentrate it's the Oxford product, 101,000 units, and then there is a small amount of commercial Factor IX concentrate, 11,500.

So it would appear her recollection that it wasn't used at all until the 1980s was incorrect but, it appears, used there in fairly moderate quantities.

There's no form available or separate form that we have for von Willebrand's disease patients. If we look just below the table it says, where there are four asterisks:

"Please do not include von Willebrand's disease patients ... on this form ..."

But we don't have the form for 1976 for von Willebrand's patients.

If we could then turn to the annual return two years later, 1978.

Soumik, that's HCDO0001231. And if we could go, first of all, to page 7, and if we could zoom in on the top. Thank you.

So, annual return for 1978. Again, we see Professor Nelson and Dr Mayne. Dr Bridges' name is

also there and it's right to note that at this point in time there's a single return which covers usage at the Children's Hospital as well. So it all gets caught up in these annual returns rather than there being a separate return.

"Total number of haemophilic patients treated during the year: 51.

"Number with Factor VIII antibodies: 9.

"... number of Christmas disease patients treated during the year: 4."

Then there's a figure of total amount used to treat these patients during the year, which is 1,352,607. And then if we go further down to look at the table, we can see there cryoprecipitate being used, 200 and -- I'm not sure whether that's 50 or 60,000 --

SIR BRIAN LANGSTAFF: I think it's 50.

MS RICHARDS: I think it might be as well.

250,646 units of Factor VIII.

And then we can see usage of NHS Factor VIII: 186,992.

So although other materials we've looked at would suggest that NHS Factor VIII concentrate wasn't available, it appears there was some availability at least. Hemofil, 290,599,000. Kryobulin, 334,390.

And then the Factor IX concentrate has been put in the wrong column, we can see from the arrow, 144,660 units. And then there's some use of FEIBA and Proplex, which I think would have been in relation to patients with inhibitors.

If we go over the page, we then have information specifically about the material used for haemophilia A patients with Factor VIII antibody, so inhibitors, and we can see there the amounts being used, the small amount of NHS concentrate, Hemofil, and then we see a Factor IX concentrate, it's Hyland manufactured Proplex. So, again, there is some evidence of commercial Factor IX usage. And then FEIBA, 41,000 units.

If we just go further down the page, we can see a further 11,500 units of another material and there's an explanation in handwriting about the use of that for one of the inhibitor patients.

If we then go on a further two pages, Soumik, we do have the separate form for von Willebrand's patients for 1978. We can see seven patients treated during the year. Cryoprecipitate, 214,716 units. And then if we go down to the bottom, we can see there's then a small amount of usage of Immuno fibrinogen.

Actually, I should say, go on -- before I make

my observation -- two further pages. Sorry, Soumik. There's a covering letter from Dr Mayne to Ms Spooner dated 18 April 1979 enclosing the 1978 returns, and she says:

"A few patients are treated in the peripheral hospitals and I find it impossible to obtain accurate records of therapeutic materials such as cryoprecipitate used in these hospitals."

So there's -- there may be some inaccuracy in the cryoprecipitate figures. She says:

"... the enclosed results are as accurate as possible under the circumstances."

Those are the overall forms but if we go back to page 1, and see if we can get the form the right way round, Soumik, what you'll see here, sir, are details of what individual patients received and -- being submitted to Oxford. And we can see if we look at the right-hand side, there's the heading:

"Type of material(s) received during 1978 (please tick [the] appropriate column(s))."

All those that are shown on this page there is only one tick in relation to the patients. So they are receiving one form of product only.

But if we go to the next page, and again if we turn it the other way up, we'll see there that there

are some patients who receive more than one type of treatment. So the first patient, for example, there's a tick in the cryoprecipitate column, there's a tick in the Edinburgh Factor VIII column and a tick in the Hemofil column. The third patient, again, we see receiving cryoprecipitate Elstree Factor VIII and Hemofil. The fourth patient is identified as receiving Hemofil and Kryobulin and other materials, as is the last patient listed on this page, Hemofil, Kryobulin had other materials.

I won't go through all of them but, if we go over the page, we'll see, for example, the third patient down identified as receiving Elstree Factor VIII, Hemofil and other materials.

And if we go on just two further pages please, Soumik, again we can see, if we look at the last two patients listed, one receiving Elstree and Hemofil, another receiving Elstree, Hemofil and other products and so on.

So the policy of keeping patients on one type of concentrate product only does not appear to have been entirely successful, and we continue to see cryoprecipitate usage as well for a number of patients who are also receiving factor concentrates.

That's 1978. If we can go to the next return,

which is 1979, it's HCDO0001300. We can see from the top of the page, "Annual Return for 1979", the director is now solely Dr Mayne, so she's taken over from Professor Nelson:

"Total number of haemophilic patients treated during year: 63."

Ten with antibodies. Christmas disease patients treated during the year: 2. None with Factor IX antibodies.

Then if we look at the table, we can see still usage of cryoprecipitate but decreasing in quantity, 120,000. Again, some usage of NHS Factor VIII concentrate, 135,483. And then we can see the relatively small amount of Koate being used, 27,160. And that presumably reflects the purchase made as evidenced by the exchange of correspondence with Mr Williams of Speywood. The timing fits in that regard. So a third commercial concentrate being used in 1979.

Then we see the figures for Hemofil and Kryobulin significantly greater than the previous year: 557,655 units of Hemofil, 440,051 units of Kryobulin, and then in terms of NHS Factor IX concentrate, 194,180, and no commercial Factor IX concentrates used.

If we go over two pages we can see the form for inhibitor patients. So we see a breakdown there: Hemofil used, NHS Factor IX used and FEIBA used.

Then if we go to page 6, we see there haemophilia carrier treated during the year with Immuno concentrate, and then the next page tells us, in relation to von Willebrand's, we have eight patients treated during that year. Cryoprecipitate is the treatment of primary choice, 176,333 units. And then we see there an entry for DDAVP. So that's the first time it appears, and it appears specifically in relation to von Willebrand's patients, not in relation to any haemophilia A patients.

If we go to the next page, we'll see similar information as we saw from the previous return, and again we can see that there are some patients who are receiving more than one type of material. So, simply by way of example, the first patient listed receives cryoprecipitate and Hemofil and FEIBA. And then if we go over the page -- again, this is just by way of example -- the first patient receives cryoprecipitate, Elstree Factor VIII and Hemofil. And then the patient four rows up from the bottom receives cryoprecipitate, Elstree Factor VIII, Hemofil and Kryobulin. And

again, there are further examples of a number of patients receiving more than one type of concentrate as well as continuing to receive cryoprecipitate in addition to factor concentrates. There are a number of pages -- I won't go through the detail of them -- but the Inquiry has that data which show that it wasn't, clearly, always possible to adhere to a treatment policy of treating patients with only one type of concentrate at all times.

SIR BRIAN LANGSTAFF: Is there a broad correlation between those who are moderate as opposed to severe haemophilia A patients, in that the moderates tend to be given the variety of product more than the severely affected?

MS RICHARDS: The data on this page would be consistent with that. I haven't checked through line by line for all the returns for which we have this data to see whether that's the case, but we can do so. We'll have a look overnight, sir, and I can let you know tomorrow what that tends to suggest. We don't have this data for every year. We only have it for some of the years.

Just sticking with the information that appears to have been sent with the 1979 annual returns. If we go to page 18, Soumik, we can see that data was also

sent to Oxford setting out hepatitis B status, and you'll see that in the right-hand column, and there's "no" or "not known" for a majority of patients, "no" for a majority of patients, but there are some for whom we see "yes" as the answer in that column, in terms of hepatitis B antigen status.

And if we go to the next page -- so there's two on that page. There are seven on that page answered "yes" on that column. If we go over to the following page there are four with a "yes" in that column. And on the last page there is one with a "yes" in that column.

Those are the returns for 1979. We then have returns for 1980. HCDO0001394.

If we just zoom in a little closer, thank you, we can see the director there is Dr Mayne, and Professor Bridges is also given, reflecting the fact that there was a single return covering the haemophilia reference centre itself but also the treatment at the Children's Hospital. So this is the 1980 annual return:

"Total number of Haemophilia A patients treated during the year: 65 ...

"Total number of von Willebrand's disease patients treated during the year: 8."

You will see the forms changed in 1980. So here we have a form specifically for haemophilia A, haemophilia A carriers and von Willebrand's. And then the table is broken down into home treatment and hospital treatment.

So if we look at the table itself we can see cryoprecipitate for hospital treatment. Again, the amount used has come down from the previous year, it's 71,370. None used for home treatment. The amount of NHS Factor VIII concentrate used is recorded as 120,672. That's all for in-patient treatment, none for home treatment.

Then we can see, earlier than the other documents had suggested, the introduction of Armour Factor VIII. So this would suggest that was in use in 1980. Quite why and how that fits in with the other documentation and Dr Mayne's explanations of her treatment policy are unclear. 93,322 units of Factor VIII. No Koate this year, so it looks as through the purchase from Mr Williams of Speywood may have a one-off. And then we see Hemofil, 520,887. That's all for hospital treatment. And then in terms of Kryobulin for the home treatment programme, so a smaller amount used in hospital, 63,809, and a much larger amount used for home treatment, 597,761. We'll

see there's also then some reference to porcine product being used.

SIR BRIAN LANGSTAFF: The figure in brackets, does that refer to the number of people going on home treatment?

MS RICHARDS: I think it does. It is certainly consistent with what Mr Williams' understanding had been in autumn 1978 of the number of patients on home treatment. So yes, that would seem highly likely.

Porcine Factor VIII concentrate being used, we can see 13,420. And then the Immuno FEIBA product, 84,500. You will note no reference to DDAVP being used at all.

Then you will see for the von Willebrand's disease patients, the only product identified as used is cryoprecipitate, and that's all in hospital.

If we go to page 3, we can see the figures for haemophilia B in that year: 4 patients treated, and the product used is NHS Factor IX concentrate at 17,560 in hospital, 32,870 for home treatment.

There's also then an:

"NB: 105,564 units used to treat ..."

I'm not quite sure what the next word is.

SIR BRIAN LANGSTAFF: "Several" I think.

MS RICHARDS: "... several inhibitor patients."

SIR BRIAN LANGSTAFF: That looks as though it's not

addressing haemophilia B.

MS RICHARDS: Yes. So it's not entirely clear. We have the usage for haemophilia B patients in the main body of the table. It looks like Dr Mayne wanted to record additional usage of Factor IX for haemophilia A patients with inhibitors somewhere in the returns, and she's put it there.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: Again, if we go to the next page, we see in slightly different format but again the same information being submitted about materials used. This one is slightly harder to read but again there's some patients only receiving a single type of material, but if we go to the next page we see a number of patients receiving more than one type of material. So, for example, the patient that's about five lines down is receiving both Hyland and Immuno. We can see those two ticks in columns next to each other. A little further down, just over halfway down the page, there's a patient receiving Hyland and Oxford Factor IX and Armour, and then a patient who's down as receiving Hyland and Immuno, and then some patients just receiving one single product.

That pattern -- again, I won't go through all of it, but that pattern continues over the following

pages, with a number of patients receiving more than one concentrate, including more than one type of commercial concentrate.

So that's 1980. The next return we have is for 1983, and that is HCDO0000153_003. So the first document is in relation to haemophilia A and von Willebrand's patients. So we see:

"Total number of Haemophilia A patients treated during the year: 72."

Not quite clear what is written under -- it looks like it might be a 2, for the number of carriers of haemophilia A. Then:

"... von Willebrand's disease patients treated during the year: 16."

Then if we look at the table for haemophilia A patients, the amount of cryoprecipitate has come right down to 18,210. Volume of NHS factor concentrate not dissimilar from previous years: 159,090. And then we can see by 1983 a very significant amount of Armour Factor VIII being used, and that's for both in-patient treatment and home treatment. It's now the largest amount used for home treatment in 1983. So the in-patient treatment for Factor VIII is 289,630. The total use for home treatment is 505,844. There's rather less Hemofil being used, 128,983,

in-patient treatment. Kryobulin is still being used to a small extent in hospital, 27,419, and to a significant extent for home treatment, 422,497. But it is apparent that there are now two commercial products being used for home treatment: Factor VIII and Kryobulin. Which it doesn't appear -- well, it accords with what Dr Mayne has said in some parts of her evidence but not elsewhere.

We can then, if we look towards the bottom of the column, see porcine Factor VIII being used: 609,935. FEIBA: 156,870. And Autoplex: 3,500 -- no, sorry, I've got those numbers the wrong way round.

SIR BRIAN LANGSTAFF: The other way round.

MS RICHARDS: Autoplex: 156,870. And FEIBA: 3,500.

Those, I think we see elsewhere, are for patients with inhibitors. Then in the column "Carriers for haemophilia A" we can see a small amount of cryoprecipitate: 8,500. Von Willebrand's, again cryoprecipitate is the only product used: 55,710 in hospital, 145,020 home treatment. So we can see there cryoprecipitate is used for home treatment for von Willebrand patients.

No reference you'll note, sir, to DDAVP usage.

That's the first part of the 1983 return. There's a specific form in relation to the inhibitor

cohort of patients. That's HCDO0000153_004. We can see there are nine patients treated during 1983 who had Factor VIII antibodies, ie inhibitors. And we'll see that they had been treated with Factor VIII, so the Armour product, in hospital: 166,503 units. Some treatment with Hemofil in hospital: 56,000. And with Kryobulin: 13,434. And then the largest volume is the Hyate:C, the porcine product, the Speywood product: 609,935. And then we see the figures given for Autoplex: 156,870. And FEIBA: 3,500. She's noted at the bottom five patients responded well to porcine Hyate:C.

Then, just to complete the picture for 1983, if we can go to HCDO0000153_005, we have the figure for haemophilia B patients. Five patients treated during the year and we can see the usage is the NHS Factor IX concentrate, both in hospital and at home, and the quantities there set out.

The last return we have, the penultimate return we have, is for 1984. Soumik, that's HCDO0001789, and we can see these are the annual returns for 1984:

"Total number of Haemophilia A patients treated in 1984: 82."

1 haemophilia A carrier, 8 von Willebrand's disease patients.

And then we can then see for the haemophilia A patients the product used: cryoprecipitate in hospital, so that's gone up from the previous year, 190,560. NHS Factor VIII concentrate has gone up significantly, and that may be because of the arrangements that were made with Scotland which I'll come on to, 525,710 units used in hospital, 69,810 for home treatment.

We can see that, again, there's very substantial usage of the Armour product Factor VIII, 506,184, in hospital, 394,800 for home treatment.

Hemofil usage has gone right down to a modest 24,240 units in hospital. And then Kryobulin is used entirely for home treatment, 441,408 units.

So those on home treatment receiving Kryobulin Factor VIII and NHS Factor VIII concentrate.

And then if we look at the bottom of the page, in terms of the porcine Factor VIII concentrate, we see a very substantial figure: 777,776. And we can see that approximately two-thirds of that was used on one patient? Then carriers of haemophilia A cryoprecipitate, 4,000 units in hospital. The von Willebrand's disease patients, the volume has gone up but it appears to be only in hospital not home treatment, and that's 1,108,800, is the figure there

given.

The significance of looking at the concentrates used in 1983 and 1984 will become particularly apparent later when we look at the numbers infected with HIV and the dates of seroconversion because the available evidence suggests that, for the majority of those who seroconverted to HIV, the seroconversion took place in '83 or '84 or, indeed, in I think at least one case, '85.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: So those are the haemophilia A and von Willebrand's figures.

If we go to the next page we see the breakdown in relation to the eight patients treated with Factor VIII antibodies. NHS Factor VIII concentrate: 47,920. And then receiving Armour and Travenol in the smaller quantities there set out, and then much larger quantities of porcine Factor VIII as set out on the previous page. NHS Factor IX concentrate used for inhibitor patients: 202,300. Again, I should have observed but didn't, in relation to the previous page no reference to DDAVP at all.

Next page, gives us haemophilia B information: four patients treated in 1984 and we can see again for that year the sole product recorded is

the haemophilia A patients a very small amount of cryoprecipitate used in hospital, 3,780. A much larger volume of NHS Factor VIII concentrate -- and the evidence suggests that the Scottish heat-treated product was being used, not necessarily exclusively but in part -- so that's 1,421,490. And then we see Alpha Profilate being used, Armour Factor VIII and Travenol Hemofil all being used. Again, presumably, by this time, heat-treated.

And then in relation to presumably patients with inhibitors, porcine Factor VIII and Autoplex and FEIBA.

Then a reference to DDAVP being used for two patients. So DDAVP makes a late appearance here in 1986.

Also then we have the figures for von Willebrand's and the carriers of haemophilia A treated with cryoprecipitate.

SIR BRIAN LANGSTAFF: Just before we do, there's no Kryobulin.

MS RICHARDS: That's right. No Kryobulin at all.

SIR BRIAN LANGSTAFF: So the shift -- the switch away from Kryobulin begins -- is some time in '85/'86?

MS RICHARDS: Yes. We don't have the return for 1985 unfortunately, but, yes, between 1984 and 1986 that

the NHS Factor IX concentrate: 120,215 for the hospital and 30,315 for home treatment.

Sorry, I should say, if we just go to the next page we do have some data for this year in terms of individual patients. Again, we'll look and see overnight if we can trace any correlation through in terms of the severity or otherwise of the haemophilia A, but there are, if we look, for example, towards the bottom of the page, 5 and 4 entries up from the bottom of the page, we can see two patients ticked as receiving both Armour concentrate and Immuno concentrate and there are further examples on the next page. A number of patients for whom there is a tick in the Armour column and in the Immuno column and, indeed, for some of them, in the Edinburgh Factor VIII column. And that's a pattern that continues over the following pages. So whilst there are still some who receive only one type of material, there are others who receive two or sometimes three types of material.

The last set of returns I'm going to go to is from 1986, so we're now into the era of largely heat-treated product.

HCDO0000362_008. So the returns for 1986: 81 haemophilia A patients treated, two haemophilia A carriers, 11 with von Willebrand's. We see there for

shift is taking place. It may reflect what was available in terms of heat-treated product.

In terms of haemophilia B, it's the fourth page, and we can see four patients with haemophilia B treated, all with NHS Factor IX product in terms of hospital and home treatment.

So that's what the returns tell us.

There's one further document from Dr Mayne from 1985 I should invite you to look at. It's BHCT0000503. We looked at it earlier, it's the 1 August 1985 document, and if we go to the second page we looked at it earlier for a snapshot of the number of patients registered in '84/'85.

If we now look at the bottom half of this page we see what Dr Mayne was writing in August 1985. So I'll pick it up with the sentence I read before:

"In order to simplify the treatment of these patients, all the blood products necessary for treatment are held at the Reference Centre and issued to other hospitals in the Province, specifically designated for individual patients. Some 38 patients with Haemophilia A and one with Haemophilia B are on home treatment [so that's the figure by August 1985]. This implies that they retain their own supplies of Factor VIII and with the help of relatives, inject

themselves as soon as a bleed occurs. Up until December 1984 the treatment was virtually all commercial imported material and up until the end of 1982 this all originated [and the 'all' does not appear to be borne out by the returns] from Immuno in Vienna, namely European Factor VIII. Thereafter the scare and implications for AIDS made great inroads into the European supplies, therefore, we were grateful to receive American material from Armour Pharmaceutical Company Limited. They were already regular supplies of material for inpatient surgery."

So Dr Mayne is here suggesting that the lack of availability of the Immuno product was because of the concerns about AIDS and a greater desire for European material. Slightly curious wording to suggest, therefore, grateful to receive American material but, in any event, you'll see the figures there set out. I haven't done the maths to see how they correlate with the returns but we can do that.

You'll see she says NHS Factor VIII only became available in December 1982. Again, that doesn't appear to be completely accurate when we look at the returns.

SIR BRIAN LANGSTAFF: That plainly doesn't fit with the returns.

"From December 1984 all commercial material and NHS material has been ordered by us through the Regional Blood Transfusion Service, to enable at long last a regional budgeting system to exist for the haemophilic population of Northern Ireland."

So it would appear that prior to that date it was ordered directly by the centre, by Dr Mayne, and that's the date she's given at the point in time when she places the order through the Blood Transfusion Service. She goes on to talk about particularly usage in relation to patients with inhibitors.

If we then go to BHCT0000907. This is really to complete the picture in relation to the introduction of heat-treated product. Can we go to the third page.

This is a letter from Professor Bloom to Haemophilia Centre Directors, 9 April 1985, and it's a questionnaire that he's asking the centre directors to complete, and he wants to assess the demand for heat-treated Factor VIII and IX concentrates.

If we can then go to page 2, we can see Dr Mayne's completion of the questionnaire:

"Are you still using unheated commercial Factor VIII: No ...

"Are you still using unheated BPL Factor VIII:

MS RICHARDS: No.

SIR BRIAN LANGSTAFF: Can we just go back to the number of patients referred to in this earlier because that, I think, comes to 189. The latest return, the return for 1984, showed there were 95 patients, that includes four with haemophilia B, and in 1986, 98.

MS RICHARDS: Yes, the returns show the number of patients treated.

SIR BRIAN LANGSTAFF: So about half, roughly, of the patient cohort received no treatment during the year?

MS RICHARDS: That would seem to follow. And that's not dissimilar to what we've seen in other centres where those who are mild haemophiliacs don't necessarily require any treatment for years.

If we go over the page -- sorry, back to the first page, which is the second page of the document, Dr Mayne says this in the first paragraph:

"It is clear from these figures that the increased use of NHS material should have produced an economy in the purchase of commercial material but, due to extensive orthopaedic surgery being necessary following a series of road traffic accidents and bone fractures, the increase in NHS material was inadequate for needs."

Then she says this:

No ...

"Are you using cryoprecipitate: Occasionally for children.

"Are you using heat-treated commercial factor VIII: occasionally.

"Are you using heat-treated BPL factor VIII: No.

"... unheated BPL factor IX: No.

"... heat-treated commercial factor IX: No.

"Have you had any significant financial restrictions on purchase of concentrates: No."

Then the completion makes sense when we read what is set out below:

"The [Northern] Ireland centre is being provided with heat-treated VIII [not quite sure what the next word is] from Scotland, and unheated IX [it looks like that says] from the same place."

So the writing's not entirely clear but, in any event, they are being supplied by this time from Scotland, and we will look at the arrangements for that in a little more detail.

SIR BRIAN LANGSTAFF: That's "material", I think, the word after "IX".

MS RICHARDS: Yes, you might be right. So it appears to be:

"... heat treated [Factor] VIII material from Scotland, and [looks like] unheated IX material from the same place."

I think is what it says. I'm not entirely certain about those last two words.

SIR BRIAN LANGSTAFF: "Same source".

MS RICHARDS: Yes, I think you're right, sir.

So that's what the contemporaneous or near contemporaneous documentation tells us about actual product usage. So we've seen from the materials looked at so far that the home treatment programme commenced in the mid-'70s, '74 seems to be the likeliest date, although one of Dr Mayne's statements recalls it being around 1976.

If we look at her statement at WITN0736006. I'm looking for paragraph H -- sorry, Soumik, again, I haven't got a page number recorded. Paragraph 8, sorry. Yes.

So we've got figures there in paragraph 8. She says there a figure of 43 on home treatment. She then gives the figures about how many became HIV positive. Again, I'm going to come back to that. Then she says, in the last sentence of paragraph 8:

"... the final number included HT group may be 43 or 47, my memory eludes me."

So that's her recollection as to the numbers of home treated patients. It's not entirely clear where that figure derives from.

In terms of the approach to home treatment, we've seen reference to patients treating themselves prophylactically in some of the materials we've looked at, and that's also addressed by Dr Mayne in an article in 1979.

If we could go to HSOC0022869. If we go to -- sir, this is -- yes, I should say -- a Bulletin, number 3 of 1979, so The Haemophilia Society magazine.

If we go to the second page, we look on the right-hand column "Annual General Meeting in Manchester". We can see there was a lecture given by Dr Mayne, and she then subsequently produced her recollection of what it was she set out, because the tape recording of the proceedings had failed.

If we look at the next page, in any event, the middle column, top half of the page, the third paragraph -- no, sorry, the second paragraph, she says -- beginning "To this end" -- she says this about prophylaxis:

"To this end I feel that prophylactic treatment with factor VIII has lot to offer a family to avoid these stressful situations developing. Certainly

I have found that, coming up to exams et cetera a small dose of factor VIII is all that is necessary to keep the haemophilic on an even keel. I think it is because he realises that people are concerned and in some way this sorts out the bleeding problems!

"I often feel, as doctors, we worry too much about the number of bleeds that each haemophilic patient has. It always seems to me to be so much more important to realise that despite having no clotting activity of factor VIII in their blood, they do not bleed each and every day."

So some advocacy for prophylactic treatment. And we can see that in the right-hand side column, if we just go a little further down the page, Soumik, to the last paragraph of the article. It's the last paragraph -- thank you. Right-hand side, it says:

"In summary, I think the medical profession need to provide time, need to seek to have some permanent staff available for chat sessions", et cetera, et cetera.

Then she says this:

"... to encourage patients with inhibitors, to meet and try to establish a lifestyle that suits them, to use prophylactic factor VIII in a wise fashion to help patients over stressful periods of time and to

operate as widespread a home treatment programme as is locally possible."

So it would appear Dr Mayne an enthusiastic advocate of home treatment, and that's clear from other materials, but also an advocate of a degree of prophylaxis in terms of the approach to home treatment.

We can take that down, thank you.

In terms of the particular arrangements for the supply of products, we saw an example of Dr Milne communicating directly with Mr Williams of Speywood about Koate and Hyate:C, and there is also correspondence which shows her in communication with BPL and with PFL arranging for concentrate for particular patients. So it appears to have been very much Dr Mayne's role to make the arrangements in the 70s and in the early years of the 1980s for the procurement of the factor concentrates that she wished to use. There is then, in the first years of the 1980s, the issue about supply from Scotland, and I just want to pick that up and show you various documents relating to it.

So as well as commercial concentrates, NHS concentrate was received from Scotland. And if we go to PRSE0003946, we can see at the Haemophilia

Centre Directors meeting of 30 September 1980, Dr Bridges was not there -- he's in the list of apologies -- but he was represented by Dr Mayne. If we go to page 7, please, Soumik, bottom half of the page, about ten lines up from the bottom, it says:

"Dr Mayne enquired whether any way could be found of fractionating plasma collected from Northern Ireland. Dr Walford [that's Dr Diana Walford from the Department of Health] said that this problem was being looked into."

So that's where we see Dr Mayne raising the question of fractionating Northern Irish plasma, because there was no facility in Northern Ireland for the plasma to be fractionated and for concentrates to be prepared, although Northern Ireland was able to produce its own cryoprecipitate.

We can then pick the picture up a few months later with CBLA0001294. This is a Department of Health internal document from February 1981 and it is a report for the Advisory Committee on the NBTS, the National Blood Transfusion Service.

The background is set out in the first paragraph:

"As Members know" --

Sorry, the heading is "Pro rata distribution of blood products":

"As Members know, from 1 April 1981 it is intended to introduce a system of pro rata distribution of certain blood products to ensure that [Regional Health Authorities] receive such products in proportion to the quantity and quality of plasma sent to the Blood Products Laboratory (BPL) for fractionation. [Regional Health Authorities] have accepted the principle of pro rata distribution for Factor VIII, Factor IX and albumin containing products ... This paper puts forward for the Advisory Committee's consideration possible arrangements for the distribution of these products."

Then in paragraph 2 it explains the current position in relation to what BPL were producing: currently producing about 14 million international units of Factor VIII used in the treatment of haemophiliacs. The balance of demand is met by cryoprecipitate manufactured by Regional Transfusion Centres and by imported commercial products.

Paragraph 3 sets out the "Present distribution arrangements", so it says:

"In common with other BPL products, Factor VIII is distributed broadly on the basis of an assessment of regional requirements for patients' treatment.

That 'assessment' is based mainly upon the number of haemophiliacs treated within each Region in a given year ... This system is, in effect, weighted to take account of the spread of haemophiliacs throughout the country."

So that was the existing system. And then details are given in the next paragraph of the proposed change in system, "Pro rata distribution":

"BPL will calculate how many [international units] of Factor VIII are due to each [Regional Health Authority] based upon the quantity and quality of plasma supplied."

Then further detail is given in relation to that.

Then we see, over the page, a particular issue in relation to how this is going to impact upon Northern Ireland. So it's the bottom half of the page, "Other 'users'". So it's set out in the top half of the page how it's going to work for the average Regional Health Authority. And then there are certain specific categories set out: Channel Islands, Army, Catholic Children's Pilgrimage Trust, and then Northern Ireland:

"The Northern Ireland [Blood Transfusion Service] currently receives over 1,000 vials a year from BPL."

So that will explain why we do see NHS Factor VIII concentrate appearing in the returns:

"However, the Service [that's the Northern Ireland Blood Transfusion Service] is unable as yet to supply [fresh frozen plasma] and under the pro rata system will not be entitled to Factor VIII. This has been discussed between the Service's Director and Dr Lane, Director of BPL, [Northern Ireland] BTS is expected to increase its production of cryoprecipitate to make up for the loss of Factor VIII supplies from BPL and, in the longer term, is exploring the advantages and disadvantages of transporting [fresh frozen plasma] to BPL or PFC at Edinburgh. ([The Northern Ireland Blood Transfusion Service's] difficulty lies both in freezing plasma and in keeping it frozen on a journey to Elstree or Edinburgh).

"Following discussions between officials of DHSS and the Department of Health and Social Services in [Northern] Ireland, it is suggested that the principle of pro rata be applied to [the Northern Ireland Blood Transfusion Service] in the same way as to [Regional Health Authorities]."

So we see there, sir, no difficulty, it would appear, in terms of production of cryoprecipitate, but

the change to the pro rata distribution system is going to have the effect of Northern Ireland no longer receiving anything from BPL.

If we go to the next page, we can see under the heading "Summary", paragraph 10, the committee's views were then being sought on a number of matters including at 10c4:

"Application of pro rata to [Northern] Ireland ..."

If we just go on two further pages, we just see a table which sets out what is said to be the current monthly allocation. And if we go down to Belfast, which is the -- we see the last two entries, Belfast and Jersey -- the current monthly allocation in terms of vials is said to be 90, and under the pro rata process it will be zero. So it will receive nothing in terms of BPL concentrate.

What was done to address that was an arrangement with Scotland. I want to look at a handful of documents in this regard but, first of all, if we go to a document that summarises the overall position, it's RHSC0000066_024.

So this is just a later document which picks up -- it's called -- it's from 1989 and it's called "Blood Transfusion Service financial position on

baseline funding". If we go to the second page we can see -- under the heading "Blood Products", we can see reference there to blood products being received from the Protein Fractionation Centre in Edinburgh. And then it explains that:

"Prior to 1982 [so prior to the pro rata distribution scheme], most blood products provided through the Blood Transfusion Service were acquired from [BPL] at Elstree free of charge, but since 1982 when the service was transferred to the PFCE [so that's Edinburgh], the Blood Transfusion Service has been required to pay for all products."

So we can see that what resulted, ultimately, was the Blood Transfusion Service in Northern Ireland receiving NHS product from Edinburgh rather than BPL, and in return supplying that to the haemophilia centre.

If we just look at the next page, again before I turn to some of the contemporaneous documents in relation to the Scottish arrangement, under the heading "Supplies to the Haemophilia Centre, Royal Victoria Hospital", what's said there is:

"All clotting agents (Factor VIII, Factor IX, et cetera) are managed exclusively in the Haemophilia Centre, Royal Victoria Hospital, under Dr Mayne, the

Centre Director. All supplies of clotting agents whether obtained from PFCE and routed through the Northern Ireland Blood Transfusion Service, or obtained directly from commercial sources, eg Profilate, Hyate, Feiba, Autoplex, must be delivered directly to the Haemophilia Centre.

"Mr Carville, the Senior Chief MLSO in the Blood Bank ... under the direction of Dr Mayne, is responsible for the ordering and control of all clotting agent supplies."

So, again, very much decisions under the direct control of Dr Mayne. And that is, in fairness, absolutely what she says in her witness statement, that she was the person who was ordering the supplies.

So just to return then to the Scottish picture, if we go to CBLA0001287 --

SIR BRIAN LANGSTAFF: This document is February '89, is it?

MS RICHARDS: Yes, it's a later document. I've referred to it partly because it just gives a later perspective on what happened. It confirms the switch took place.

What's said there --

SIR BRIAN LANGSTAFF: I understood from what you have shown us earlier that from the end of 1984 all the ordering was done through the Blood Transfusion

Service.

MS RICHARDS: Yes, that's what Dr Mayne had said in a document, but that doesn't appear to be what's said here.

SIR BRIAN LANGSTAFF: This is the pre -- end of '84 position, if it isn't the current position.

MS RICHARDS: It appears to be being suggested that it's the current position in 1989. It certainly reflects everything we've seen about the pre-1984 position.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: I think to the extent that there's any lack of clarity or contradiction in the documents, it's probably for the period from '85 through to '88.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: So if we go then to CBLA0001287, you will recall we looked at the report to the Advisory Committee on the National Blood Transfusion Service about the switch to the pro rata system. And we can see this is the meeting of the Advisory Committee on 23 February 1981. It has amongst its observers a Dr Lawson from the Department of Health and Social Services, Northern Ireland.

And then if we go to the second page, halfway down the page we can see a discussion beginning under the heading "Pro rata supply of blood products".

Obviously, we will come back to this, how it impacts upon Treloars, which is mentioned here, and more generally when we explore other aspects of the Inquiry's work. And if we go to the next page, we can see what was decided in terms of Northern Ireland. Paragraph 9d:

"On the question of 'other users', members agreed that ...

"d. the pro rata scheme should apply to Northern Ireland. Dr Lawson explained that the Northern Ireland [Blood Transfusion Service] intended to send plasma (both time-expired and fresh-frozen) to the Protein Fractionation Centre, Edinburgh. This had been agreed by the directors concerned."

So that's how the pro rata scheme is now intended to apply. Belfast will receive its NHS plasma from Scotland rather than from BPL.

If we go to SCGV0000104_134, we can see a letter between Belfast and Scotland. It appears to be between the respective Health Departments of the two countries, 7 May 1981:

"Dear MacPherson ..."

This is someone in the Scottish Home and Health Department:

"Supply of blood products to Northern Ireland.

"I understand you have been aware of preliminary discussions between the Director of the Protein Fractionation Centre in Edinburgh and Dr McClelland of the Northern Ireland Blood Transfusion Service about a transfer of the Northern Ireland source of supply for blood products from Elstree to Liberton. I have received official confirmation from our Eastern Health and Social Services Board, which has administrative responsibility for the Blood Transfusion Service in Northern Ireland, of its wish to pursue this proposal and I am therefore writing to seek your Department's agreement in principle."

He then refers to enclosing a note of the quantities of plasma they are aiming to provide, what they would like to receive. Then it says:

"Subject to agreement being reached, Northern Ireland should be in a position to send its plasma (both time-expired and fresh frozen) to Liberton by October 1981. Because of the 6-month period required to process the raw material, it will be March 1982 before we would receive any finished products. In the meantime I am also writing to DHSS (London) seeking their agreement to the continuation of arrangements with Elstree to cover this interim period ..."

And then there's a reference also to receipt of anti-D product which Liberton is unable to provide.

Over the page, I don't need to go to the detail of it, but those are the figures suggested as to what the Northern Ireland Blood Transfusion Service hope to make available and what they hope to receive on a pro rata basis from Edinburgh.

So that's an arrangement that began in around 1981/1982. There's a further letter which discusses the continuation of the arrangement in '84. That's NIBS0001721, and I'll make this, I think, the last document before we break. It's from a Dr Darragh of the Eastern Health and Social Services Board to Dr Mayne 25 May 1984, and it says in the first paragraph:

"We have recently been monitoring the success of the Blood Fractionation arrangements with the Scottish Health Services."

Just pausing there, May 1984, sir, we're not yet in the heat-treated product territory in terms of what was being received in Belfast.

"We have received advice that there is now a sufficiency of the NHS product to cover all current demand for Factor VIII."

Then it says:

"Over the last few months it has become apparent that there may be a category of patients for whom the NHS product may not be satisfactory.

"You may recall that we embarked on the 'in house' production in response to a number of issues one of which was the major financial outlay on commercial products. At the time there was apparently a clearly defined National Policy endorsed by the profession to move towards self-sufficiency with the implicit assumption that the NHS product would be an equivalent therapeutic substitute. In reviewing the local scene we perceive that there are substantial numbers of people for whom the NHS product does not appear to be appropriate."

Quite why that is said to be the case is unclear.

"Since the policy to which we subscribe through the DHSS is to use 'in house' products and funding has been diverted to underwrite this arrangement, we will require to have substantial clinical evidence to obtain finance for the continued use of the commercial products."

Then the last paragraph on this page, he says:

"Will you please provide us with the names and clinical reasons why the NHS product is not

appropriate to those individuals who you envisage as likely to continue to need the commercial product."

So it's a somewhat curious letter. We haven't traced a response to it from Dr Mayne, I think, but it confirms at least that the arrangement with Scotland was still continuing as at May 1984, and it appears to contemplate, for financial reasons, a desire to move away from the use of commercial concentrates towards a greater use of NHS products.

I think that's probably all that we can glean from that document.

SIR BRIAN LANGSTAFF: It actually says that there's enough NHS product to cover everyone's needs.

MS RICHARDS: Yes, it does, yes. Whether that is relating solely to Scottish or a combination of Scottish and BPL product is unclear. Or unclear from this letter at least.

Sir, there are a small number of other documents to look at on the issue of the arrangements with Scotland but we can perhaps do that after lunch.

SIR BRIAN LANGSTAFF: We'll take a break until 2 o'clock.

(1.03 pm)

(Luncheon Adjournment)

(2.00pm)

MS RICHARDS: Before I deal with the last couple of

documents relating to the arrangements with Scotland there's just one document I wanted to go to in response to a query you raised, which was about the question of whether purchasing responsibility transferred from Dr Mayne to the Blood Transfusion Service. I'm afraid it doesn't really answer the question but it does deal with the issue. It's BHCT0000501, and it's an Eastern Health and Social Services Board memo dated 25 October 1984. It says:

"Supply of Blood Products.

"It has been agreed that with effect from 1st December 1984, all of the blood products as identified on the attached schedule must be obtained from the [Northern Ireland] Blood Transfusion Service and none should be purchased or obtained by a UMG directly. Local arrangements should be negotiated with Dr McClelland, Director, Blood Transfusion Service."

The difficulty is we don't have the schedule and we're not currently certain what a "UMG" is. But it appears there was some local change in arrangements from December 1984. It doesn't appear that Dr Mayne's role was thereby rendered redundant in any sense and she certainly appears to regard herself as being primarily the responsible person for treatment policy

and choice of product.

SIR BRIAN LANGSTAFF: It was this change that I had in mind but you're right, it doesn't necessarily answer the questions.

MS RICHARDS: So then just returning to the position in relation to the arrangements with Scotland, if we could go to LOTH0000005_071, so as well as the overall arrangement that we've seen, which was upon introduction to the pro rata distribution system Northern Ireland started to send plasma for fractionation in Edinburgh and receive the Edinburgh product in return, there's an exchange of correspondence which shows a time-limited other arrangement. This is a letter from Dr McClelland of the Edinburgh and South East Scotland Regional Blood Transfusion Service, to distinguish it from Northern Ireland, to Dr Ludlam. It says:

"Peter Braynion just pointed out to me that we are continuing to receive substantial deliveries of PFC Factor VIII from Belfast. I was indeed aware that you had on one occasion made an exchange with [Dr Mayne] for some commercial Factor VIII which you had previously purchased but I did not know that the process was continuing.

"So far as I know our stock level is low ...

indeed the total stock situation within the SNBTS is at present very healthy and I wonder if there is some specific reason why the exchanges with Belfast are still necessary and obviously I am concerned that there may be some difficulty in our local supply situation which I am not aware of."

Then if we go to Dr Ludlam's reply, it's LOTH0000005_065. It's a letter dated 11 January 1984 from Dr Ludlam to Dr Brian McClelland:

"Thank you for your letter of 30th December, about exchanges of commercial factor VIII with Belfast. The exchange was agreed early in 1983 because at that time SNBTS factor VIII was in very short supply. The first part of the exchange arrived shortly after the negotiations and at the time SNBTS material markedly improved. The material that has arrived recently just completes the exchange. As I understand it, we are now quits with Belfast."

So it appears that, as it were, on top of the overarching arrangement as between Northern Ireland and the PFC in Edinburgh for the supply of plasma for fractionation, there was agreed in 1983 between Dr Ludlam and Dr Mayne, directly, an arrangement whereby Dr Ludlam sent commercial Factor VIII to Dr Mayne and Dr Mayne sent back to Edinburgh PFC

Factor VIII. And the explanation for it is what we see set out there.

SIR BRIAN LANGSTAFF: It's not really an explanation of why it happened but I understand there may have been a shortage in Scotland, an anticipated shortage at any rate, that Professor Ludlam was keen to maintain all his patients so far as he could on locally donated product. That same could not be true of Northern Ireland because there had been a variety of products used; hence his saying, "Well, if you send me back some of mine, I'll give you some of my commercial."

MS RICHARDS: Yes. Whether that resulted in a further spread of different commercial concentrates being used for individual patients in Northern Ireland in 1983 is a matter of speculation but it could have been a consequence of that.

So one can see what Dr Ludlam had to gain from the arrangement, to put it colloquially. It's less clear what Dr Mayne might have had to gain from the arrangement because she was giving up NHS in favour of commercial.

SIR BRIAN LANGSTAFF: Yes, that was the year that quite a lot of Factor VIII, Armour Factor VIII, started to be used --

MS RICHARDS: It was, yes.

"Our calculations indicate that these quantities will provide approximately 1 month's supply for each region and will be despatched to Belfast [and then various Scottish Centres] by Red Star delivery on 10 or 11 December."

Then the reference is there to what would be supplied to Edinburgh and Glasgow:

"Following this initial supply of heated product, plans are in hand to supply quantities of heated product to each RTC equivalent to twice the min/max stock level to take account of the need to replace domestic and blood bank stocks. This phase will commence in the latter half of the week beginning 10 December and should be complete before Christmas, and should enable continuous supplies of heated product to be made available to patients after 10 December."

Over the next page:

"In the New Year, PFC will arrange for non-heated product to be collected from RTCs and I would request you make arrangements for this material to be recalled as widely as possible in preparation for this replacement programme. Unfortunately, we have not achieved regional batch dedication for the initial deliveries although this

SIR BRIAN LANGSTAFF: -- in Belfast. I don't know if that was the product that was sent over or not.

MS RICHARDS: We don't know. At least not from the documentation we've seen so far.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: Just then completing the picture in relation to arrangements with Scotland and moving to the supply of heat-treated products, if we go to it should be PRSE0002675, I think. This is a letter 6 December 1984. It's from Dr Perry and it's addressed to "Transfusion Directors" but it sets out what's going to be supplied in terms of heat-treated product. So it's headed "Heat treated Factor VIII":

"I have learnt today that the first infusions of our dry heated [Factor VIII] were successful in Edinburgh although we are yet to receive the recovery and half life data on the one recipient patients. In the realistic anticipation that this data will be acceptable I have made arrangements for the first batches of [Factor VIII] to be despatched to RTCs [that's Regional Transfusion Centres] as follows."

Then we can see there the reference to Belfast. So there's an anticipated supply of 661 vials of heat-treated Factor VIII from Edinburgh to Belfast. And then in the paragraph below he says:

will be achieved subsequently."

So that was the plan in December. We don't know the precise date upon which heat-treated Scottish product began to be available in Belfast but --

SIR BRIAN LANGSTAFF: That would have been the product which was heat-treated in anticipation that the treatment would remove any HIV -- HTLV-III infectivity, but it had made no expectations of reducing the hepatitis risk.

MS RICHARDS: That's right, sir, and you will recall that this was the subject of some questioning in relation to Professor Ludlam because of -- that was the product that was then used over the next period until a further product became available in Scotland and there was the question as to whether there should have been recourse to the BPL product.

SIR BRIAN LANGSTAFF: Yes, because the Scots were roughly 18 months behind England in introducing a product which was thought likely to reduce, and shown ultimately to reduce, the risk of hepatitis.

MS RICHARDS: Yes. So it would seem from this that certainly in the early part of 1985 -- and you will recall Dr Mayne's completion of that survey for Professor Bloom reflects this -- at least by April 1985, the heat-treated Factor VIII concentrate

that Dr Mayne is using is the concentrate supplied by Scotland. Whether that changed and she was able to access any BPL heated product over the following months or 18 months or so is unclear.

There is then a discussion, and I don't, I think, need to go to all the documents, but there's a discussion in correspondence about the PFC's intended production of their later product, Z8, and there's correspondence which contemplates that Dr Mayne may be asked to assist with the assessment of that in November 1986.

If we go to PRSE0000129, Soumik, and if we go to -- it should be page 39 I think, the long document.

Yes, this is a letter, February 1988, from Dr Mayne to Dr Perry at SNBTS, and it shows -- it picks the picture up essentially from July 1987.

So she says in the second sentence:

"Treatment commenced ..."

That's the Z8 Factor VIII, which was dry heated at 75 degrees for 72 hours, I think.

"Treatment commenced shortly after receipt of Factor Z8 in July of last year. To date some 28 patients have been treated on many occasions with 7 batches. There's only been one adverse clinical reaction ..."

Then there's details of that particular clinical reaction which was someone in the Children's Hospital developing "clinical jaundice and blood results in keeping with non-A non-B hepatitis".

There are later letters -- I don't propose to go into the detail of the individual patient's position, but there are later letters which suggest that that patient in fact may have had an older generation product that hadn't been heat-treated to the same degree, and those documents are referenced in our note.

So by '87, it would seem, a number of patients being treated with Z8, so the --

SIR BRIAN LANGSTAFF: From the middle of '87.

MS RICHARDS: By the middle of '87, yes, by the later generation. Obviously, that 28 patients doesn't represent all of the patients within the Belfast centre.

There is a further exchange of correspondence in '88 about another potential switch between NHS and commercial product between Dr Mayne and Professor Ludlam and, again, it may just be instructive to look at that.

If we start with Dr Mayne's letter at NIBS0001762, this is a letter dated 26 September 1988

which Dr Mayne wrote to Dr Ludlam. It says:

"Thank you both [I'm not sure who the both are] for coming over to Belfast last week. I do think that the meeting was very worthwhile.

"The allocation for Scottish Factor VIII to Northern Ireland is 1.8 million units per annum. After our discussions with [and she identifies three people of whom the third is the MLSO we've seen referred to elsewhere] I feel it would be appropriate and possible, on a short term basis to allocate approximately 1 million units of the Northern Ireland allocation to the Lothian Health Board. In return the Eastern Health Board here should receive the equivalent number of Factor VIII units in the form of Profilate, for use in our Regional Centre."

Then there's a suggested date. And then she says:

"However, I feel that our situation should be kept under close review by both of us, because since we met I have learnt that the supplies of Profilate are likely to be in shortfall by the end of this calendar year. Furthermore complications may arise for this product or indeed a safer product may become available. Therefore it would be unwise to be obtaining more than monthly supplies of Profilate."

And if we go over the page the letter continues:

"I am happy for us to try this arrangement as long as the treatment of the children here and the small number of other patients is safeguarded. I have discussed this with John Carville and in the meantime we will run down our usage of NHS material and gradually change the home treatment over to Profilate."

Then she says this:

"It would be interesting to see the reactions of the patients to this change over and to see if the number of units consumed is reduced."

Then there's reference to there being sludge left in some of the returned bottles which arrived with the MLSO for disposal.

So the proposal is that, again, there will be essentially a swap and some of the Scottish NHS Factor VIII which would have been sent to Belfast will be kept in Edinburgh, and in exchange Edinburgh will provide Profilate to Dr Mayne.

There's one further letter in which this is discussed again --

SIR BRIAN LANGSTAFF: There's also the implicit suggestion there that the patients will not have been asked in

advance. It is going to be given to them and they wait to see what their reaction is.

MS RICHARDS: Yes, there doesn't appear to be any suggestion of an element of choice.

SIR BRIAN LANGSTAFF: No. There's an element of using the patients to an extent as guinea pigs. I don't mean in the sense of having a different treatment but in the sense of having a different product.

MS RICHARDS: Yes.

There's a letter that was written September 1988. There's a letter November 1988 to Dr Mayne to Professor Cash on the same issue at NIBS0001767, where she says this:

"I understand from Dr Morris McClelland and Dr Chris Ludlam that you have been anxious to discuss the present somewhat ad hoc and interim arrangements regarding the exchange of NHS Factor VIII vis-a-vis Profilate. May I explain the situation to you as it has arisen.

"On September 5, 1988, at the Reference Centre Directors meeting in London, Chris Ludlam indicated to me that there would be a shortfall of NHS material in Scotland and that it would be necessary to top up needs with commercial factor VIII. The Alpha product, Profilate, was mentioned. In view of the widespread

discussions regarding alterations in immunological tolerance in multi-transfused patients, I made a suggestion to Chris. There exists in Scotland children and other patients who have only been exposed to the NHS donor population. They have never received commercial concentrate at any rate. In Northern Ireland up until 1985, all patients except children were exposed to commercial factor VIII: therefore I suggested to Chris that it might be worthwhile to consider an exchange basis to enable all patients who had never received other than NHS factor VIII to continue to do. I would be happy to let them have my allocation of NHS factor VIII, barring the needs for the children here and one or two patients who were in the same category as those in Scotland, namely never exposed to commercial material. During the past few years I have used Profilate for replacement therapy during surgery, et cetera, and was happy to make some arrangements which would be beneficial to the majority of patients in both situations, ie Northern Ireland and Scotland.

"Since September various discussions have taken place between other Centre Directors and I understood that there was no bar to this arrangement. It is not envisaged on a permanent basis and indeed, one seeks

to review it, eg its workability, et cetera, in January 1989. It was felt appropriate to try it out until the end of the financial year."

Over the page:

"I'm sorry to learn from Dr McClelland that there may be difficulties in carrying this out. Morris has suggested to me that you would like a letter sent from the Eastern Health and Social Services Board here to the CSA in Scotland, making a formal request for the arrangements to be carried out. I am reluctant to do this as I feel it would appear that I was requesting commercial factor VIII in preference to NHS factor VIII."

Which is essentially exactly what was happening.

"That is not the case. The arrangements were made purely and solely to try and produce the best therapeutic benefit for the most patients. However, it must be said that one or two patients here have a strong preference for the Scottish material and they are balanced by one or two who are delighted to commercial material in the form of Profilate, rather than to receive any donations from Edinburgh.

"I look forward to having further discussions with you as soon as convenient."

So how that was resolved again is unclear, but that was, again, further arrangements proposed between Scotland and Edinburgh and Belfast for an exchange of Scottish NHS material which would be retained in Scotland and commercial material which would be used in Northern Ireland.

In terms, then, of other products that were used during the 1970s or first half of the 1980s, we've seen reference in the annual returns to the use of porcine Factor VIII, and the litigation report prepared by Dr Mayne for the HIV litigation addresses the use of porcine Factor VIII in more detail.

It's CBLA0000072_024. And if we go to page 10, I think, Soumik -- yes.

So we can see in the first main paragraph she refers to animal Factor VIII concentrates, sets out a number of matters of the history in terms of their usage. If we go further down the page, she refers then, in 1981, to:

"... a new polyelectrolyte fractionation process [and we see that referred to in some of the documents as the 'PE process'] for the production of a pure porcine Factor VIII was developed."

She explains it was used to treat a patient with a high responding inhibitor in 1981.

And the reference there is Mayne et al, so used, I think, in Belfast.

"Further extensive experience was reported by Kernoff et al ...

"The porcine material was found to be efficacious to a high degree in patients whose inhibitor was less reactive against porcine VIII than against human VIII. Despite suitability, treatment could not be continued indefinitely, due to the development of refractoriness or the occurrence of reactions. Many of the latter were mild, such as slight chills or the occasionally skin rash but as with other treatments, a few patients developed asthma attacks or anaphylaxis. However, some patients were and are able to use the porcine Factor VIII for home treatment. Its advantages are the lack of known viral transmission and its disadvantages are its limited suitability and the occurrence of side effects."

So that's Dr Mayne's views as expressed in her May 1990 report about porcine Factor VIII, and we saw its use from the annual returns, and there's a further Speywood document -- I don't propose to go to it but again the details are set out in our note -- which record that Belfast was Speywood's largest customer for porcine Factor VIII in 1983.

It's also right to note that obviously it was being used predominantly for inhibitor patients, possibly solely for inhibitor patients, and Dr Mayne records elsewhere that Belfast had a relatively high number of patients with inhibitors. So that may reflect its fairly extensive usage within Belfast.

Sticking with this report, Dr Mayne then goes on to talk about other products. So she refers in the next paragraph to FEIBA from Immuno and Autoplex from Baxter, and she says:

"Many patients do respond to such treatment but it is not effective in all cases."

And again we've seen both of those products featuring on the annual returns.

Then in the next paragraph she refers to DDAVP, and she says, bottom of the page -- towards the bottom of the page:

"This agent has proven to be of value in treating patients with mild to moderate haemophilia or the von Willebrand syndrome. It is administered by slow intravenous injection and a fourfold rise in the level of Factor VIII can be expected above the starting basal level. Such response is sufficient to allow the performance of dental or minor surgery without recourse to plasma products."

Then she sets out some perceived disadvantages. Says it's not advocated in older patients and so on.

Again, we've seen from the annual returns DDAVP is mentioned but comparatively infrequently. The annual returns don't suggest it was being used to a significant extent in Belfast.

She refers in the next paragraph to tranexamic acid. So if we can go further down the page. The paragraph beginning:

"... female patients with the von Willebrand syndrome ..."

Then she refers in the course of that paragraph to the use of tranexamic acid and suggests that that has a place in von Willebrand cases and in mild and moderately affected haemophiliacs as well, particularly in relation to dental care.

So that's the available evidence in relation to other blood products -- sorry, other treatments, non-blood products.

I should then just touch upon what Dr Mayne says in relation to self-sufficiency as a topic. We can pick that up, first of all, again in her litigation report. I think we're already on that document. It's CBLA0000072_024. Yes, it's a long document, so let me just find the right page number.

I think it's probably page 20, Soumik. Go to the next page. Yes.

So under the heading, "The economics of self-sufficiency", Dr Mayne sets out, if you go further down the page, towards the end of the first long paragraph, in the last five or six lines of this paragraph she says:

"Sustaining self treatment was and is costly in terms of Factor concentrate purchase but hospital savings were and are substantial."

So she is suggesting an economic benefit to self-sufficiency. And says in the next paragraph, picking it up three lines down from the top:

"Thus the accrued savings from decreased hospitalisation, from non-payment of social services benefits for patients in gainful employment need to be balanced against the capital and revenue expenditure required to achieve self sufficiency status and the outlay for purchase of Factor concentrates."

Then, over the page, she talks about the stance of the UK Haemophilia Centre Directors at their annual general meetings towards the issue of self-sufficiency.

She says that at the earliest of their annual general meetings, 1969 onwards --

SIR BRIAN LANGSTAFF: Just pause there for a moment.

Just puzzling over the economics there, because what she's referring to, if we go back a page, and looking at the bottom, the study by Schimpf, this requires a patient to be treated. The issue -- economic issue for self-sufficiency is whether the costs of providing it within the nation state are less than the overall costs of bringing it in, but there's no question about not having treatment. In other words, the money you save by having someone fully working is saved anyway. It's not a choice between commercial product or self-sufficient product, is it?

MS RICHARDS: No. I mean, I'm simply reading Dr Mayne's words, sir --

SIR BRIAN LANGSTAFF: No, I know, I'm just commenting on the logic because it just suddenly struck me. But it's not really an argument.

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: However, that's what she's putting out here.

MS RICHARDS: It's the view she was expressing in 1990.

SIR BRIAN LANGSTAFF: Yes. Well, it's a viewpoint which, at the moment, I'm struggling to see that it does actually make a valid point. This part of it.

MS RICHARDS: Over the page she then sets out the

perspective of Haemophilia Centre Directors in relation to self-sufficiency. She talks about it having been reflected on and discussed constantly at UKHCDO annual general meetings. She says that:

"Self-sufficiency was and still is a desirable goal but achievement is easier in theory than in practice."

She says:

"Different problems affected treaters, consumers and producers."

And then this:

"The treaters had difficulty in making accurate forward estimates of the need. Treatment efficacy caused consumer demands to ever multiply."

Then she explains the shift from responding to emergency bleeding episodes through self-treatment programmes, elective surgery and the like.

If we go to the bottom of the page, it refers to the collection of statistics in Oxford and says in the last few lines:

"The figures are not absolute, they do not represent each and every unit of Factor VIII given as treatment in any one year. Inevitably over the years a minority of treatment centres were tardy in submitting data and indeed the submitted figures may

not be precise as on occasions Haemophiliacs were and still are treated periodically outside the recognised Haemophilia Centres, thus, with loss of data to the records. However, they do illustrate the clearcut trends of treatment."

And then she refers to various published estimates from Biggs in 1978 onwards.

If we go to the next paragraph, she talks about other -- so apart from estimation of need, which she's identified as a problem:

"... other problems concerned the producers in the plasma fractionation centres in Oxford, Elstree and Scotland. They concerned source plasma in respect of quality and quantity, the changing technology necessary to improve the purity of product, the availability of manufacturing facilities and necessary organisational changes."

So in the next paragraph she talks about the need to introduce modifications into blood transfusion practice to increase quantity of plasma available.

Then if we go over the page, picking it up in the second paragraph, she refers to the Haemophilia Centre Directors during 1974 expressing further anxiety regarding self-sufficiency, feeling the Department of Health were slow to realise the full

implications of non-achievement of self-sufficiency. Reference to concerns about the scaling up of production.

Bottom of the page, she says:

"Towards the end of 1975 ..."

You will see there, sir, a paragraph number, and there are various paragraph numbers referred to throughout this report. They are references to one version of the Statement of Claim in the HIV litigation which she's commenting on. So she says:

"Towards the end of 1975 ... it was suggested that Scotland could supply more Factor VIII to aid the self-sufficiency programme. However, during prolonged subsequent negotiations it transpired that shift system of staffing would be necessary to render the suggestion operational. Such arrangements were unacceptable to trade union policies, then in operation, thus causing further delays in a possible field of improvement. Other highlighted difficulties were in the collection, transport and delivery of plasma to the plasma fractionation centre in Edinburgh."

You see in brackets that's said to be based upon personal recollections, ie her own recollections, of discussions at the time.

Then in the next paragraph she deals with financial input and says:

"If the organisational difficulties and plasma supply problems were to be set aside, the fiscal element in the achievement of self-sufficiency then becomes the most pertinent problem. If the Department of Health had provided further financial support at an earlier time, would this have accrued significant patient benefit? The reply is probably in the affirmative."

Is her view. She then gives the example of the Netherlands and the overall HIV infection rates there, and notes that 75 per cent of the blood product used there was obtained from domestic volunteer donors.

"In respect of the numbers of Haemophiliacs needing treatment in the [UK], could scaling up of production, et cetera have been achieved sufficiently rapidly to achieve a similar result?"

Then her answer is this:

"Instinctively the treaters of the Haemophiliac patients would feel it to be likely but it is by no means certain."

So whether feeling it to be likely is to be equated with likely as distinct from certain is not entirely clear from this.

And then she says it's recognised that the supply of volunteer donors is not inexhaustible.

So those were Dr Mayne's observations in what was obviously a report, an expert report, prepared at the request of the Department of Health in the HIV litigation.

In terms of her more recent reflections in her witness statement, if we could turn to WITN0736009.

If we could go to I think it's page 59, Soumik. Yes.

So she was asked further questions about her views on self-sufficiency, in particular in light of what she'd said in the HIV litigation report. And at the top of the page you will see she says:

"In the early to mid-1970s discussion rotated around the financial and practical difficulties in upgrading the facilities at Elstree and at Oxford but I do not remember precise details."

Then she says:

"From and around this time self-sufficiency was a constant item on the agenda. However, it seemed to me that haemophilia generally and self-sufficiency in particular was a low priority for Government. As soon as the representative from the Department of Health became knowledgeable and was sympathetic towards the

problems of haemophilia, they seemed to be deployed elsewhere."

Then if we go towards the bottom of the page, she says at paragraph 96.3:

"Supply of factor concentrates became the issue once they [were] commercially available."

And then she says this -- and again, sir, whether this is consistent with what the other documentary evidence suggests is a matter for you, but she says in this statement:

"In order to meet the Centre's need for Factor VIII I endeavoured to procure as much NHS concentrate as possible. There were three sources of NHS concentrate -- BPL at Elstree, Oxford Fraction Centre, and SNBTS Edinburgh."

And then she refers in the next paragraph to the arrangement put in place with Edinburgh.

"In 1982 it was arranged that plasma from [Northern Ireland] donors be sent to Edinburgh SNBTS. An appropriate reciprocal amount of NHS concentrate would be returned to Belfast. Doing the best I can to recall, initially the NHS supply of concentrate was in the order of 10 per cent of the amount used. Over time this increased significantly, but I am unable to be precise. It is true to state that Northern Ireland

never became self-sufficient in NHS concentrate. The aforesaid arrangements were put in place as it was unrealistic to establish a plasma fractionation unit in Northern Ireland."

She then refers in the next paragraph to two documents, both of which we've looked at in the course of the morning.

Then if we go to page 65 and we pick it up in paragraph 104.1, she says:

"Northern Ireland was self-sufficient in the supply of cryoprecipitate at all times. However, supplies of NHS concentrate were never sufficient to meet demand. We received limited quantities of concentrate from Elstree and Oxford, although this was largely on the basis of the good relationship I had with Dr Lane and Drs Bidwell and Grant respectively. From 1982, Northern Ireland had an arrangement with SNBTS for the supply of NHS concentrate from PFC. The amount of NHS from PFC increased in the following years. I am unable to say at this time what proportion of concentrate used in the Belfast Centre was NHS concentrate. The remainder was from commercial concentrates. I would add that I believe the NHS suppliers did an excellent job with the limited resources they had."

Then she was asked in the next question whether she thought a significant contributory factor was a failure to provide accurate and timely estimates of future demand. And of course that was one of the very points she had made in the HIV litigation report. However, her response in this statement is to say:

"I disagree with this statement. I think it is difficult for those not involved at the time to appreciate fully the monumental task of providing estimates. The difficulty of doing so and keeping your own clinical work going was great. I do not believe that I, or other clinicians, could have done more. I consider the estimates were as good as they could be given the variables that inevitably arise in the treatment of haemophilia."

So those are some of Dr Mayne's reflections in 1990 and in 2021 on issues relating to self-sufficiency both generally and as they more directly pertain to Northern Ireland.

Sir, we have in our written note also set out various matters relating to usage of high purity products in the late 80s and early 90s, and then the introduction of recombinant. I'm not proposing to deal with those now orally but we have all the references I think that are relevant set out in our

written note.

The position in terms of recombinant appears to be, in terms of the Dr Mayne era, that by February 1997 children and/or previously untreated patients in Northern Ireland were receiving recombinant.

The more up-to-date position, in the years that followed Dr Mayne's retirement, are dealt with in the statement of Dr Julia Anderson and can be picked up with Dr Benson later this week.

I'm therefore going to turn now, sir, to the knowledge of risk of viral infection in Northern Ireland, and in particular on the part of Dr Mayne and others concerned with the haemophilia centre, both in relation to hepatitis and HIV, and I'm going to deal with those separately and start with the issue of hepatitis.

If we begin with what Professor Bridges says in his statement about his perspective, it's at WITN4569001, and he says, if we go to -- I think it's page 7. He says at the top of the page:

"I became aware of the risks of hepatitis associated with the use of blood and blood products but I am not sure of the exact time. I do not recall being aware of the risks of [non-A, non-B] hepatitis

in the 1970s. I would have thought that I would have been aware of the risk of [non-A, non-B] hepatitis really from the mid-1980s onwards."

Sir, whether that's right or not would be a matter for your judgment but it seems that that may be likely to be a failure of recollection, given everything else we know about knowledge of hepatitis in the course of the 1970s.

In the next paragraph he says his understanding was that:

"Commercial products carried a greater risk [of infection] because they were sourced from multiple donors, including higher risk groups such as drug addicts and others."

So that's Professor Bridges in his statement. Sorry, I should perhaps just also refer -- I think it's probably the bottom of page 11, Soumik. My pagination's gone awry. Yes, bottom of the page.

He was asked about what information was provided to patients. He says -- about risks of infection.

He says:

"I was not involved providing information of this nature to patients. The risk of hepatitis was not widely known during the time I was treating

children with cryoprecipitate [that's the 1960s and 1970s, up to 1979] and therefore there was no discussion with parents about risks."

So that is Professor Bridges' current recollection. If we go to PRSE0002268, you will see these are the minutes of a meeting of Haemophilia Centre Directors in January 1977. If we just go a little further down the list of attendees, we can see that Dr Bridges was there, representing Royal Victoria Hospital Belfast. And if we go over the page, we will see, five names up from the bottom -- no, next page, sorry -- that Dr Mayne was also present at this meeting.

Then if we go to page -- probably page 10 electronically, Soumik. Yes.

We can see the bottom of the page:

"Study of Hepatitis in Haemophilic Patients (Dr Craske):

"Dr Craske presented a written report to the meeting and outlined the findings detailed therein. 371 patients receiving Hemofil had been followed up. Only 1 death was possibly attributable to Hepatitis B. Dr Craske suggested a special study of patients with factor VIII antibodies who may receive large doses of concentrates. Dr Craske said he would like to

continue with his study over the next two years. 'This continued study would include a follow up of patients who had had Hemofil associated hepatitis to study the incidence of chronic sequelae, and a comparison of jaundice associated with NHS Factor VIII and commercial products'."

Then there's a discussion that then continues about difficulties of identifying causal agents and distinguishing between hepatitis B and non-B hepatitis.

So we can see, whatever Professor Bridges' recollection now, and obviously he is being asked about events a number of years following his retirement, this is just one example of a meeting at which he was present at which there was an active discussion about the instance of hepatitis as a result of concentrate usage.

Turning then to Dr Mayne and Professor Nelson, indeed in their attendance at meetings, I'm going to spend a little time, sir, going through the various meetings that occurred throughout the 1970s to pick up on various discussions about hepatitis to see what one could realistically and reasonably expect those clinicians working at the Belfast haemophilia centre to have known and understood.

We can start with HCDO0001014.

So this takes us all the way back to April of 1971 and we can see Dr Mayne in attendance. She's the fourth person there listed. It's a meeting of the Haemophilia Centre Directors held in Oxford.

If we go over the page, we can see halfway down the page Dr Biggs is giving a short summary of a report on the incidence of jaundice and inhibitors in haemophilic and Christmas disease patients treated during 1969, and then there are various actions set out, including requests for directors to send figures about Australia antigen to her.

If we look towards the bottom of the page there's a proposal for publication of the report. Then, over the top of the next page, records to be kept and sent to Oxford, including records of those who develop jaundice.

Then if we go towards the bottom of this page there's a discussion under the heading "Hepatitis and Australia antigen":

"The discussion centred on the incidence of Australia antigen ... and antibody in the haemophilic population and the precautions which should be taken to prevent the spread the infection in the wards and among laboratory staff handling blood samples."

Then there's a reference to Dr Maycock explaining that donor blood would in due course be screened for Australia antigen but in the meantime the possibility of infection remained.

So there's one early discussion which Dr Mayne would have been party to, early 1971, picking up on the risks in relation to hepatitis B.

We can see if we look at just some bits and pieces of correspondence, again issues related to hepatitis B being raised in relation to Belfast patients. So if we go to BHCT0000768, this is a letter from Dr Mayne to the matron at the Royal Belfast Hospital for Sick Children. It's dated 12 January 1973 and it's in respect of a particular patient. And we see from the first paragraph it is someone who commenced nursing studies during August/September 1972 at the Children's Hospital:

"You may remember that he developed jaundice shortly after commencing his preliminary training. This proved to be due to the Australia antigen he probably became infected during the time Intravenous Factor VIII concentrate was given to him in May 1972, to cover his dental extractions. The hepatitis was of a mild nature but the liver enzymes remained abnormal for many months. This in itself was not alarming, but

unfortunately his serum has remained positive for the [Australia] antigen, which means that he is a potential hazard as a source of infection to other people."

We see from the next paragraph Professor Nelson and Dr Mayne are recorded as interviewing him and advising him it would be inadvisable to continue nursing because of the risk of him infecting seriously ill or immuno-suppressed patients.

So there's hepatitis B as a result of Factor VIII concentrates in May of 1972 being considered by Dr Mayne and Professor Nelson.

There's a further letter at BHCT0000757. This is 27 March 1975. If we to the next page -- sorry, the document is in reverse order again.

So we can see the date, 27 March 1975, and it's a letter from Dr Mayne to -- it's probably the GP:

"The above patient, who suffers from severe haemophilia, whose blood contains Australia antigen and who has an inhibitor to Factor VIII, was admitted to the Haematology Unit on 8th February 1975 ..."

And reference there to a bleed.

And then in the next paragraph:

"During this admission, his liver function was assessed to try and discover the damage being caused

by the patient's infective hepatitis."

Then the liver results are there set out. I'm not going to go to the detail of them but we can see there, again, hepatitis B and its effect upon liver function in the active contemplation of Dr Mayne.

If we then look at various other UKHCDO discussions in the course of the 1970s, we start with HCDO0001015. We can see the minutes of Haemophilia Centre Directors meeting 27 October 1972. The list of attendees, we can see the line currently at the bottom of the screen includes Professor Nelson.

If we go over the page we can see in the bottom half of the page there's further discussion about Dr Biggs' survey and the collation of data about the incidence of jaundice. Then if we go two pages further on, we see a discussion about -- report on the progress with a survey of Australia antigen in house contacts and relatives of haemophiliacs. So that's a particular study being undertaken by Dr Ingram.

There is also a reference here -- I don't know if I've got a note of it -- about laboratory precautions to be taken to protect staff. I'll come back to that if I can find it. I think it's in the course of this meeting that it's discussed. If not, it may be in one of the later ones.

So that's -- again, we see hepatitis essentially is an issue on the agenda at almost every UKHCDO meeting in the course of the 1970s. So that's 1972. We can go next to January 1974. That's CBLA0000187.

So we looked at this meeting this morning for different purposes. It's the joint meeting of Haemophilia Centre Directors and Blood Transfusion Directors, 31 January 1974.

If we go over the page we can see the second name listed is Dr Mayne, there recorded as representing Professor Nelson, Belfast Haemophilia Centre. And we can see again, if we look at the next page, further discussion, top half of the page, about the collection of data in relation to jaundice, and Dr Biggs urging directors to return that data to Oxford. And in the second half of the page is a report on the progress of the survey of Australia antigen in the household contacts of haemophiliacs.

We can then pick the UKHCDO meeting up towards the end of 1974, at HCDO00001017. Sorry, HCDO0001017.

So this is the meeting of Haemophilia Centre Directors in Oxford on 1 November 1974. Now it's right to note that nobody from Belfast was in attendance physically at that meeting. Apologies for

absence were received from Professor Nelson, but presumably the minutes would have been circulated at some stage. Albeit I should in fairness -- if we go to the very top of the page -- point out you see the words "Revised July 1975" at the top of the page, and there is some evidence to suggest that minutes were frequently -- sorry, not infrequently sent out some months after the meeting.

So this may not have come to Professor Nelson's or Dr Mayne's attention speedily but you may wish to consider whether you infer that the minutes would have come to their attention at some point.

If we go to page 4, bottom half of the page sees Dr Biggs presenting results now for 1973 in the study of jaundice. And again, top of the next page, Dr Biggs urging directors to make returns of the data.

Then we see this: "Report on Jaundice following treatment with commercial Factor VIII", and there's a report by Dr Craske and this is of the Bournemouth outbreak:

"Dr J Craske of the Public Health Laboratory, Poole General Hospital, made a report on an epidemic of Hepatitis A and B in the haemophilic patients in Bournemouth who had received one particular batch of commercial factor VIII."

Then there's a reference to some patients having hepatitis A, some hepatitis B. Then the next paragraph says:

"Dr Rizza said that since January 1974 there had been 11 episodes of hepatitis in Oxford patients, 9 of these patients had received commercial concentrates but all of them also had NHS concentrate and it was not easy to identify the material which had caused the jaundice. Neither was it easy to determine the incubation periods."

Then there's a discussion about the problems arising from the use of therapeutic materials which might be contaminated with various hepatitis viruses. And I'm not going to go through all of it, but if we go over the page we can see the discussion continuing, and about ten lines down from the top we see Dr Biggs saying:

"... it was not yet proved that the commercial factor VIII was much more dangerous from the point of view of causing hepatitis than other preparations and that she hoped that this material would not get an unnecessarily bad name. It was in fact clinically invaluable while the NHS supply was so limited. Dr Craske agreed with this but said that he felt that a wholly NHS concentrate was likely to be safer when

that was available."

And then there's reference to Dr Craske undertaking to draw up a plan to study the incidence of various types of hepatitis at different centres.

In fact, I found the reference to the laboratory staff in this document.

So there's a discussion at the bottom of the page about the survey of Australia antigen in household contacts of haemophilic patients.

If we go to the next page, picking it up four lines down we see a reference to:

"Dr Waiter [that's the DHSS official attending the meeting] said that the DHSS felt that in laboratories specimens that were likely to be antigen positive should be identified and staff made aware of the risks. This topic had been raised by Professor Nelson who was unable to be present at the meeting."

So it was a particular issue that Professor Nelson from Belfast had raised in relation to the risk of staff becoming infected with hepatitis B.

If we then go to OXUH0003735, we can see these are the minutes of a meeting of Haemophilia Centre Directors on 18 September 1975, and if we look at the list of attendees, if we go a little further down, we

see Dr Bridges present, representing Belfast.

If we then go to page 4, we see the heading there, "Progress of the Directors study of Jaundice and Factor VIII Antibodies". There's presentation of a paper by Dr Biggs looking at statistics from 1969 to 1974, and then the next paragraph refers to there being a full discussion about the incidence of hepatitis and the problem of anicteric cases:

"Professor Stewart thought that the cases of hepatitis should be more precisely defined according to the criteria on which the diagnosis was made. It was felt that future statistics should include LFT [Liver Function Test] results ... though others felt that LFT results were often difficult to interpret ... and not all Centres carry out routine LFTs."

Then if we go just a few lines further down we can see, six lines up from the bottom of the page, a discussion about pool sizes. The influence on the pool size of material used for fractionation was discussed. Professor Ingram said that NHS Factor VIII was derived from pools of 500 to 750 donations whereas the commercial Factor VIII was often derived from pools of 2,000 to 6,000 litres of plasma and that the probability of including an infected donation was greater with commercial Factor VIII. The discussion

then continues.

If we go to page 9, we then see half way down the page a heading, "The proposed pilot study of hepatitis in haemophilic patients":

"Dr Craske said that he hoped to continue his study of hepatitis in patients who had received Hemofil."

Just pausing there. Of course, as we've seen, Hemofil was a main product in use in Belfast, so one might expect that issues about hepatitis in patients receiving Hemofil would be a particular interest to the Belfast clinicians.

There's reference then to Dr Kirk introducing a paper on a proposal to study the incidence of hepatitis in haemophilia patients, and we see details there set out. It's based at Treloars, Newcastle and Oxford.

Then over the page, three lines down it says:

"There was some discussion about the collection of samples for LFT and virus testing. It was felt it was important to arrange for as many tests as possible but it was also felt that frequent testing of patients, particularly those on home therapy, could be difficult. Therapeutic material should be saved for virus testing in case new types of test were

developed."

So that's the 1975 discussions.

If we then just look at CBLA0000312. So this is the paper that was described as being circulated at that meeting. So again, a paper that would have come to the attention of Belfast clinicians on this occasion through Dr Bridges' attendance at the meeting. Then I won't go through the detail of it, but we can see it's the protocol for the prospective study, and it says this in the introduction:

"The transfusion of blood or its derivatives has been linked with the transmission of viral hepatitis for many years."

And then it talks about the discovery of the Australia antigen and matters set out in relation to that. Then it says, just above paragraphs (a), (b) and (c):

"This failure to prevent post transmission hepatitis may be explained by the following hypotheses:

"(a) That correct methods of detecting [Australia antigen] are still not sensitive enough.

"(b) That other known viral agents are responsible ..."

Then:

"(c) That other, as yet unknown viruses, cause a significant amount of post transfusion hepatitis which is supported by the recent work of Feinstone et al."

SIR BRIAN LANGSTAFF: That publication was in the NEJM, New England Journal of Medicine, I think, which, from all the evidence we've heard, is one of the most commonly read reports by clinicians other than the BMJ and The Lancet.

MS RICHARDS: Yes. It was in the New England Journal of Medicine published in 1975.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: As we'll see, there's also a reference in this paper to the Prince publication in a perhaps lesser well known journal, Transfusion and Immunology in 1975, but summarised and referred to in this document.

We'll see that the next paragraph then talks about the particular issue of -- risk issues associated with large pool factor concentrates. Picking it up halfway down that paragraph, it says:

"However, treatment with factor VIII concentrates does expose the patient to a much larger risk of contracting transfusion hepatitis since the fractionated product is processed from donor pools.

Furthermore, commercial factor VIII concentrates are made from very large pools of some 2,000-6,000 litres of plasma from paid donors. An outbreak of both non-'B' hepatitis and 'B' hepatitis associated with concentrates of this type has recently been reported by Craske et al."

That's a reference to the 1975 publication in The Lancet of Dr Craske's write-up of his observations in relation to Bournemouth, and it's the article entitled "An outbreak of hepatitis associated with intravenous injection of Factor VIII concentrate".

So the risk there, both in terms of hepatitis B and non-B hepatitis, also known as non-A, non-B hepatitis, clearly being articulated here.

Then the next paragraph says:

"It has been suggested by Prince ..."

And that's the 1975 publication in Transfusion and Immunology.

"... that recipients of all commercial blood have a ten-fold higher risk of developing non-'B' post transfusion hepatitis [so non-A, non-B] than recipients of all volunteer donor blood."

And that's then the reason that's given for conducting this prospective study of hepatitis.

The rest of the paper then goes on to provide

details about what the study will entail, but the evidence clearly shows that this was circulated at that September 1975 meeting.

If we then go to 1977.

PRSE0001002. Sir, these are the minutes of the meeting of the Haemophilia Centre Directors, 24 October 1977. If we go to page 3 we will see from the list of attendees, bottom half of the page, left-hand column, that we have Professor Nelson from Belfast. The apologies tell us that Dr Mayne was invited but gave her apologies for her absence.

And then there's if we go to -- sorry, Soumik, it's page 7, I think.

Bottom of the page, "Hepatitis Study", we see reference there to Dr Kirk presenting a report on behalf of Dr Craske. So this is now a report in relation to the progress of the study.

And if we go two pages -- I think, Soumik, it's going to be electronic page 19. It's page 10 using the actual page numbers but we appear to have lots of blank pages in. That's it.

Under the heading, halfway down the page, "Hepatitis Working Party", we can see Dr Craske presenting -- sorry, Dr Kirk presenting a report on behalf of Dr Craske, a suggestion about information

being collected regarding patients who are hepatitis B carriers and some directors expressing concern about that.

Then the next paragraph:

"There then followed a discussion of the advisability of liver biopsy in haemophiliacs. The consensus was that each case must be considered individually and in particular that the Hepatitis Working Party should be informed of any such patients."

Of course, the very fact of there being even a discussion of liver biopsies in haemophiliacs would tend to suggest that the risks of hepatitis and the need to examine whether and to what extent there were chronic consequences from hepatitis was something that was taken seriously and regarded as an important issue for discussion.

So that's the 1977 meeting. It's right to note that in the course of 1977 and 1978 the Hepatitis Working Party began to meet on a very regular basis. Now, nobody from Belfast was a member of the Hepatitis Working Party but, again, if we trace through each of the sets of minutes, we see regular reports being made by someone on behalf of the Hepatitis Working Party, usually Dr Craske -- not always, as we see here it was

Dr Kirk -- updating Haemophilia Centre Directors on the work of the Hepatitis Working Party.

We can see if we go to CBLA0000681_009, it seems likely from various documents, including the date, that this was the report that was being discussed in that 1977 meeting. It's described as "Haemophilia Directors Hepatitis Working Party, Hepatitis Associated Commercial Factor VIII 1976", but the report's actually dated 22 September 1977, and you'll see it's referred to as appendix C, and it was appendix C that is referred to in the minutes.

We will see again it updates the Haemophilia Centre Directors, so that would include the Belfast representatives, about the progress of the study of Hemofil, and we can see from the very opening paragraph:

"As a continuation of the study of Hemofil begun in 1974, it was decided to study the incidence of hepatitis after transfusions of Kryobulin in 1976 and to compare this with that due to Hemofil."

So the two commercial products in use in Belfast are here the focus of this study.

If we look at the results:

"Returns were received from 24 Haemophilia Centres."

I'm afraid we've no way of knowing if that included Belfast.

"There was epidemiological evidence that 2/6 batches of Hemofil and 2/16 batches of Kryobulin contained hepatitis B virus. Similarly 4/6 batches of Hemofil and [I think that's 3/17 but it could be 5/17] batches of Kryobulin were associated with cases of Non-B hepatitis."

Then it refers to information about patients. Under the heading "Hepatitis B" a little further down the page it refers to two cases of hepatitis B occurring in patients previously known to have had transfusions of Hemofil.

Then over the page we see the heading "Non-B hepatitis", so non-A, non-B:

"Cases of Hemofil associated Non-B hepatitis have continued to occur, all in patients receiving Hemofil for the first time."

And that is then discussed further.

Then there's reference, you will see the heading further down, "Multiple attacks of hepatitis", so reference to patients having more than one attack of hepatitis. Then if we go to the next page, under the heading "Conclusions", it's said:

"These results indicate it is essential to

continue these studies with the object of answering the following questions."

The first is about the effects of the hepatitis B screening but the second is the number of types and incidence of non-B hepatitis. And then the third is the incidence of sequelae after acute hepatitis, so looking at chronicity, effectively, and chronic effects.

Then detail is given of further projects proposed.

So that's a paper which the documents would tend to suggest would have been shared, was shared with the Haemophilia Centre Directors, at least those attending that meeting which, in relation to that meeting, included Professor Nelson.

Sir, I've still got a number of further documents to look at in relation to issues of hepatitis and knowledge of risk, so perhaps this is a useful moment to take a break.

SIR BRIAN LANGSTAFF: Yes, let's do that and come back at quarter to 4.

(3.14 pm)

(A short break)

(3.45 pm)

MS RICHARDS: Picking up the picture now in 1978, sir,

Dr Mayne was present at the Haemophilia Centre Directors meeting of 13 November 1978. I'm not going to put it up on screen because the minutes only tell us that Dr Craske presented a Hepatitis Working Party report but we don't have the report itself. But we can see that hepatitis was still very much under active consideration and on the Haemophilia Centre Directors' agenda.

If we then turn to CBLA0001028, please. These are the minutes of the Haemophilia Centre Directors meeting in November of 1979. Now, there is no-one physically in attendance from Belfast, Dr Mayne sent her apologies, but again you may wish to consider, sir, inferring the minutes would have been circulated and considered in due course.

If we go in these minutes to page 18, we can see there the heading "Hepatitis Working Party". We see Dr Craske presenting his report. There's reference to some corrections being required to a table and that any directors who wished to have the corrected version of the table should write to him.

Then:

"Dr Craske said that the Working Party had drawn up a new form, Form C3, which they would like Directors to complete for patients who had chronic

hepatitis. The Working Party felt that it was important for the incidence of chronic hepatitis in haemophilic patients to be assessed. There was much discussion regarding the incidence of chronic hepatitis in haemophilic patients, the possible value of liver biopsies and the type of information which Directors would be willing to give to the Working Party."

Then there's a discussion further down the page about attack rates. Then, top of the next page, picking it up four lines down:

"It was agreed that the Working Party would produce a new two-part form on which Haemophilia Centre Directors could report cases of chronic hepatitis."

So again we see the question of the incidence, nature and extent of chronic hepatitis being one of the central issues under consideration by the Haemophilia Centre Directors.

If we then turn to HCDO0000406, this is the Reference Centre Director meeting 22 September 1980. If we go a little further down, we can see it says in paragraph 1:

"Professor Bloom welcomed Dr Elizabeth Mayne who was attending a Reference Centre Directors meeting

for the first time as Director for the Northern Ireland Haemophilia Reference Centre."

So this is her first attendance as a Reference Centre Director.

If we then go to page 5 we can see that the Reference Centre Directors discuss reports from the Working Party chairman, and they start with the Hepatitis Working Party.

"Dr Craske presented tables outlining the results which the Working Party had obtained over the last year."

And then there's a discussion about pool sizes, relative pool sizes at Elstree and Oxford, and he thought that was relevant:

"The plasma pools obtained from each batch of Elstree material was made from approximately 3,500 donors whereas the Oxford material was made from plasma pools from approximately 500 donors."

Dr Craske refers to a proposal to apply to the Department of Health for a grant to undertake a prospective study in Oxford regarding mildly affected patients and patients who were receiving concentrates.

Then if we go a little further down, so we see the rest of the page, we can see four lines into the

last paragraph:

"Dr Craske said that there had been a poor response from Directors to the request for information about patients thought to have developed chronic hepatitis and he said that he proposed to ask the Directors at the annual meeting in Glasgow to send in as soon as possible information about all patients who had shown abnormal LFTs for six months or more. Dr Craske said he was awaiting the results of the biopsy studies which were currently being undertaken in Sheffield and at the Royal Free Hospital."

This is obviously two years further on from the publication of Professor Preston's first set of biopsy studies in 1978.

"There were also further studies underway in Oxford particularly with regard to patients who had received only Oxford Factor VIII concentrate. Manchester ... setting up similar studies. Dr Kernoff said that the biopsy studies in Sheffield and the Royal Free were getting underway ... About forty patients ... studied so far. Professor Sheuer would give a preliminary report on the findings at the Glasgow meeting."

Of course, sir, we know the Glasgow symposium took place in September 1980. We've looked at that

with other witnesses.

Then reference is made by -- sorry:

"Dr Preston gave some details of the results ... found in Sheffield. Dr Craske said in America it was found that approximately 5 per cent of their donor population were carriers of Non-A and Non-B virus. No sensitive test to detect this virus was likely to be available for a year or two. There were therefore problems in interpreting the Non-A and Non-B hepatitis ... The patients who were thought to have suffered from Non-A and Non-B hepatitis had very mild clinical symptoms."

That's presumably in the acute stage, although it's not entirely clear.

So that's the discussion of Dr Mayne's first Reference Centre Directors' meeting in relation to hepatitis.

Then if we just pick it up, last of all in terms of the sequence of UKHCDO meetings, in 1981, if we go to LOTH0000012_122, this is a meeting of the Reference Centre Directors, September 1981. Dr Mayne was present.

If we go to page 7, under the heading "Hepatitis Working Party", bottom of the page, we can see:

"Dr Craske presented the results of the Working Party's activities during the last three years. The cases of hepatitis reported by Haemophilia Centre Directors, had been mild in most instances and no acute case in recent years had resulted in death."

So that's dealing with acute cases. Then he goes on to consider chronic:

"Several questions were still to be answered regarding hepatitis in haemophiliacs. One was whether acute attacks of hepatitis in haemophiliacs would result in chronic liver problems in a few years' time."

Then there's reference to the studies in relation to Kryobulin and Hemofil. And then over the page, I'm not going to go through it detail, but there's a discussion about the so-called reduced hepatitis or hepatitis-free products that then takes place and is recorded on that page.

Then finally, for present purposes, CBLA0001466. This is a report for the Haemophilia Centre Directors meeting on 9 October 1981. It's Dr Craske's report. If we go over the page, it's a report of the Hepatitis Working Party, and if we just look by way of example -- so there's reference to the studies in the first section under the heading

"Hepatitis Surveillance" and then under the heading "Complications":

"The question of the significance of chronic hepatitis observed by several groups of workers in liver biopsies of patients with chronically elevated transaminases is still unanswered. Current investigations are attempting to relate the results in different groups of patients to their transfusion history, and there is strong evidence that different types of non-A, non-B hepatitis are related to different products ... Most patients in this group are still entirely symptomless. The natural history of the disease in non-haemophiliacs is still not known, though there is some evidence to suggest that some patients with liver biopsy appearances of chronic active hepatitis have a better prognosis than patients with similar histology on liver biopsy whose liver disease is considered to be of non-viral origin. There have been no further deaths directly or indirectly attributed to liver disease in the past year."

Then there's a discussion of the incidence of hepatitis due to commercial versus NHS associated hepatitis.

That's a bit of a whistle-stop tour, sir,

through some of the materials and discussions being considered by the Hepatitis Working Party.

In fact, there was one report I should also have gone to which I omitted. It's a report from 1979 of the Hepatitis Working Party, HCDO0000135_023.

So we'll see in the first paragraph it refers to the working party having held three meetings during the year:

"Most of the business consisted of the organisation of projects related to the hepatitis surveillance programme and to the study of chronic liver disease in patients at the Oxford Haemophilia Centre."

If we go to page 5, under the heading "Mortality":

"No further fatalities directly due to acute hepatitis have been reported. One patient had acute [non-A, non-B] hepatitis followed by persistent raised enzyme levels in 1978. He died of a retroperitoneal haemorrhage, post mortem was refused but it is possible that his hepatitis indirectly contributed to his death.

"A further patient at Oxford who died of causes unrelated to liver disease was found on post mortem to have portal cirrhosis ..."

It's recorded there hepatitis B antigen negative:

"We will be interested in any further cases where specimens of post mortem liver can be obtained from haemophiliacs, to collect further evidence of the prevalence of chronic liver disease. The preliminary results of the patients at Oxford so far studied for evidence of chronic liver disease are given in Appendix I ... 70 out of 174 patients ... had persistent transaminitis but only [that's the word used] 20 of these so far have been found to have clinical evidence suggestive of chronic liver disease."

If we omit the word "only", we can see 20 out of 174 patients --

SIR BRIAN LANGSTAFF: That's 30 per cent.

MS RICHARDS: Yes, found to have clinical evidence suggestive of chronic liver disease.

There are more detailed discussions about various studies and non-A, non-B hepatitis in this document, which, again, were circulated for the purposes of I think the November 1979 meeting of Haemophilia Centre Directors.

We can see then the consideration being given at the Haemophilia Centre Directors' annual meetings

to issues relating to hepatitis. If we turn to material authored by Dr Mayne herself and we start with her HIV litigation report, CBLA0000072_024, and if we go to page 14, this is a section of Dr Mayne's litigation report headed "Hepatitis and/or other viral infections". It's detailed, and I won't go through all of it but, if we can pick it up at the bottom of this page, she says:

"Transfusion associated hepatitis was recognised with increasing frequency following the introduction of plasma and plasma derived products for the treatment of Haemophilia."

Then I'll skip over the next sentence which relates to a paragraph in the Statement of Claim:

"The Haemophilia physicians of the United Kingdom addressed the problem constantly during the early years of treatment, from 1967 onwards and they continue to do so today."

If we go to the next page, she then sets out certain thoughts as regards the risk of hepatitis from cryoprecipitate, and says, picking it up four lines down:

"Previously the latter [that's cryoprecipitate] in paragraph 16(b) [again that's a reference to the Statement of Claim] is stated to have far smaller

risks of viral transmission, being prepared from single or small volume of donors. Relatively speaking the statement is accurate ..."

So she appears to be accepting it has far smaller risks of viral transmission but then she observes:

"... it was the occurrence of cases of jaundice in just such treated patients that formed part of the first [UK] Survey of Hepatitis ..."

And then she provides further detail in relation to that.

Then if we go over the page, we see she refers, about five lines down in that first paragraph, to work by Mannucci in 1975 and Levine in 1977 describing:

"... a high prevalence of abnormal liver function tests amongst multi-transfused haemophiliacs, but the significance of their findings could not be determined at that time. The patients were clinically well."

There's then a discussion about hepatitis B and the introduction of donor testing in the early 1970s.

So if we then go on to the next page, please, and pick it up in the bottom half of the page, Dr Mayne then refers to Dr Craske's 1975 documentation of an outbreak of hepatitis in the United Kingdom, so

that's the Bournemouth outbreak, I think:

"... caused by 3 out of 4 batches of American origin Commercial Factor VIII concentrate ... 4 cases of Hepatitis B and 7 cases of short incubation or non A non B hepatitis. Two patients developed both forms of the disease. A total of 9 out of 18 patients became ill -- a 50 per cent attack rate. It was concluded that commercial concentrate should be reserved for the treatment of life-threatening bleeds or for covering major surgery."

So Dr Mayne is here setting out these various reports. There's no suggestion in this document that Dr Mayne is asserting that this is material that would be unfamiliar to haemophilia clinicians. She doesn't provide her own observation on the Craske recommendation of limiting commercial concentrate to major surgery or life-threatening bleeds.

If we go over the page, in the first main paragraph she says:

"The possible significance of asymptomatic hepatitis became apparent by 1978 when structural abnormalities of the liver were described in patients."

The reference there, at footnote 27, is to an article in the New England Journal of Medicine in

1978 by Spero, Lewis and others called "Asymptomatic Structural Liver Disease in Haemophilia". She says:

"There was histological evidence of chronic active hepatitis and cirrhosis. The findings were thought to be related to the multi-transfused nature of the patients and also the possible effects of the persistence of virus within the liver cells."

Et cetera.

Then she refers to similar histological abnormalities being described in haemophiliacs with evidence of non-A, non-B hepatitis by Aledort, 1985, and Hay, 1985, and she refers to Dr Preston's work in 1988. I'm just going to check that that's right.

Yes. Sir, that is an article published in 1988, but of course we have also Dr Preston's 1978 work.

Then she says in the bottom half of that page:

"The exposure risk for non A non B hepatitis was difficult to determine as prior to 1989 there was no marker test available for its detection. The diagnosis was established on exclusion of other infection and by abnormalities of liver function tests."

So she appears there to be suggesting you could still make a diagnosis of non-A, non-B hepatitis by

reference of excluding other causes and looking at liver function test results. Then she refers to in 1984 a finding about non-A, non-B hepatitis, and says it was "difficult to ascertain the true risk of infection from non A non B hepatitis".

Then if we go over the next page, she says in the second line:

"It would seem ... that haemophiliacs in the UK being exposed to both home produced and commercial Factor VIII would have a high infection rate. This has been found to be the case ..."

Then she refers to the Fletcher paper, 1983.

There's then a discussion, bottom half of this page, about the incidence of hepatitis B infection decreasing. Then halfway through that paragraph she says:

"The awareness of the long term risks of non A non B infection evolved gradually. It is evident that all products were implicated to some degree regardless of plasma source."

Over the page she then says this:

"At all times the risk benefit ratio of treatment versus non-treatment [so that's the choice that's posited as opposed to treatment with concentrates versus treatment with cryoprecipitate or

lots of treatment versus modest amounts of treatment or any other alternatives] had to be applied to patient care."

Then this:

"The patients themselves became aware of the risks of hepatitis during the mid-1970s."

The evidence she puts forward to that is the World in Action documentary:

"In particular, after the 1975 outbreak in the [UK] a World in Action television programme dealt with the problem in detail. During the course of the screening, one patient was asked if he had been 'put off' using his Factor VIII concentrate. He replied that he had used it again immediately he developed a painful bleed into an elbow joint."

Then she asserts this:

"The majority of patients were of the same opinion -- freedom from pain was of paramount importance to them. Craske recommended a return to the use of cryoprecipitate for routine treatment [that's his 1975 Lancet article], but by that time a majority of patients were well established in self injection programmes. Unfortunately it was impractical for home treatment. It was practical for the treatment of patients not previously treated as

they were at special risk of hepatitis, also for mildly affected patients, children and those suffering from the von Willebrand syndrome. A policy adopted by many and recommended by the UK Haemophilia Directors ..."

And then she makes reference to some matters which I don't think make particular sense unless we compared them against the Statement of Claim in the HIV litigation.

So you'll see there, sir, assertions that the majority of patients were of the opinion that they weren't put off using concentrates. The evidence from that -- well, no evidence is given other than a reference to one patient in the World in Action programme.

You will know, sir, from the evidence you have heard and read from patients and their families that the thrust of that evidence is that patients were not routinely informed of hepatitis risks posed by blood products prior to their use and, if that's right, weren't then given the ability to make an informed choice. Obviously those are matters of fact that you will have to consider and resolve.

There's one further document authored by Dr Mayne before I look at what she says in her

statements to the Inquiry. It's at WITN0736011. It's not dated but it is, we understand, authored by Dr Mayne. She says under the heading "Historical":

"The occurrence of jaundice after introduction of human plasma into the body was first noted well over 100 years ago in German shipyard workers ... vaccinated with a human lymph-derived vaccine and later further described during the Second World War in British soldiers inoculated using multi-shared syringes. In 1943, Beeson reviewed this information and described other patients suffering what was then called 'homologous serum jaundice'. This condition was further reviewed by Spurling et al in 1964, who recognised the increased risk of pooling blood plasma for infusions into patients."

Then there's a short discussion of hepatitis A. Then we see hepatitis B. She says:

"This form of hepatitis is the one described as homologous serum jaundice by Besson and it has a long incubation period of up to six months and is termed hepatitis B ..."

Then there's reference to the discovery of the Australia antigen and the introduction of tests.

And we can see in the last sentence on that page:

"In the early 1970s it was appreciated that the prevalence of hepatitis B was increased both in drug addicts and in prison inmates."

Then if we go over the page, we can see the heading "Non-A non-B Hepatitis", and it says this:

"In 1974, Prince et al first noted a large proportion of post-transfusion hepatitis patients did not have any evidence of the B hepatitis virus. They postulated that there could be other transfusion-transmitted hepatitis virus(es) Type C. In 1974 Alter and colleagues confirmed these findings and from then on the term 'non-A non-B hepatitis' was used."

SIR BRIAN LANGSTAFF: Just a question there on the basic facts of that. In the Nobel prize citation, Alter was one of the laureates, was he not?

MS RICHARDS: I can't remember, I'm afraid, I'm ashamed to say, sir.

SIR BRIAN LANGSTAFF: Well, I have a feeling that the citation talks about 1972 as being the first bit of research, but that can be checked.

MS RICHARDS: That can be checked, yes.

The Prince and Alter reports are part of the material that we've looked at on a number of occasions.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: And, of course, they contain expressions of view as to the potential serious nature of -- or chronic nature of non-A, non-B hepatitis.

Then this article or report continues:

"There appeared to be several types of non-A non-B hepatitis; the type which has a short incubation period ... and some which have a longer incubation period ... the clinical picture of non-A non-B hepatitis compared to hepatitis B tends to be mild. Very [infrequently] the infection is" --

SIR BRIAN LANGSTAFF: "Very frequently".

MS RICHARDS: Yes, sorry.

"... very frequently the infection is totally symptomless and may only be detected by blood tests of liver function. The most usual test is of a substance known as transaminase. A persistently raised transaminase known as ALT, used to be presumptive evidence of hepatitis in multi-transfused patients."

Then she says this:

"The risk that non-A non-B hepatitis could progress to chronic hepatitis was known in 1977 but the full significance ..."

And perhaps the word "full" in itself is of significance:

"... of its effects was not appreciated, elaborated and investigated until the mid to late 1980s."

Then she deals with the isolation of hepatitis C itself and its naming of such and the development of tests.

We can, I think, skip over what's said about hepatitis D. If we go to the next page, it says:

"Transfusion associated hepatitis was recognised with increasing frequency following the use of FFP and plasma derived concentrates, produced for the treatment of all types of haemophilia. The haemophilia physicians of the [UK] constantly addressed the problem from 1967 onwards, culminating in the establishment of the United Kingdom Haemophilia Directors Hepatitis Working Party. It was instituted in 1977 under the chairmanship of the virologist, Dr John Craske."

She then talks, in the next paragraph, in the early 1970s about hepatitis B infection giving rise to the greatest concern.

Then if we go into the next paragraph, we can see, picking up in the third line, there's reference to Mannucci's work in 1975. Then if we go to the next paragraph, reference to the 1979 Hepatitis Working

Party report. So these are, in terms of the UKHCDO, some of the materials that I've just shown you, sir, and it would appear to confirm that this was material known to and available to Dr Mayne at the time.

So she refers to the report of 1979 with an increase in the proportion of non-A, non-B hepatitis reported in patients with mild coagulation defects receiving concentrate for the first time. Then she refers to the Hepatitis Working Party's report for '82/'83.

Then, if we go over the page, she quotes from a paragraph entitled "Prospective studies of hepatitis in infrequently treated haemophiliacs". I won't read out the quote but if we go to the paragraph beginning:

"The report confirmed that patients remained at risk from developing non-A non-B and from hepatitis B infection, the latter despite donor selection and the patients were being infected regardless of the source of their replacement treatment."

There's then a discussion about hepatitis B vaccination and then she goes on to consider the impact of the AIDS epidemic. I'll be coming to look at AIDS tomorrow.

But if we go to the next page, the final paragraph, she says this about Northern Ireland:

"It was estimated in the Northern Ireland Haemophilia Centre that 112 patients had been exposed to the possibility of virus infections following receipt of replacement treatment."

She then gives the number in relation to those who developed HIV, 16, which I'll come back to tomorrow.

"Seventy-six of the 112 developed hepatitis, an incidence of 72 per cent. In some Centres in the United Kingdom, the incidence was as high as 95 per cent. The rationale for these figures being slightly better than in other Centres in the UK was because it was a policy within the Centre that patients, as far as possible and practicable, should receive only product from one source."

Then she gives here her rationale for that:

"This was because it had become realised that using concentrate prepared from many different, large pools of plasma were likely to be more infective. The rationale was sound but the results were only partially effective."

So it is said there, it would appear, that the underlying treatment policy in relation to trying to use one source of product was on safety grounds, in terms of risks of viral transmission.

Obviously, it will be a matter for you, sir, to consider all the material and consider whether you accept that that was the reason.

I want to come, finally, then, in relation to knowledge of risk of hepatitis -- we'll look in more detail tomorrow at some of the information that was then given and the way in which testing was undertaken and so on, but on knowledge of risk to what Dr Mayne says in her witness statements.

So if we can start with WITN0736007, this is a statement made in response to made by Dr Mayne in response to the evidence of patients or relatives who had given evidence to the Inquiry. If we just look at a couple of passages, bottom of this page, Dr Mayne says this in paragraph 2:

"During the 1970s, both [that's the two patients she's talking about] were commenced on Home Treatment. In accordance with the Centre's practice, at review appointments bloods were taken to test for anaemia and the presence of an inhibitor. Liver function tests were also performed because of my apprehension about the adverse effect of prolonged IV treatment."

So she says there in terms: the reason for undertaking liver function tests from the 1970s

onwards was because of concerns about adverse effects of treatment.

Then in this statement, if we go to the last page, picking it up in paragraph 13, second line, she says:

"... I had observed these abnormal liver function tests for so long without there being any apparent clinical ill effects, that I think I could have been lulled into a false sense of security. I am not at all sure."

That would appear to suggest, in any event, that Dr Mayne was observing over a prolonged period of time in her patients abnormal liver function test results.

SIR BRIAN LANGSTAFF: But this is talking about 1995.

MS RICHARDS: It is, but I think she is probably making a more general observation. But yes, absolutely. She is there suggesting that in 1995 the significance of hepatitis C, as it was then known and had been known for several years, was not fully appreciated by her.

SIR BRIAN LANGSTAFF: She is responding to a comment that she didn't spell out some of the serious consequences to the witness, and she's saying, "I didn't do that because I didn't realise there were any."

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: I'm --

MS RICHARDS: Paraphrasing but, yes.

SIR BRIAN LANGSTAFF: -- paraphrasing.

MS RICHARDS: Yes. I'll deal with the question of what information was and wasn't given to patients in a little more detail tomorrow, but you are absolutely right, sir, that is in effect what's being said here. But we also see apparent observation of abnormal liver function tests over prolonged periods of time.

Then if we go to WITN0736001, this again is a statement in response to criticisms by -- or evidence given by former patients. And if we go, please, to page 11, and we look at paragraph 5.2, this is looking at an earlier period, 1976, and she says in the second sentence:

"At that time, treatment was considered to be both effective and safe."

Again, the consistency of that statement with everything else that we've looked at about hepatitis risks will be a matter for you to consider, sir. There were few facts available --

SIR BRIAN LANGSTAFF: That was the same time as she was saying that those people who had watched the programme in 1975 recalling the risks, they knew all about the risks.

MS RICHARDS: Yes, and were then taking an informed decision to carry on with their treatment. Yes, that is what she said in the report that we looked at.

SIR BRIAN LANGSTAFF: Yes. Somehow I have to reconcile those two rather different views.

MS RICHARDS: Yes, that is a task for you, sir.

Then we see in the third line:

"There were few facts available regarding viral infections at this time, apart from the historical and rare transmission of Hepatitis B."

Then she refers to abnormal liver function tests being under constant consideration by the Hepatitis Working Party. Hepatitis C not a recognised entity at this time. Well, that, as a matter of fact, is obviously correct.

Then this:

"Risks of viral infection were discussed at the hospital clinic and at the annual patient meetings held in Craigavon Area Hospital each November."

Those meetings I think are referenced by Dr Mayne in one of her other statements as well. Again, the evidence you have heard from individuals has been to the effect, in the vast majority of cases, that information about risks of non-A, non-B hepatitis was not shared with them, and so that will be an issue

that you will need to consider.

Then just dealing still with this --

SIR BRIAN LANGSTAFF: I don't quite see how the risks of viral infection could exist for the purposes of discussing it at the hospital clinic and at the annual patient meetings in Craigavon each November with the facts that in 1976 it was thought safe --

MS RICHARDS: And there being --

SIR BRIAN LANGSTAFF: -- deciding a very different period of time.

MS RICHARDS: Yes. Yes, on the one hand: it's safe, few facts available. On the other: risks were discussed with patients. There is undoubtedly a tension between those two.

If we go two pages further on in this statement, paragraph 6.2, Dr Mayne says this, picking it up towards the end of the first line:

"... up until the Hepatitis C virus was identified in 1991 no one really knew what to expect. Gradually information evolved, different subtypes were identified and clinical symptoms of fatigue were more marked in some than others. Always I had an ominous feeling about the virus ..."

And then she refers to a haemophilia weekend arranged in 1995.

So, again, maybe a tension between saying "As late as 1991 no-one really knew what to expect", and at the same time the broader point made in the HIV litigation report that the risks were well known to patients.

Then finally for today I think, or at least in terms of the witness statements, WITN0736009.

If we go to page 20, bottom half of the page, Dr Mayne says this in paragraph 22.1:

"The possible transmission of viral hepatitis through blood transfusion, plasma infusion or the infusion of plasma derived products has been well known for a long time. I first learned of it as an undergraduate in the 1950s."

Then there's reference to what was required for the MRCPath and haematology and the requirement to spend time within the Blood Transfusion Service.

She says:

"During this time, in my case the topic of transmission induced infection was dealt with in detail."

Then she refers also to there being post graduate courses and informal discussions with NIBTS and virologist colleagues.

If we go further down the page:

"Between the late-1970s and the mid-1980s, there was increasing evidence that [non-A, non-B] hepatitis was not as benign as had been thought but could progress from chronic persistent hepatitis to cirrhosis. It is important to stress that it was an evolving picture."

Then if we go a little further down the page to paragraph 24.1, she says:

"I was aware that there was a higher prevalence of [non-A, non-B] infection associated with commercial concentrate compared to NHS concentrate but the latter also presented a significant risk of viral infection. An important factor in transmission is the potential size of the donor population in each category."

Then, over the page, she says, in paragraph 26.1:

"By 1972 my knowledge of the viral transmission of Hepatitis B and [non-A, non-B hepatitis] was incomplete as it was with all my colleagues.

"Hepatitis B transmission remained a constant risk. Thankfully, in reality, in the haemophiliacs in Northern Ireland it was almost non-existent. To the best of my recollection only two sub-clinical cases were ever detected in Centre patients. However, it was necessary to maintain vigilant testing."

Then she refers to an article in the Ulster Medical Journal, which I'll go to in a moment, and says that that conflicts with her recollection.

Then in 26.4 she says:

"In respect of [non-A, non-B], the situation remained perplexing for almost twenty years. This was evidenced by the persistence of abnormal liver function in treated patients. Although one knew there was ongoing virological research on a worldwide basis, the lack of identification of a causative agent was a constant worry. Not all colleagues expressed an equal degree of concern. It was suggested that I stop testing if it was so upsetting. I took the opposite view and continued."

Then she says in the next paragraph:

"Gradually, knowledge progressed, liver histology was identified and in 1991 Hepatitis C was identified. It has proved to be a complex and deadly virus, possibly in keeping with its long prodromal phase."

SIR BRIAN LANGSTAFF: Just focusing on those last few words, starting "possibly", this is a suggestion that where an infection has a very long period before symptoms are manifested, they're all the worse because of it?

MS RICHARDS: Yes.

SIR BRIAN LANGSTAFF: Yes.

MS RICHARDS: Just top of the next page, the report that we looked at a few minutes ago about hepatitis, you'll see what it is in paragraph 26.6, an extract from a medico-legal report that Dr Mayne wrote in 2000 or 2001. So that's the document we looked at a moment ago.

SIR BRIAN LANGSTAFF: That was the report for the HIV litigation, wasn't it?

MS RICHARDS: No. There's the long report in italic text which is the HIV litigation report, but we looked a few minutes ago also at WITN0736011.

SIR BRIAN LANGSTAFF: Ah, yes. That's the one you say was undated?

MS RICHARDS: Yes. So that's that document.

SIR BRIAN LANGSTAFF: That's that one.

MS RICHARDS: That's been produced to the Inquiry by Dr Mayne, and she tells us in her witness statement it's an extract from a medico-legal report she wrote in 2000/2001, so it confirms authorship and gives us data or information about when it was produced.

There are then just, I think before finishing today, two further documents on the issue of hepatitis. The first is the Ulster Medical Journal

article on hepatitis B incidence that she refers to in her witness statement, WITN3082021. It's an article headed "Hepatitis B virus infection in Northern Ireland 1970-1987". And I can pick it up in the "Summary":

"In the 18 years between 1970 and 1987, 504 patients were found to have hepatitis B surface antigen ... in their blood. Acute hepatitis was present in 184 patients and six died ... The annual incidence of acute hepatitis B virus infection in Northern Ireland was about one quarter that of England and Wales."

Then if we go to the bottom of the page, we can see under the heading "Patients, materials and methods", that:

"Testing for hepatitis B surface antigen began in the Regional Virus Laboratory in 1970 in blood donors required for the Renal Unit, Belfast City Hospital."

Further information is then given about the testing process.

If we go to the third page, we can see a table, "Categories of patients infected with hepatitis B virus".

The second category is "Haemophiliacs", and we

can see there 11, that's the number with acute hepatitis. Deaths in brackets, so 1 fatality. And then there's also 8 who had received multiple transfusions, that would be non-haemophiliac transfusions.

Then we go to the next page, halfway down there's a heading "Blood and blood products transmission", and we see the information relating to haemophiliacs:

"Acute infections occurred in 11 patients between 1972 and 1982 after receiving blood transfusions, cryoprecipitate or factor VIII, and one patient died aged 51 years."

Then there's reference to multiple transfusions:

"Acute infections took place between 1970 and 1980 in eight patients who had received multiple transfusions after surgery."

So I think that's all one needs to look at in that article.

Then finally WITN0198002, please. This is a letter from Dr Mayne in March 1984. If we look at the text of the letter, it provides information about a mildly affected haemophiliac, and we can see in the second paragraph Dr Mayne saying this:

"... a mild haemophilic of this type should be treated with cryoprecipitate or NHS factor VIII and not commercial freeze-dried factor VIII concentrates. This precaution is to avoid the development of non A non B hepatitis in mildly affected patients."

So a clear understanding of the risk of non-A, non-B being articulated in this letter in 1984.

Sir, those are the documents that throw some light on knowledge of risk of hepatitis amongst Belfast clinicians in general and Dr Mayne in particular.

Tomorrow I'm going to undertake a similar exercise in relation to knowledge of risk of HIV and then turn to consider the process of testing patients for HIV and then for hepatitis C, and patients being informed of their diagnosis, so the procedure that was adopted, and the adequacy or inadequacy of the information provided to them.

SIR BRIAN LANGSTAFF: Yes. Thank you very much. Until 10.00.

10.00 tomorrow.

(4.34 pm)

(Adjourned until 10.00 am the following day)

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