

Friday, 11 December 2020

(2.00 pm)

PROFESSOR GORDON LOWE, continued

SIR BRIAN LANGSTAFF: Once again, in case there is anyone who is watching who has not been watching for the last few days, we (that's counsel, Ms Richards and myself) are in Fleetbank House, a large room, largely empty, with three members of the legal team, three members of the Inquiry staff, including Mary who does the swearing in, and Soumik, whose job is to make sure we all see the right document at the right time.

You, professor, I imagine are still at home?

A. I am, sir.

SIR BRIAN LANGSTAFF: And your solicitor and counsel are elsewhere, as are other counsel for other recognised legal representatives. Thank you very much.

We have I think about 100-odd people watching again, professor, so that's who you are talking to as well as directly to us.

Further questioned by MS RICHARDS

MS RICHARDS: Professor Lowe, I want to ask you next about testing for hepatitis C and the arrangements that were made at the Glasgow Royal Infirmary in that respect. I want to look first with you at two minutes of meetings and then ask you to tell us about the

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process.

The first minute, Soumik, is HCDO0000271\_014.

If we go to the second page, we will see these are minutes of a meeting of the AIDS Group of Haemophilia Centre Directors on 12 February 1990, at which you were present.

We'll come back to this document later for other reasons but if we could go to the fifth page, please, Soumik, and if we could zoom in on the top paragraph -- so the first half of the page.

If we pick it up for present purposes where it says "Dr Lowe thought", so six lines down:

"Dr Lowe thought there was a difference between testing LFTs and testing for Hepatitis C and he wondered whether the patient's consent to testing should be sought. Dr Mortimer said he thought that reliable hepatitis C tests would be available in about a year. At the moment the tests were quite reliable, but it would soon be possible to do confirmatory tests. [Professor] Bloom didn't see why permission needed to be asked for Hepatitis C tests as this was just another LFT. Dr Savidge said that patients were now becoming more and more conscious of what tests were, so he would advise caution at present."

I am just going to look at one other meeting

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that took place very soon after that and then ask you about it, professor. So that was 12 February.

Then if we go to PRSE0000999 please, Soumik.

We can see this is a meeting on 26 February 1990 of "Haemophilia Directors for Scotland and Northern Ireland" which was chaired by you and, if we go to the second page, please, and we look at the bottom paragraph, paragraph 6:

"Hepatitis C Tests.

"At a recent meeting of the Regional Haemophilia Centre Directors AIDS Committee a representative of the Medical Defence Organisation was quoted as considering that hepatitis C testing could be undertaken on the same basis as other LFT's (i.e. HIV-type counselling was not necessary)."

Against the background of those two meetings in February, Professor Lowe, can you tell us what you meant, if it's an accurate record of what you said at the first meeting, by saying you wondered if consent should be sought?

A. Yes. I wanted to raise the issue because I don't think the UKHCDO had considered it before and, as you can see from the minutes, I think, you know, some people thought, well, it's just another liver function test". And I thought, well, not really, it's probably

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the same as hepatitis B, where, once you do get a test, you want to think what you say, for example, to patients when you are testing them for hepatitis B.

Now, at that meeting was I think a Dr Ian Simpson and he was from the Medical and Dental Defence Union of Scotland, to which most Scottish trained haemophilia directors in Scotland belonged, including myself. So he, I think, was advising on various matters, but I did ask him at that meeting, I think following that discussion, I said, "Right, I'm the only Scottish Haemophilia Centre Director here and we're having a meeting shortly of the Scottish Haemophilia Centre Directors and it would be useful if you could clarify what you think should be the consent process for hepatitis C."

And I think, to summarise our discussion, he said, "Well, what do you do routinely already?"

So I said, "Well, we do liver function tests as routine and we routinely test for hepatitis B, we've been doing that since the 1970s, and that's monitoring the patients."

And he said, "Well, what do you say to them?"

And I said, "Well, routinely, at annual reviews we say we're testing for hepatitis, we're doing liver function tests, we're doing hepatitis B, so what

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1 should we say when there's a hepatitis C test  
 2 available on the NHS?"

3 And he said, "Well, I would consider that on  
 4 the same basis. You would say: we're testing you for  
 5 hepatitis B for years and now there's a new virus  
 6 discovered, hepatitis C, and we now want to test for  
 7 this because it's extending the monitoring that we're  
 8 doing of you for hepatitis."

9 I think the concern at the time generally was,  
 10 as you know, in the late 1980s that you needed  
 11 detailed counselling before doing AIDS testing,  
 12 HIV testing, and I said, "So we don't need to do  
 13 HIV-type counselling?"

14 And he said, "No, this is routine hepatitis  
 15 testing."

16 And that, I think, was the information  
 17 I conveyed to my colleagues at this meeting of which  
 18 you have the minutes, of the Scottish Haemophilia  
 19 Centre Directors.

20 **Q.** Why was it a decision for Dr Simpson of the MDDUS?  
 21 Wasn't the question of the most appropriate clinical  
 22 course to take in the interests of patients a matter  
 23 for your judgment and the judgment of your colleagues?

24 **A.** Oh, yes, indeed, and that's why I was raising it for  
 25 discussion at the UKHCDO and then, of course, at our

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1 Scottish meeting. I think I did say, "This is the  
 2 MDDUS representative", but I think he attended UKHCDO  
 3 meetings on behalf of all three of the UK medical  
 4 defence societies, and in Scotland certainly, his  
 5 organisation would be the one that we should contact  
 6 about questions of information given to patients.

7 I think I did say, "I recognise that some of my  
 8 colleagues may belong to other defence organisations  
 9 and you should maybe check with them". So I think we  
 10 were all of the same mind in Scotland, that that's  
 11 fine. When we're talking to patients about  
 12 hepatitis C testing, we would undertake it on the same  
 13 basis, that you didn't need HIV-type counselling, you  
 14 just considered it as you would when you were talking  
 15 about testing for hepatitis B.

16 **Q.** Did it occur to you and your colleagues or was there  
 17 any discussion about, irrespective of what the legal  
 18 requirements might be, that it might be the right  
 19 thing, desirable thing, to do some form of equivalent  
 20 to HIV testing in relation to hepatitis C, not least  
 21 because of what had gone wrong for so many patients in  
 22 terms of the way in which they were tested and told of  
 23 their HIV diagnosis?

24 **A.** No, I think all my colleagues -- I mean, I wasn't  
 25 making this as a recommendation, I was raising it for

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1 a discussion, and I said: what do we think in general  
 2 as haemophilia directors, not only in Scotland but in  
 3 England, what should be the process? Because this is  
 4 something that might arise.

5 And I think the general feeling was: well,  
 6 we've been testing for LFTs and hepatitis B since  
 7 1970. We tell the patients. They will realise it's  
 8 in their interest. It is, you know, just trying to  
 9 clarify what type of hepatitis we're testing for, and  
 10 what the appropriate treatments for that virus might  
 11 be once it's identified.

12 **Q.** Is it right to understand that the kind of discussions  
 13 that we've seen in the minutes, particularly the  
 14 UKHCDO AIDS Group minute, as identifying possibly  
 15 three approaches to this question. One would be --  
 16 which may or may not have been Professor Bloom's view,  
 17 from the minutes -- just add it to the range of tests,  
 18 do the tests, and you don't need to say anything to  
 19 the patient in advance. The second would be treat it  
 20 like an LFT or hepatitis B test but tell the patient,  
 21 "We're going to test you for hepatitis C as well now  
 22 that there's a test". And then the third would be to  
 23 discuss with them the implications of testing and  
 24 invite them to agree to testing for hepatitis C, which  
 25 would be more akin to the HIV counselling process. Is

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1 that broadly accurate?

2 **A.** Yes, I think, just looking at what patients -- what  
 3 haemophilia centres said they did across the 1990s,  
 4 I think that was summarised very well when  
 5 Dr Charles Hay was asked, as Chairman of UKHCDO, to  
 6 outline the generally accepted procedure in 2011. And  
 7 there was some discussion at that Inquiry between  
 8 Dr Vivienne Nathanson, who was wondering if there  
 9 should have been a more AIDS-type approach, and Dr Hay  
 10 who said robustly no, we were pursuing the same  
 11 treatment for hepatitis and telling patients about it,  
 12 it didn't need that type of counselling. And he,  
 13 I think representing UK or English Haemophilia Centre  
 14 Directors, said there wasn't a comparison between  
 15 them, on the basis that AIDS was thought in the late  
 16 1980s to be a very fatal and immediate disease, a big  
 17 social stigma, and that was what influenced the need  
 18 for pre-counselling and saying before testing, "We  
 19 realise that this is a very sensitive issue and  
 20 requires a lot of counselling".

21 Whereas hepatitis C, like hepatitis B, was on  
 22 the basis that, well, finally we've got another  
 23 hepatitis virus, it's important to test for this  
 24 because we then know what the appropriate treatment  
 25 would be. If you turn out to be a carrier, you will

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1 need, you know, information about emerging knowledge  
2 about what the prognosis is of hepatitis C disease and  
3 appropriate investigations, and as and when we think  
4 there's a treatment for hepatitis C you will be  
5 referred to hepatologists for assessment or for  
6 treatment.

7 We thought that it was -- so I think what I'm  
8 saying is my understanding that not only in Scotland  
9 but across the UK this was the general approach taken.

10 And I think, just talking about Dr Hay, because  
11 as you know he and Dr Preston were very involved in  
12 the early studies of liver biopsies -- and it was  
13 Dr Hay's study in 1985 which we recognised was an  
14 important contribution because it showed progression  
15 of disease in some patients who had repeated liver  
16 biopsies.

17 Dr Hay and Dr Preston, I think, were very  
18 involved in production of UKHCDO guidelines on testing  
19 for hepatitis C that came out I think from about this  
20 time period we're talking about in circulations to  
21 Haemophilia Centre Directors in the UK, and then  
22 I think a published guideline in 1995 about the  
23 management of hepatitis C. Reading these guidelines  
24 recently, I see no mention of having to do HIV-type  
25 counselling before them. You just did the test and

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1 got on with it.

2 **Q.** Yes. You'll appreciate, Professor Lowe that just  
3 because something's not in a UKHCDO guideline doesn't  
4 mean that it's not the appropriate or proper course.

5 What was the actual course undertaken at  
6 Glasgow Royal Infirmary by you in terms of hepatitis C  
7 testing?

8 **A.** Well, I and my colleagues thought this was entirely  
9 reasonable, so at routine clinic reviews we would go  
10 through the lists of tests, as all of -- we're going  
11 to do, the routine blood tests, the biochemistry, and  
12 then say, "Liver function tests, hepatitis B, and we  
13 want to inform you that there's now a test for  
14 hepatitis C and we think it's very important that we  
15 test for this as well, because, as I've said, there  
16 will be specific treatment available and we want to  
17 know about it and keep you updated on what the  
18 progression of hepatitis C liver disease would be over  
19 the years, share that with you and share appropriate  
20 decisions". I don't recall any patient saying, "No, I  
21 don't want to know about hepatitis C". If they did  
22 say -- I mean, fair enough, "I don't want  
23 a hepatitis C test", we would say, "Okay, talk to you  
24 next time, but we do recommend it."

25 **Q.** Which generation tests were used at Glasgow Royal

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1 Infirmary, and when was testing first introduced?

2 **A.** Oh, dear. I have to go to my written statement here.  
3 Sorry. I think it started with an antibody test, and  
4 that became generally available in -- I think 1991 it  
5 was approved across the UK, and then that -- let me  
6 think.

7 Yes, so we started with the first antibody  
8 test, and we informed patients that if this were  
9 positive, it would mean they would be exposed to the  
10 virus. But we needed to follow that up with future  
11 tests that would be developed, as with hepatitis B,  
12 and these would be the antigen tests, and that would  
13 show the patient whether or not they were a carrier of  
14 the virus. Because as with hepatitis B, a percentage  
15 of patients would have been exposed to it, they had an  
16 antibody, but the carriers had obviously the risk of  
17 progressive liver disease over the years, as with  
18 hepatitis B.

19 So, when the antigen tests arrived, that would  
20 be, I think, about 1992/93. So we were generally  
21 using them. And, at that time, if somebody had  
22 a positive antigen test, as per the UKHCDO guidelines,  
23 it was then recommended that patients with positive  
24 antigen tests should be referred to hepatologists for  
25 management. As I've said in my written statement, we

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1 then referred all these patients who turned out to be  
2 carriers of hepatitis C to the liver clinic, which was  
3 run by Dr John Mackenzie initially and then by  
4 Dr Morris who set up a very comprehensive hepatitis C  
5 service from 1996.

6 In the meantime, we always gave patients the  
7 current information leaflets, either by the British  
8 Liver Trust or The Haemophilia Society which explained  
9 all the different types of hepatitis, what the tests  
10 were, what they meant, and these were regularly  
11 updated. So after the -- at the end of the clinic, we  
12 would say, "This is the current information for you to  
13 read. If you have any questions, do come back and  
14 we'll try and answer them."

15 **Q.** So is it your recollection that the patients who were  
16 tested both with the first generation and the next  
17 generation tests, for both tests you spoke to them in  
18 advance about hepatitis C testing?

19 **A.** Yes, that's my recollection.

20 **Q.** Would those discussions or the fact of it having been  
21 mentioned to the patient and the patient having  
22 agreed, would that be recorded in the patient's  
23 records?

24 **A.** Yes. So you would put in the case records:  
25 "Hepatitis C discussed with patient and test

1 performed," and then in your letter to the general  
 2 practitioner, it would be normal practice to include  
 3 that and say the patient has been tested for  
 4 hepatitis C and, depending when the dictation was  
 5 done, inform the general practitioner of the result.  
 6 **Q.** Was the testing, both generation testing undertaken by  
 7 Dr Follett again at Ruchill?  
 8 **A.** Yes, that's right. So as with the HIV testing, it was  
 9 the Regional Virus Laboratory. I think Dr Follett  
 10 initially and then I think he was succeeded around  
 11 about the mid-1990s, but it was always the regional  
 12 laboratory that did all the hepatitis testing way back  
 13 from 1970s with Hep B, then HIV, and then with the  
 14 Hep C.  
 15 **Q.** Glasgow Royal Infirmary had a large number of  
 16 patients. In relation to the first generation  
 17 testing, were all patients tested or only some, and if  
 18 so, how did you identify which to test?  
 19 **A.** We tested all patients. I mean, there were -- there  
 20 would always be a small number of patients who had not  
 21 previously been exposed to blood products, but even  
 22 they -- we would say to them, "We want to test you for  
 23 hepatitis C," because from, I think, about 1991, we  
 24 were starting our previously untreated patient study,  
 25 which I think you know about. We published the

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1 results. It was very important that we do baseline  
 2 testing with the patients' consent because the whole  
 3 point of the studies were to monitor them after first  
 4 exposure to an SNBTS blood product, and then to  
 5 establish after some period of treatment that the  
 6 product was safe; in other words, there was no  
 7 evidence of seroconversion to any of the pathogenic  
 8 viruses, and that would include hepatitis C. So all  
 9 of that would be explained to the patients before  
 10 their first exposure to a product.  
 11 **Q.** The testing that you described, as I understand your  
 12 written and earlier evidence, that was undertaken at  
 13 the routine clinic appointment. There wasn't any kind  
 14 of special arrangement whereby patients were called in  
 15 earlier; is that correct?  
 16 **A.** Sorry, called in earlier?  
 17 **Q.** In terms of the arrangements you made for testing your  
 18 patients, as I understand the evidence you gave in  
 19 writing and to the Penrose Inquiry, that was done at  
 20 routine clinic appointments. So you didn't, as it  
 21 were, the moment the test became available write to  
 22 all your patients and invite them to come in. As and  
 23 when a patient came to the centre, the testing would  
 24 then be undertaken; is that correct?  
 25 **A.** Yes. Once we had the test available from Dr Follett,

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1 we would routinely do it at the clinic. But I think  
 2 what you're saying is supposing somebody has not been  
 3 at the clinic then comes in for treatment, one would  
 4 obviously want to do their routine blood tests,  
 5 including hepatitis C at that time. So whenever you  
 6 first saw the patient when the test was available.  
 7 **Q.** Then, as I also understand your evidence, the results  
 8 were given to the patient -- and I'm talking about the  
 9 patients coming in regularly -- at their next  
 10 attendance which might not be for many months; is that  
 11 right?  
 12 **A.** Yes. The initial tests were antibody tests, and that  
 13 might be -- I mean -- sorry, we would routinely write  
 14 to the general practitioner and give the result along  
 15 with all the rest of the tests. We told patients that  
 16 it might take some time for the test, and if they  
 17 wanted -- so we said, first of all, we're not sure --  
 18 at the start of it, we said we don't know how long the  
 19 tests are going to take, but we will inform you at  
 20 your next visit, and if we think there is anything  
 21 significant about it, we will let you know or you're  
 22 very welcome to ring and get your test result.  
 23 **Q.** You referred to telling the GP the test result. Does  
 24 that mean there may have been cases in which the GP  
 25 found out that the patient was hepatitis C positive

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1 before the patient had been told?  
 2 **A.** I think -- I'm thinking particularly of patients at  
 3 a distance, the patients who lived 100 miles from the  
 4 centre. And I think if it was a remote patient, we  
 5 would say to the GP, "We may not see this patient for  
 6 some time, and can you ask the patient if they could  
 7 contact us to arrange another appointment?"  
 8 **Q.** I don't think that quite answers the question.  
 9 Were there cases or might there have been cases  
 10 when the GP was told the hepatitis C result of the  
 11 patient before the patient had been told?  
 12 **A.** No, I think when the result came, we would inform the  
 13 patient. Sometimes a GP would have had the letter  
 14 before the test was available, let me put it that way,  
 15 and then if we got the positive result we would write  
 16 that extra information to the general practitioner,  
 17 but I think we would also contact the patient at that  
 18 time, particularly if they didn't have an appointment  
 19 to come back with near future. So we didn't leave it  
 20 a long time.  
 21 **Q.** Were patients asked to agree to give their consent to  
 22 their hepatitis C status being notified to their  
 23 general practitioner?  
 24 **A.** Well, I think all tests that we conducted we said,  
 25 "Right, we will include the results of these tests in

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1 the letter that we send to your general practitioner".  
 2 The only exception to that was, as I think we were  
 3 talking about yesterday, when we had the HIV tests,  
 4 and some patients initially, discussing with  
 5 Dr Forbes, when he and Dr Wilkie were counselling, he  
 6 said there were several patients who really didn't  
 7 want the results to be put in a letter to the general  
 8 practitioner, at least not at that time.

9 So, apart from that, all results were shared  
 10 with the general practitioner as would be normal  
 11 medical practice.

12 **Q.** How long do you think the process of testing your  
 13 existing cohort of patients in the early 90s took?  
 14 Was it something that effectively took place over two  
 15 or three years or something that was concluded  
 16 swiftly?

17 **A.** Sorry, the testing process?

18 **Q.** Yes.

19 **A.** Well, we added it to the routine test, so it was done  
 20 on every patient who either came up to the out-patient  
 21 clinic or who was admitted. And then we had a system  
 22 that if patients were not attending to -- for review,  
 23 if there had been a period of time, we had a standard  
 24 letter that was written to the patient, copied to the  
 25 general practitioner, saying: you have not attended

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1 and it's now been X months and we think that it's  
 2 important that you come because we want keep you and  
 3 your blood tests under review. So that was standard  
 4 practice.

5 Could I say that at about this time, 1991, when  
 6 the test became available, we were very keen to see  
 7 the patients, because we were starting a series of  
 8 clinical efficacy and safety trials of the new SNBTS  
 9 products. This was the high purity products --  
 10 I think we've sent you documentation about the  
 11 evolution of these studies -- and were very keen to  
 12 get all patients seen at the unit, given information  
 13 sheets about the studies we were going to do, and ask  
 14 them to read them and give a signed -- written, signed  
 15 consent to participation in these studies, so that  
 16 they could -- this would be sorted out before we had  
 17 to give them their first treatment with the new  
 18 high purity SNBTS products which were replacing, from  
 19 1991 to 1992, the Z8 products which, although virally  
 20 inactivated, were intermediate purity. So we were  
 21 very keen to have patients signed up to this.

22 These information sheets would say: to ensure  
 23 the safety of these products, we want to make sure  
 24 that you are tested for -- all tests for hepatitis  
 25 have been performed before we start these studies.

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1 **Q.** Typically with a patient who has tested positive for  
 2 hepatitis C in '91/'92, what kind of information did  
 3 you tell the patient on informing them of their  
 4 diagnosis?

5 **A.** So we would say that: this is the virus which we think  
 6 is probably the cause of what we previously called  
 7 non-A, non-B hepatitis; in other words, it's sometimes  
 8 been symptomatic in the past, it may have given you  
 9 jaundice or other symptoms. And then a percentage of  
 10 our patients, as in all the centres, quite a high  
 11 percentage of patients have intermittent or persistent  
 12 slightly elevated liver function tests, and that's  
 13 what we call non-A, non-B hepatitis.

14 We said to patients that: this will, I think,  
 15 clarify the cause of these abnormal liver function  
 16 tests that we've been seeing. And if you're  
 17 hepatitis C positive, particularly when it came to the  
 18 antigen test, that means you are a carrier, and that  
 19 is by far the most likely explanation of any raised  
 20 liver function tests you have had in the past.

21 If patients are repeatedly hepatitis C  
 22 negative, you would then have to consider some other  
 23 cause of the liver function tests' elevation, but the  
 24 hepatitis C testing would very much clarify that you  
 25 were a carrier of the virus, if you had a positive

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1 antigen test, and that would mean that you needed  
 2 follow-up by a hepatologist, and careful monitoring of  
 3 your liver disease.

4 **Q.** What did you tell patients, again typically in the  
 5 early 1990s, about prognosis and the possibility of  
 6 developing, in what was known by then at least to be  
 7 a progressive condition, serious liver disease?

8 **A.** Okay. So when I became a consultant at the end of  
 9 1985, and I think I've mentioned that in my written  
 10 statement, I sat down with Dr Forbes and we reviewed  
 11 all the policies and, as the two consultants at the  
 12 clinic now, what should we be saying to patients about  
 13 non-A, non-B hepatitis.

14 So, first of all, because -- the study  
 15 I briefly mentioned at the start of yesterday's  
 16 session, Dr Steven, the consultant rheumatologist on  
 17 the unit, had been reviewing all the patients at the  
 18 haemophilia clinic, both for their arthritis but also  
 19 he had been assembling all the information over the  
 20 years about abnormal liver function tests, et cetera.  
 21 And he'd also been examining all the patients  
 22 clinically for any clinical evidence of liver disease,  
 23 not only jaundice but enlargement of liver and spleen,  
 24 and he wrote up two papers in 1986, which I think  
 25 I mentioned yesterday, one is the detailed survey of

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1 arthritis in all our patients and the other was  
2 a summary of the liver abnormalities in terms of liver  
3 function tests, previous tests for hepatitis B,  
4 et cetera.

5 So we had quite good information generally, so  
6 what we would say to the patients is: we've now  
7 completed the study and a high percentage of our  
8 patients have intermittent or chronic abnormalities of  
9 liver function tests. The significance of these in  
10 1985 was that we had quite a good estimate of what the  
11 percentage risk was over the next number of years of  
12 a patient with non-A, non-B hepatitis progressing to  
13 clinical liver disease; that is, cirrhosis.

14 As I think my evidence to the Penrose Inquiry  
15 said, and I repeat for this Inquiry, I would give  
16 our -- and Dr Forbes, would give our best estimate  
17 from the current aggregate data. And this was based  
18 on the Hay et al 1985 liver biopsy paper and the  
19 Aledort paper of the same year in America. And  
20 putting all that evidence together, we could give  
21 a fairly definite estimate that 13 to 15 per cent of  
22 patients who had biopsies showed evidence of cirrhosis  
23 or, in general, serious liver disease.

24 So we give them some idea about what the risk  
25 of that would be over the years. And we would refine

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1 that over the years. So we would give them an honest  
2 estimate of what we thought the risk of liver disease  
3 was.

4 The other thing I think we said from 1985 was  
5 that: the study we've done -- by Dr Steven -- all our  
6 patients that have attended the clinic have had an  
7 examination over the last five years and in none of  
8 them is there any clinical evidence of liver disease,  
9 but against that we have to predict the future, and we  
10 have to, you know, monitor you carefully with clinical  
11 examination for liver disease at every routine visit,  
12 keep testing the ...

13 And then, from the early 90s, add on to that  
14 that hepatitis C -- and this is what we will now be  
15 judging -- or the decision to refer to a hepatologist  
16 and giving them the information about the connection  
17 between hepatitis C and how that built upon the  
18 previous information that we and other centres had on  
19 non-A, non-B hepatitis.

20 I think the phrase I used, and it's in the  
21 transcript of the Penrose Inquiry, was something  
22 like: This is going to be a long journey. We can't  
23 answer all your questions now. But you and I and you  
24 and my colleagues are going to be sitting here year by  
25 year just giving you the information about how this is

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1 progressing. The more we know about hepatitis C, the  
2 more information we'll be able to give you, including  
3 what you should do in terms of alcohol use, lifestyle  
4 changes and, in due course, if we think -- if we have  
5 evidence that you have become a carrier of this, we  
6 will get you straight to a hepatologist and they will  
7 have specialist follow-up and they will keep you fully  
8 informed about not only the development of any disease  
9 but what investigation should be done and what  
10 treatment should be given. That, as you know, would  
11 start with Interferon.

12 Q. Do you think it's possible that you may have, with  
13 some, at least, of your patients in the early 90s,  
14 telling them about hepatitis C, underplayed the  
15 seriousness of it or told them that it wasn't really  
16 anything that they needed to worry about?

17 A. No, I don't think so. I think what we're talking  
18 about yesterday was the evolution of knowledge over,  
19 say, 1975 to 1985 before I became a consultant where  
20 we were really quite uncertain, and we've had that  
21 discussion. But I think definitely from 1985, I don't  
22 think Dr Forbes or I or Dr Walker or any of the  
23 doctors doing the clinic would underestimate it to say  
24 these are the figures and we know they might be  
25 frightening, but we can't predict will you be one of

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1 the 15 per cent who in five or ten years' time is  
2 starting to get symptoms of serious liver disease, no,  
3 but we can assure you we will keep you up-to-date, do  
4 all the monitoring that we can and, as soon as we  
5 think you need hepatological treatment, we will make  
6 sure you get that.

7 Q. Can I ask you to look at one paragraph in your witness  
8 statement. It's WITN3496013, Soumik, and it's  
9 page 69. In paragraph 30.12, you refer to having had  
10 three or four patients who developed cirrhosis, the  
11 majority of whom had either hepatitis B or heavy  
12 alcohol use or both, and then refer to it being about  
13 1987 when you saw the first patient who had non-A,  
14 non-B hepatitis without heavy alcohol use.

15 To what extent were you inclined in your  
16 treatment of patients with liver disease to assume  
17 that problems were due to alcohol consumption as  
18 opposed to the consequences of  
19 a transfusion-transmitted infection?

20 A. I don't think we ever made any such assumption. So  
21 what I've said there is that -- I'm trying to think  
22 about the timescale here. So before 1987, my  
23 recollection was that out of our 100 or more patients,  
24 we only had three or four patients who developed  
25 cirrhosis and there was a ready explanation. These

24

1 patients were the small number of patients who had  
 2 been hepatitis B carriers for many years or heavy  
 3 alcohol use or both.  
 4 So, you know, that -- it wasn't until then 1987  
 5 that Dr Forbes and I saw the first patient with  
 6 clinical -- the first clinical evidence of early  
 7 cirrhosis and there was no history of alcohol use, no  
 8 evidence of hepatitis B. So that was the first time  
 9 we saw a patient getting clinical evidence of serious  
 10 liver disease from non-A, non-B hepatitis and, as I've  
 11 said, that number of patients gradually increased over  
 12 the next decade or two.  
 13 **Q.** But why would you assume in a patient who you knew had  
 14 been treated with blood products for many years that  
 15 their signs of early cirrhosis, or whatever it might  
 16 have been, was attributable to alcohol use or abuse  
 17 rather than non-A, non-B hepatitis?  
 18 **A.** I -- well, I don't think we excluded non-A, non-B  
 19 hepatitis because we knew about non-A hepatitis. But  
 20 if you had a patient who had cirrhosis, then in  
 21 Glasgow by far the commonest cause was heavy alcohol  
 22 use. But if you had had a blood transfusion, that was  
 23 certainly going to be another factor and then, as  
 24 I say, the few patients we saw had hepatitis B and  
 25 that was known by that time to be a definite and very

25

1 important cause of cirrhosis.  
 2 **Q.** As treatments became available in the 1990s, in  
 3 particular interferon and then obviously ribavirin,  
 4 pegylated interferon, and so on, what role, if any,  
 5 did you have in arranging for your patients to receive  
 6 those treatments?  
 7 **A.** Well, before interferon and subsequent drugs were even  
 8 licensed for that treatment, Dr Forbes and I had  
 9 discussions, oh, right through the 1980s. We had two  
 10 very good gastroenterology colleagues, Dr Russell and  
 11 Dr Mackenzie, and we regularly spoke to them about  
 12 non-A, non-B hepatitis particularly around the time  
 13 I became a consultant when we had Dr Steven's study.  
 14 And we reviewed it with them and said, "Well, what  
 15 should we be doing? Do you want every patient with  
 16 abnormal liver function tests referred to you?" And  
 17 we said, "Well, we're probably going to not be of much  
 18 help." You can do liver scans, but they are  
 19 insensitive and they don't tell you much and don't  
 20 indicate any particular treatment. There's no  
 21 effective treatment.  
 22 Dr Sherlock in London and colleagues had shown  
 23 that steroids were ineffective. There was nothing  
 24 apart from advice to minimise alcohol, which was a  
 25 cofactor in any type of viral hepatitis for its

26

1 progression. And Dr Forbes and Dr Russell and  
 2 Dr Mackenzie said there's no point doing these  
 3 biopsies. We know that there's a high risk of  
 4 bleeding if you do a liver biopsy on a haemophiliac,  
 5 even though they have treatment. They were quite  
 6 sceptical about these liver biopsy results.  
 7 They said, "People have done studies on livers  
 8 at post-mortem, and cirrhosis is a knobbly liver."  
 9 And he said it depends which bit you hit with the  
 10 needle. And it's a bit hit and miss, as regards  
 11 estimating what the disease is. And they never  
 12 recommended it, so they said, you know, if a patient  
 13 develops clinical liver disease, or if a treatment  
 14 becomes available, or if we get more sophisticated  
 15 means of investigation of the liver, by all means, but  
 16 we don't think there's anything else you can do.  
 17 But by the time we had hepatitis C, they were  
 18 getting very interested in it and particularly agreed  
 19 that when the hepatitis C antigen test came in, they  
 20 should start referring it, regardless of any clinical  
 21 evidence of liver disease or what the liver function  
 22 tests were like. Because, as Dr Preston says in his  
 23 studies and his UKHCDO guidelines, in the biopsy  
 24 studies, there's no relationship between the patients'  
 25 pattern of liver function tests and the degree of what

27

1 you see at biopsy.  
 2 So they were very keen to see the patients, but  
 3 as I think I said in my statement, that was quite  
 4 a number to see, so we started referring every patient  
 5 with hepatitis C antigen to Dr Mackenzie. And he  
 6 eventually came to see me: "That's lovely, Gordon.  
 7 I would like to see them all immediately." But the  
 8 problem is that in Glasgow, like many other cities,  
 9 there's a huge intravenous drug use problem. So I'm  
 10 now getting flooded not only with your hundred or so  
 11 patients with haemophilia but a lot of patients  
 12 referred by the general practitioners who are drug  
 13 users who have got hepatitis C.  
 14 So that was when Dr Mackenzie and I campaigned  
 15 very vigorously with the managers to get a new  
 16 specific post in hepatology, with its number one  
 17 priority being the patients with haemophilia because  
 18 my argument to the managers were: these are not the  
 19 drug users or the alcoholics; these are the people who  
 20 have got their disease through NHS treatment. They  
 21 must come first. And they agreed, and they appointed  
 22 John Mackenzie, and he went and trained for three  
 23 months in a specialist centre, and then came back and  
 24 set up a service.  
 25 And the joint clinic we established was in the

28

1 haemophilia centre. It wasn't the routine clinic day.  
 2 We had a specific clinic day, and all the patients  
 3 with positive hepatitis C antigen tests were booked  
 4 in. And Dr Morris, Dr John Morris -- and he had  
 5 a hepatitis C sister, Sister Neilson. They were  
 6 a very good team. So they would see the patients  
 7 together and also with either our haemophilia sister  
 8 or the haemophilia staff nurse. So they would all  
 9 have a very long meeting with the patients, partner,  
 10 whoever else they wanted to come, and start the very  
 11 intensive education about hepatitis C, including the  
 12 treatment options. And, at that time, interferon  
 13 I think was being licensed and becoming available.

14 That could only be prescribed by designated  
 15 consultants in Glasgow, as in most places. It  
 16 couldn't be prescribed by a haemophilia doctor or a  
 17 GP. It had to be either infectious diseases  
 18 consultants or hepatologist consultants. So they  
 19 arranged as rapidly as possible the antiviral  
 20 treatment, starting with the interferon, and then over  
 21 the years as that progressed to double or triple  
 22 therapy. They provided a very good service, and they  
 23 gave written statements on their combined haemophilia  
 24 liver clinic to the Penrose Inquiry, and I'm sure  
 25 these are available to yourselves as well.

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1 **Q.** Yes. The question, Professor Lowe, I think you may  
 2 have answered it but just to check was -- we have  
 3 access to those statements -- is: what, if any,  
 4 involvement you had in either prescribing interferon  
 5 or monitoring the side effects of interferon? Was  
 6 that effectively dealt with by Dr Mackenzie, Dr Morris  
 7 and the hepatitis C sister, rather than by you and  
 8 your colleagues in the haemophilia centres, is the  
 9 question.

10 **A.** No, it was always joint management. So our patients  
 11 with haemophilia who are hepatitis C carriers, we had  
 12 to have joint care between the two departments, as we  
 13 had set up ten years previously for the patients who  
 14 were HIV positive.

15 So our haemophilia sister and staff nurse and  
 16 ourselves, we rapidly learned all the details about  
 17 the treatment, and we tried to make it as easy for the  
 18 patients as we could so that when they attended the  
 19 clinic, they would have all the investigations done,  
 20 both for haemophilia and for the hepatitis. And then  
 21 after a few years, because of the increasing load of  
 22 patients with hepatitis C, Dr Morris and  
 23 Sister Neilson moved to the out-patient department at  
 24 the other side of the hospital, and all the patients  
 25 were seen there. But, again, one of our haemophilia

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1 nurses would go over there, so we always had joint  
 2 management.

3 Then a lot of the monitoring, particularly of  
 4 the double and triple therapy, required regular  
 5 laboratory tests. So our sister and staff nurse in  
 6 the haemophilia unit rapidly got together with the  
 7 pharmacist who was controlling all these  
 8 anti-hepatitis treatments, what tests were needed  
 9 when, and we tried to make it as simple as possible  
 10 for the patients that we would try and do as many of  
 11 these tests at the appropriate time and send them off  
 12 for monitoring of interferon at the same time as we  
 13 were treating them for haemophilia. So it was  
 14 a highly organised liaison service.

15 **Q.** Did your patients at the time of undergoing their  
 16 interferon treatment have access to psychological  
 17 support?

18 **A.** Yes. Either we or Dr Morris and colleagues could  
 19 refer a patient for -- patients for psychological  
 20 support. And the route of contact had actually  
 21 started with the HIV patients. So quite a good  
 22 psychological support was set up at the Brownlee  
 23 Centre, which was where the infectious diseases  
 24 department had moved to from Ruchill about 1996, and  
 25 that was not only for HIV but for hepatitis C. And

31

1 they had psychologists there, and I think the lead was  
 2 a Dr Roger Wong whom we got to know quite well because  
 3 he had been involved with our patients with HIV  
 4 infection. So there's an established route of  
 5 referral.

6 **Q.** I want to ask you now about a separate topic,  
 7 Professor Lowe, and that's the question of  
 8 post-mortems and post-mortem tissue and samples.

9 Do you have any knowledge yourself, direct  
 10 knowledge yourself, of circumstances in which  
 11 post-mortems were undertaken on bleeding disorder  
 12 patients?

13 **A.** I think there are very few. So when I came to the  
 14 Royal Infirmary in the 1970s, like in most hospitals,  
 15 post-mortem autopsies were very routine, but then they  
 16 rapidly, after the introduction of lots of testing,  
 17 including scans et cetera, those diminished being done  
 18 routinely. So I cannot remember from -- oh, certainly  
 19 by the time I became a consultant, any of our  
 20 patient -- attending any post-mortem of any patient  
 21 with haemophilia.

22 **Q.** Do you know anything about what tissue or other  
 23 samples from deceased patients might have been held  
 24 within the Royal Infirmary or any of the other Glasgow  
 25 hospitals?

32



1 A. What post-mortems were done, and I can't remember any  
 2 patients with haemophilia having one, I think the  
 3 procedure was that the pathologist would do the  
 4 autopsy and then select what tissue samples should be  
 5 stored. I think Professor Ludlam covered this last  
 6 week. It would be the same procedure as in Edinburgh  
 7 Royal Infirmary, but you would have to ask the  
 8 pathologist for details about what studies were done  
 9 and how long they kept the samples.

10 Q. I'm going to ask you next a little about research. We  
 11 have touched on it already, to some extent.  
 12 Could we start by having NHBT0000094\_043,  
 13 please, Soumik. This is a 1986 publication in the  
 14 Scottish Medical Journal. "Liver dysfunction in  
 15 haemophilia". You are one of the named co-authors,  
 16 along with Dr Steven and Dr Sturrock, who you've  
 17 already mentioned, Dr Follett and Dr Forbes.  
 18 I am not going to ask you to look at it in any  
 19 great detail, but we can see from the summary:  
 20 "Liver function studied in 139 of 291  
 21 haemophiliacs."  
 22 And then if we go, I think, to the bottom half  
 23 of that page, please, Soumik, right-hand column, last  
 24 few lines, we can see it says:  
 25 "We have examined the current prevalence of

33

1 liver abnormalities in the haemophiliac population of  
 2 the west of Scotland and reviewed the liver function  
 3 of 57 patients prospectively for five years."  
 4 Then it says:  
 5 "In addition, we have ..."  
 6 If we go over the page, to the top of the next  
 7 page -- if we could zoom in a bit closer -- thank you.  
 8 "... carried out immunological tests and  
 9 related the results to those of liver function to  
 10 examine the possible relevance of immune factors in  
 11 haemophilic liver dysfunction."  
 12 Then we can see under the heading "Patients and  
 13 methods":  
 14 "139 out of 291 patients known to the Regional  
 15 Haemophilia Centre at Glasgow Royal Infirmary and the  
 16 Royal Hospital for Sick Children were seen and  
 17 examined by a single clinician as part of a study on  
 18 the prevalence, severity and pathogenesis of  
 19 haemophiliac arthritis."  
 20 And then it goes on to talk about, if we look  
 21 halfway down that column:  
 22 "Information obtained about details of previous  
 23 hepatitis or jaundice. Blood samples were tested for  
 24 evidence of past or present hepatitis B infection."  
 25 And then various liver function tests are then

34

1 described. And then it refers to 57 patients being  
 2 the subject of a more detailed analysis of liver  
 3 function.  
 4 Then if we look at the very bottom of the  
 5 left-hand column:  
 6 "Liver biopsies were not carried out, but  
 7 post-mortem histology was available on patients who  
 8 died of unrelated causes after the clinical study."  
 9 And so on.  
 10 What was the purpose of the research that's  
 11 being described in this paper, professor?

12 A. So, as I think I mentioned yesterday, following the  
 13 symposium that Dr Forbes held at the end of 1980, and  
 14 I did mention it to you at the start of yesterday's  
 15 session, because -- you ended that by saying, but what  
 16 were patients told about chronic liver disease at this  
 17 time. So I recalled that in the early part of 1981,  
 18 at the monthly research meeting of the department,  
 19 Dr Forbes and Dr Sturrock, the consultant  
 20 rheumatologist, they wanted to study two of these  
 21 unsolved problems in the population of patients  
 22 attending our review clinic: liver disease and  
 23 arthritis.  
 24 So Dr Steven's main topic for his MD thesis was  
 25 a five-year study of arthritis. So all the -- that's

35

1 a separate paper as was published at the same time as  
 2 this one on liver disease. That was monitoring the  
 3 patients' joints clinically and radiologically and  
 4 looking at relationship to treatment because, as you  
 5 know, the aim at this time was to see which patients  
 6 in particular might benefit from home treatment to  
 7 prevent progression of arthritis, and they followed up  
 8 particularly the patients who were on home treatments  
 9 at that time.  
 10 So Dr Steven would be the clinician mentioned  
 11 in this "method" section.  
 12 So he would go to all the haemophilia clinics  
 13 the patients were seen not only by a haemophilia  
 14 registrar but by Dr Steven, and he'd say, "Right, I'm  
 15 the senior registrar in rheumatology, I'm doing the  
 16 study, I want to examine all your joints carefully,  
 17 and we're also interested in looking at, in all our  
 18 patients, the liver function tests that have been done  
 19 over the years", and he would give them the update on  
 20 what was known at that time, which is the question you  
 21 asked me the other day, you know: what is liver  
 22 disease? And he would say, "Well, we've been to this  
 23 symposium and we know it's an increasing problem.  
 24 That's one of the reasons that we want to monitor not  
 25 only your joints but we want to keep an eye on your

36

1 liver."

2 So he would be not just looking at the joints

3 he would be looking at -- for enlargement of liver and

4 spleen, which, in fact, never occurred. And then when

5 it comes --

6 **Q.** Sorry, professor, can I just stop you there and just

7 ask you, so it was Dr Steven, as a rheumatologist, you

8 are saying, would be advising the patients about the

9 risks of liver disease?

10 **A.** Well, the people who would be at the clinic would be

11 Dr Prentice and Dr Forbes, as the consultants, who

12 knew the patients, and then one of their registrars,

13 who at that time I think would be Dr Small and then

14 Dr Greer, and then they would be seen by Dr Steven,

15 and he would say that, "As well as for joints, I'm

16 collecting information about your liver disease" --

17 **Q.** Professor Lowe, you say he would say that. Were you

18 actually present? Are you able to tell us from your

19 own firsthand knowledge that he did say that? Or is

20 this your hypothesis?

21 **A.** No, because I'm not doing any of these clinics. I'm

22 off doing general medicine and thrombosis clinics

23 during this period of time. But we got regular

24 updates on the progress of the studies at the unit

25 research meetings. Everybody in the department

37

1 including me.

2 **Q.** Do you know from your own knowledge, rather than what

3 you might assume would be the case as a matter, for

4 example, of good practice, whether the patients who

5 were here being studied were informed and asked to

6 consent to their involvement in these studies in all

7 their aspects, not just the arthritic aspect but in

8 relation to the immune function studies and the

9 57 patients who were the subject of a more detailed

10 analysis?

11 **A.** Well, I never attended these clinics that Dr Steven

12 was doing because I wasn't doing -- from 1980 to 1985

13 I wasn't at these clinics. But we got regular

14 descriptions of the progress of the study at the

15 research meetings.

16 **Q.** And did those --

17 **A.** It would be routine for patients to be informed about

18 what treatment they were having. There were changes,

19 as you know, at that time, between some patients being

20 put back on to cryoprecipitate, et cetera. Patients

21 were kept fully up-to-date, as far as I understand,

22 about their treatments, and about their liver disease.

23 They were being examined for liver disease.

24 **Q.** Professor, the question is -- and it may be that you

25 are not able to answer it, which is fine. The

38

1 question is: do you know, from your own knowledge,

2 what the arrangements were in terms of seeking

3 patients' consent to being part of a research

4 programme? Rather than generally being kept

5 up-to-date about their treatment and their progress

6 but actually being told they were going to be the

7 subject of a study and asking their agreement. Do you

8 have any direct knowledge of that whatsoever?

9 **A.** I think the only -- well, this is writing up -- it's

10 really an epidemiological study. It's following all

11 the tests that are routinely done at the clinic, so it

12 is examination for arthritis, the tests are routine

13 tests. The only difference, which I think Dr Steven

14 would tell them, that they wanted to take an extra

15 teaspoon of blood at the blood sample for these

16 immunological tests, and that was tests like

17 rheumatoid factor, anti-nuclear factor, complement,

18 things that rheumatologists do. And this was because

19 one question they are asking is: is it all virus or

20 are there disturbances of the immune system which are

21 relevant to liver disease and its progression?

22 So that was the only kind of difference in the

23 information collected from the routine assessment of

24 the patient.

25 **Q.** So are you saying, in terms of the ethos of the

39

1 Royal Infirmary in the early 1980s, first half of the

2 1980s, when this work was being undertaken, that there

3 was no need to tell the patients that they were being

4 studied?

5 **A.** Well, I think there would be. I mean, the default in

6 the Royal Infirmary, which was a very

7 research-orientated hospital -- I mean, many patients

8 from the clinics and patients admitted to the wards

9 were asked to be involved in research studies. So it

10 would be standard practice to submit to the research

11 ethics committee the study, and if they advised that

12 written informed consent as distinct from verbal

13 express consent should be obtained, they would do it.

14 I mean, I never saw the information sheet but

15 it would say we do want to take one extra blood sample

16 which is not routine, and that would be the

17 immunological test study.

18 **Q.** So what was your role in this study?

19 **A.** Only reviewing the paper, because I had no involvement

20 in it but, at the end of 1985, when Dr Steven wrote

21 this paper, I'd become a consultant and, as with many

22 of the other studies, I was invited to give it

23 a critical review and add any extra information to the

24 paper. So I'm an author of the paper because

25 I critically reviewed the paper but I was not involved

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1 at the coalface.

2 **Q.** Could we just have the paper up again, Soumik,  
3 NHBT0000094\_043, and go to page 5.

4 Look at the bottom half of the page. So the  
5 acknowledgement, Professor Lowe, reads this:  
6 "We would like to thank Dr MLN Willoughby,  
7 formerly of the Royal Hospital for Sick Children,  
8 Glasgow, for permission to study his patients ..."

9 What was the basis for asking the clinician  
10 rather than the parent for permission to study  
11 children?

12 **A.** Well, I didn't know until I read the paper that this  
13 study also involved Dr Willoughby's patients at the  
14 Yorkhill Hospital, but I see that Dr Pettigrew is one  
15 of the authors. So it would be Dr Pettigrew and  
16 Dr Willoughby who would be explaining to the children  
17 and their parents that the study is being performed  
18 and obtaining their consent, I presume. Is that what  
19 you are asking about Yorkhill?

20 **Q.** Bearing in mind that your involvement at least  
21 extended to looking at and critically analysing the  
22 paper, it was the particular text written there that  
23 had caught my attention, professor, that I was  
24 inviting your observations on.

25 We will move to a second piece of research,

41

1 which is the research about immune function initiated  
2 by Dr Forbes. We will do it perhaps by reference to  
3 the published article.

4 PRSE0001121, please, Soumik.

5 We can see this is published in the British  
6 Medical Journal in October of 1983:  
7 "Immunological abnormalities in  
8 haemophilia: are they caused by American factor VIII  
9 concentrate?"

10 And if we just look at the text:  
11 "Abstract.  
12 "Scottish patients with haemophilia, most of  
13 whom had received no American Factor VIII concentrates  
14 for over two years, were found to have immunological  
15 abnormalities similar to those in their American  
16 counterparts ..."

17 And then various details given.  
18 If we go back to the text, Soumik.  
19 We can see under the heading "Methods", it  
20 talks about patients with severe haemophilia A being  
21 selected, and then there is detail of the testing that  
22 was undertaken.

23 If we just go over to page 2, please, Soumik,  
24 bottom of page 2, last paragraph on the right-hand  
25 side, it says:

42

1 "Our results, however, argue against a disease  
2 vector that is specific to American blood products.  
3 In terms of lymphocyte abnormalities, Scottish  
4 patients with haemophilia yield results that are  
5 consistent with those seen in [AIDS] and in acute  
6 viral infection. Whether these abnormalities in the  
7 T cell ratios and in the response to concanavalin A  
8 are sufficient to render the patients immunodeficient  
9 and therefore, possibly, in a prodromal stage of  
10 [AIDS], will become apparent as the patients are  
11 followed up clinically."

12 Then we can see on the next page, just the  
13 date, if we can zoom in on the top half of the page,  
14 Soumik, beneath the various references we can see  
15 "(Accepted 25 August 1983)".

16 So this is a paper submitted to the BMJ or  
17 accepted by the BMJ in August 1983. What was your  
18 involvement in it, first of all, professor, because we  
19 see you again as one of the authors.

20 **A.** It's the same thing. It's critical review.

21 So I remember Dr Froebel presenting this paper  
22 at the monthly unit research meetings and, as I think  
23 I've said in my written statement, by that time, as  
24 part of preparation for writing up my own MD thesis,  
25 I'd done a course in medical statistics, and became

43

1 quite proficient in that. So, as I said in my  
2 statement, I was quite often sought out as a kind of  
3 statistician on the unit, as it were, at least the  
4 clinical one, to critically review the statistical  
5 tests performed and the -- what it told you about the  
6 results, not in terms of the discussion about the  
7 clinical implications but just: did the data as  
8 presented -- could you make a conclusion about this  
9 being carefully analysed?

10 So I think, in return for this statistical  
11 comment, they put my name, very kindly, on the paper.

12 **Q.** Do you know --

13 **A.** Sorry.

14 **Q.** Do you know when in 1983 this study commenced?

15 **A.** I think it would be sometime in 1982, but I wasn't  
16 directly involved.

17 **Q.** Was it your understanding or is it your understanding  
18 now that the trigger for this study was the reports  
19 from the States of AIDS in haemophiliac patients?

20 **A.** Oh, I think very much so. That was definitely the  
21 background. I think I read some of the -- I told you  
22 I subscribed to The Lancet, so that was very much the  
23 British journal which was commenting on it. And  
24 I remember Dr Forbes again presenting at the research  
25 meeting, saying, "This is Dr Froebel and she and

44

1 Dr Madhok are going to be doing these studies because  
 2 we really want to know, you know, if these lymphocyte  
 3 abnormalities are present in our population of  
 4 patients with haemophilia. What does it mean? You  
 5 know, it may be a virus" -- but the other theory --  
 6 and I think last week Professor Ludlam gave you  
 7 a pretty detailed -- information about the thoughts at  
 8 the time and why they were doing very similar studies  
 9 in Edinburgh. So I won't go into any detail of that.

10 **Q.** Were the 19 Glasgow Royal Infirmary patients who were  
 11 involved in this study told that their immune  
 12 functions were being studied because of the risks of  
 13 or possible risks of AIDS?

14 **A.** Well, I think Dr Forbes and Dr Madhok, who were seeing  
 15 these patients at the clinic, I would expect them to  
 16 explain. I think that it was fairly well known in  
 17 general amongst patients with haemophilia and The  
 18 Haemophilia Society was issuing information. I think  
 19 there was concern. But, again, I wasn't present.  
 20 This would be the routine haemophilia clinic and when  
 21 Dr Steven was doing all the immunological aspects of  
 22 liver disease tests, Dr Madhok would be saying,  
 23 well -- in a subset of these patients, he would say to  
 24 them, "We want to do these tests of your lymphocytes  
 25 to see if there is any similarity to what has been

45

1 reported in patients with haemophilia in America,  
 2 which might be of importance to your treatment."

3 **Q.** So you don't know as a matter of fact what was said to  
 4 patients but you would agree, as a matter of  
 5 principle, that the patients involved should have been  
 6 told of their prospective involvement?

7 **A.** Oh, absolutely. So just as I expect that Dr Steven  
 8 would explain why he wanted to do additional tests  
 9 that might explain the emerging problem with chronic  
 10 liver disease, Dr Madhok and Dr Forbes would do the  
 11 same thing.

12 **Q.** If we just have the document back on screen, please,  
 13 PRSE0001121, and go to page 2, Soumik, bottom of the  
 14 page.

15 Now if you just look again at the last  
 16 paragraph this is saying, isn't it, that the Scottish  
 17 patients studied is showing results consistent with  
 18 results seen in those with AIDS, and it's recognising  
 19 in the last sentence the possibility that these  
 20 patients may be in a prodromal stage of AIDS.

21 Do you know where the patients themselves were  
 22 told that that was what their results showed?

23 **A.** Well, I wasn't at the clinic but I do remember  
 24 Dr Forbes and I having a discussion with the chairman  
 25 of the local Haemophilia Society and he was regularly

46

1 reporting back to Dr Forbes, you know, feedback from  
 2 the patients, et cetera, and he said, "Oh, we're very  
 3 interested in these studies", and I think in that they  
 4 may have been supporting these studies financially  
 5 with a grant from the Scottish Haemophilia Society,  
 6 and saying, "Well, we know it's all trying to work out  
 7 if there will be an increased risk of AIDS whatever  
 8 its cause, and we're very keen to support this work  
 9 being done". But that's the only direct memory I have  
 10 of patients talking about it and saying they knew what  
 11 it was about and they were very supportive.

12 **Q.** Do you agree -- as a matter of principle, as you  
 13 weren't involved in the actual arrangements, but as  
 14 a matter of principle -- those of the 19 patients  
 15 whose results were consistent with those seen in AIDS,  
 16 and who could possibly be in a prodromal state of  
 17 AIDS, should have been told that at the time? As  
 18 a matter of principle.

19 **A.** I would have thought so. I think Dr Forbes was asked  
 20 about this at the Penrose Inquiry and he said the  
 21 problem was we didn't really know what these meant.  
 22 We knew there was a change but, as it says in the  
 23 discussion there, whether that will be a virus or just  
 24 an effect of having lots of Factor VIII was very  
 25 uncertain.

47

1 **Q.** Do you know again, as a matter of fact, professor,  
 2 whether the outcome of this study, which would be  
 3 known to Dr Forbes by August of 1983, led to any  
 4 change of approach to the treatment that was provided  
 5 and the treatment policies applied at the  
 6 Royal Infirmary haemophilia centre?

7 **A.** I think, again, I would quote what Dr Forbes said at  
 8 the Penrose Inquiry, and I think he said that, yes, we  
 9 looked at the treatment we were giving the patient.  
 10 And he said that there was very little use by this  
 11 time of the American commercial concentrates.  
 12 Scotland was self-sufficient now in the Factor VIII  
 13 concentrates. Because of the concern about age, some  
 14 of these patients -- of AIDS, sorry -- some of the  
 15 patients had been offered to revert to treatment with  
 16 cryoprecipitate rather than concentrate just to reduce  
 17 the number of donors.

18 So I think all of that was in his mind,  
 19 generally. Whether he spoke to specific patients  
 20 about their treatments in addition to the general  
 21 policy, I do not know.

22 **Q.** Is the answer to my question, which is not about what  
 23 Dr Forbes said to the Penrose Inquiry but is about  
 24 your own knowledge, that you don't know, from your own  
 25 knowledge, whether this led to any change of approach

48

1 within the Royal Infirmary?  
 2 **A.** No, I didn't.  
 3 **Q.** Then one final study. PRSE0003671, please, Soumik.  
 4 So if we look at the article on the bottom half of the  
 5 page, please, Soumik. "Impaired cell mediated  
 6 immunity in haemophilia in the absence of infection  
 7 with HIV". Again, you're there as a coauthor, along  
 8 with Dr Madhok, Dr Froebel, Dr Follett and Dr Forbes  
 9 and others. And it refers to skin tests amongst other  
 10 matters. And we can see from patients and methods,  
 11 bottom of the page, it's a study of 29 patients with  
 12 clinically severe haemophilia attending the Glasgow  
 13 haemophilia centre.  
 14 If we go over the page:  
 15 "Including 12 of 15 patients known to be  
 16 seropositive for antibody to HIV, et cetera. All  
 17 patients were examined for features of disease related  
 18 to HIV."  
 19 And then if we just look at the conclusion,  
 20 third page, please, Soumik, we can see the conclusion:  
 21 "... suggests that cell mediated immunity is  
 22 decreased in patients with severe haemophilia treated  
 23 with Factor VIII concentrate. This is related to the  
 24 amount of Factor VIII used. Whether this abnormality  
 25 is related to risk of infection with HIV or its

49

1 sequelae is not yet known."  
 2 Now, again, what was your involvement with this  
 3 study, professor?  
 4 **A.** So no direct involvement. I became a consultant and  
 5 was doing the clinic from about the end of December.  
 6 I was aware that the study was going on. My  
 7 understanding was that Dr Madhok, who performed the  
 8 study, was obtaining permission from the patients to  
 9 do the study and explaining that we wanted to know  
 10 whether these changes in the lymphocyte counts were  
 11 confined to patients who they now knew had HIV  
 12 infection, or were they to be seen in the HIV negative  
 13 patients, in which case one needed to look for another  
 14 explanation. And the best way to do that was this  
 15 DMCB test which was a skin test, and patients would  
 16 have to give consent to this because it wasn't  
 17 a routine test at that time. And the finding of it,  
 18 as you can see, is that cell mediated immunity is  
 19 decreased in patients with severe haemophilia treated  
 20 with Factor VIII concentrate. This is related to the  
 21 amount of Factor VIII used in the absence of HIV  
 22 infection. So they needed to do further studies to  
 23 find out what the significance was. And as you know  
 24 from Professor Ludlam last week, they were very  
 25 involved in Edinburgh in doing similar studies to find

50

1 out what was the cause, and Professor Ludlam discussed  
 2 that extensively with you.  
 3 Again, I was only asked to comment on the  
 4 methodology, the statistical significance, et cetera.  
 5 And Dr Madhok continued this work for a few years,  
 6 looking at different aspects that might lead to  
 7 further explanation.  
 8 **Q.** Were you involved at all with the process of either  
 9 obtaining patients' consent to participation or in  
 10 what might have been told to patients about the  
 11 results of the testing?  
 12 **A.** No, I don't think so. Dr Forbes, as I say, at the  
 13 time, and he and Dr Madhok knew much more about the  
 14 immunological aspects and the interpretation than  
 15 I did.  
 16 **Q.** Final question on the topic of research: you may, as  
 17 I think is clear from your answers, you listened to  
 18 Professor Ludlam's evidence last week. I asked him  
 19 about research on the sexual contacts and household  
 20 members of HIV positive patients, and you may  
 21 recall -- I'm not going to put any of the documents  
 22 up -- that Professor Forbes, in his capacity as Chair  
 23 of the UKHCDO AIDS Group, had suggested or invited  
 24 Directors to participate in a survey of sexual  
 25 contacts and household members. And you will recall

51

1 Dr Jones expressed concern about ethical implications.  
 2 Do you know whether at the Glasgow Royal  
 3 Infirmary any such study was undertaken?  
 4 **A.** I think that Dr Madhok and Dr Forbes wrote a letter in  
 5 The Lancet. Is that available to you?  
 6 **Q.** I don't have the reference to hand. We may be able to  
 7 obtain it, but we can read what's in The Lancet,  
 8 professor. So it is really: do you have any  
 9 knowledge -- particularly bearing in mind that you  
 10 took up your post as consultant in late '85, and this  
 11 was a study that was being mooted by Dr Forbes within  
 12 UKHCDO in the second half of 1985, do you have any  
 13 knowledge or recollection of whether such a survey or  
 14 study was undertaken in the Royal Infirmary?  
 15 **A.** So this is a study of HIV positivity in sexual  
 16 partners of the patients at the Royal Infirmary?  
 17 **Q.** Yes. Sexual partners and household contacts.  
 18 **A.** Well, it was part of the management of these patients  
 19 that they were advised to discuss with their sexual  
 20 partners, and then they would be counselled,  
 21 particularly by Dr Wilkie or by consultants at the  
 22 sexually transmitted diseases who were much involved  
 23 in the Glasgow AIDS programme, given information and  
 24 asked if they wanted to be tested. And I think our  
 25 report in a letter on the frequency of -- oh, yes, and

52

1 at the same time, there was concern about household  
2 contacts, nonsexual household contacts. So I think  
3 these were done as part of the clinical management.

4 And I think that Dr Madhok wrote a letter on  
5 the numbers of such patients which basically was: of  
6 the numbers tested to the time, there had been no  
7 evidence of transmission of HIV to sexual partners or  
8 to household contacts. I think it was an answer to  
9 that. I may have been wrong.

10 Q. I am going to ask you to deal very briefly with the  
11 issue of vCJD, professor, because we have  
12 a significant amount of documentation about it. But  
13 there are two documents I wanted to ask you to look  
14 at. The first is at GGCL0000152\_001, please, Soumik.

15 This is a letter dated 25 October 2002. It's  
16 from you to Dr Armstrong, Chief Medical Officer, and  
17 you -- the heading is "SNBTS Factor VIII and Factor IX  
18 vCJD notification strategy":

19 "Further to our letter of 25 September 2002, to  
20 date, we've had no reply from yourself or from the  
21 Banner Committee. It is now eight months since  
22 Haemophilia Directors in Scotland and Northern  
23 Ireland, having been informed of the relevant batches  
24 of SNBTS coagulation factor concentrates, to which  
25 a donor who subsequently died of vCJD contributed,

53

1 prepared information sheets for haemophiliacs in  
2 Scotland who are potential recipients. In the absence  
3 of any comment from the Banner Committee, Haemophilia  
4 Directors in Scotland and Northern Ireland met at the  
5 UKHCDO annual meeting in Liverpool on 10 October 2002  
6 and agreed to proceed to circulate their patients with  
7 information sheets we prepared in February."

8 And then you go on to say there's a proposal to  
9 discuss that at the next -- at an annual meeting of  
10 the Haemophilia Society in November and then send it  
11 to patients.

12 Now, just pausing there, it would appear from  
13 this that there was some kind of delay in the  
14 notification process or the information sheets being  
15 sent out, and you were writing to express concern to  
16 the Chief Medical Officer at the absence of any  
17 response to the proposals of Haemophilia Directors in  
18 Scotland and Northern Ireland to undertake this  
19 exercise; is that correct?

20 A. That's correct.

21 Q. Do you know what had caused the delay?

22 A. I think, on your behalf, I spent some time trying to  
23 access the relevant documents back in September and  
24 I've outlined for you the best information of the  
25 progression of this matter in my written statements.

54

1 So very briefly, this was an instance of  
2 possible exposure of UK patients to vCJD, and this was  
3 notified by SNBTS when they discovered that a blood  
4 donor from previous years had been found to have  
5 evidence of vCJD at -- sorry, just found to have vCJD,  
6 and this applied to several of the SNBTS concentrates  
7 used for treatment between '87 and '89.

8 So we had several discussions, which I've  
9 outlined at meetings of Haemophilia Directors, the  
10 coagulation working factor working party in February,  
11 at which we involved SNBTS as well. And then in  
12 January, Professor Ludlam reported that he had written  
13 to the Banner Committee. Now, this was  
14 Sir Michael Banner's national UK committee which the  
15 Government had asked to investigate any reports of  
16 this and what should happen to transfusion patients  
17 who had received these batches.

18 Back in February, Haemophilia Directors and  
19 SNBTS thought, well, as with the previous outbreak  
20 from BPL a year ago involving patients in England, we  
21 should prepare press releases and information sheets  
22 for patients so we could inform them.

23 The response we had from the Banner Committee  
24 clearly stated that patients should not be contacted  
25 until the panel had advised on their individual risks.

55

1 And they asked all the haemophilia centres in Scotland  
2 for anonymous data on the numbers of vials of the  
3 relevant blood products being forwarded to the panel  
4 for consideration. And then also in June, we had the  
5 annual meeting of Scottish Haemophilia Directors,  
6 SNBTS directors and Dr Armstrong who at that time was  
7 the Chief Medical Officer for Scotland. And we  
8 expressed our concerns to him about the delay, and we  
9 said there had been a very timely release by BPL and  
10 Haemophilia Directors in the English episode a year  
11 ago. We had assumed that fairly rapid information  
12 should be provided and what was happening.

13 Now, my recollection was that Dr Armstrong was  
14 very understanding of the desires of SNBTS and  
15 Haemophilia Centre Directors to get some action and,  
16 you know, when could we release the information  
17 publicly and to our patients? He agreed to raise the  
18 matter at the next meeting of the UK Chief Medical  
19 Officers.

20 I think what had happened in-between 2001 and  
21 2002 was that following the BPL outbreak, all the UK  
22 Chief Medical Officers in the four nations had got  
23 together and said, "We don't think patients should be  
24 told because there's nothing you can do about -- we  
25 don't know what the risk is, and we think that

56

1 patients who had received these things should, in  
 2 general -- shouldn't be told."  
 3 Now, we thought poorly of that, but clearly  
 4 this was Dr Armstrong's position. He said, "Well,  
 5 I want to discuss with the other UK Chief Medical  
 6 Officers." So we gave him a list of questions at that  
 7 time saying, "Look, these are our concerns. Please  
 8 share them."  
 9 Then we kept getting no information until  
 10 this -- at this meeting in Liverpool that you  
 11 discussed. We thought, well, look, it's now been  
 12 several months. We've heard nothing from the Banner  
 13 Committee. We think we should be open with our  
 14 patients, both SNBTS as the providers and the  
 15 Haemophilia Directors who are looking after their  
 16 patients. And that was when I firstly consulted my  
 17 Glasgow Royal Infirmary medical director, and he said  
 18 "Yes, the trust supports you in this action." And  
 19 I sent this letter to Dr Armstrong, and at the same  
 20 time I think Professor Ludlam had direct conversations  
 21 with the Deputy Chief Medical Officer for Scotland,  
 22 Dr Keel, because Dr Armstrong was on holiday. And we  
 23 said, "Look, this is the kind of statement we think  
 24 should be issued to the public and to patients."  
 25 Then the response to both Professor Ludlam and

57

1 myself from Dr Aileen Keel was that -- her advice was  
 2 that, yes, Haemophilia Directors should proceed to  
 3 inform their patients and offer appropriate  
 4 counselling and thought that instead of statements  
 5 from the Trust, which we had suggested, it would be  
 6 better to have a national Scottish information release  
 7 from the Scottish health department and SNBTS.  
 8 So that was finally agreed, what these  
 9 documents would be, and the letter was sent to  
 10 patients on 26 November. And I've sent a copy of that  
 11 letter as well as the press briefing to -- we all send  
 12 it to all our patients, and the statement was issued  
 13 on 27 November.  
 14 **Q.** Is this right, Professor Lowe: your understanding of  
 15 the reason for the eight or nine months' delay that  
 16 elapsed between you and your colleagues indicating  
 17 that you wanted to provide this notification to your  
 18 patients and the notification going out towards the  
 19 end of 2002 was because of a Central Government and/or  
 20 Scottish concern or view that patients shouldn't be  
 21 told, but once you wrote this letter that we've just  
 22 been looking at, you got a response saying, well, go  
 23 ahead anyway.  
 24 **A.** Well, we were frustrated about the Banner Committee's  
 25 delay. Now, we understood that they wanted to make a

58

1 risk -- they were considering a risk assessment which  
 2 might be varied, depending on how many vials the  
 3 patients had received, but we never received any  
 4 information about that. And when it got to a stage we  
 5 thought, you know, this has been almost a year, we  
 6 should really be sharing this information, and this  
 7 was our level of frustration.  
 8 I think you could ask the relevant departments  
 9 of health or the Banner Committee -- I don't know if  
 10 it's still going -- about what was the reason for  
 11 delay, but we thought that we should get on and tell  
 12 the patients.  
 13 **MS RICHARDS:** Thank you.  
 14 Sir, I note the time, and I am going to move on  
 15 to another topic, but we could take a break there.  
 16 **SIR BRIAN LANGSTAFF:** We will take a break now until 4.15.  
 17 **MS RICHARDS:** Is Professor Lowe able to come back a little  
 18 earlier than that?  
 19 **SIR BRIAN LANGSTAFF:** Seeing as it is a Friday, we may  
 20 want to finish earlier if we possibly can, so what  
 21 about four o'clock? Would that give you long enough?  
 22 **A.** Four o'clock would give me long enough, Sir Brian.  
 23 **SIR BRIAN LANGSTAFF:** Four o'clock.  
 24 **MS RICHARDS:** Thank you, sir.  
 25 **(3.31 pm)**

59

1 **(A short break)**  
 2 **NEW SPEAKER:**  
 3 **(4.00 pm)**  
 4 **SIR BRIAN LANGSTAFF:** Yes.  
 5 **MS RICHARDS:** Professor Lowe, we're going to dot around  
 6 from topic to topic now because a number of the  
 7 questions that I am going to ask are just questions on  
 8 discrete issues that have been raised by Core  
 9 Participants through their legal representatives.  
 10 Could we start, please, with a document on  
 11 screen HCDO0000278\_109, please, Soumik. This was  
 12 a letter written by you in October 1996 to Dr Ludlam.  
 13 If we just look at the first main paragraph you say --  
 14 it's entitled "Exclusion of employees of manufacturers  
 15 of treatments for haemophilia from delivery of  
 16 haemophilia care":  
 17 "As you know, I raised this question at the  
 18 last UKHCDO Regional Representatives Meeting on  
 19 16 September 1996. The reason was the recent decision  
 20 by our Trust to involve employees of the [SNBTS],  
 21 (which currently manufactures several products for  
 22 treatment of haemophilia) in Blood Transfusion within  
 23 the Trust; which might potentially involve them in  
 24 delivery of haemophilia care. I suggested that this  
 25 possibility must be expressly forbidden by UK Health

60

1 Departments, because it is a clear conflict of  
2 interest. An employee of one manufacturer of products  
3 for haemophilia treatment is clearly liable to choose  
4 their employer's products over those of another  
5 manufacturer. It is therefore as much a conflict of  
6 interest for such employees to be involved in  
7 haemophilia care, as it would be for employees of  
8 pharmaceutical companies to have any involvement in  
9 a healthcare provider's Pharmacy Services."

10 Can you assist, Professor Lowe, with what your  
11 concern was and what the outcome was of the issue that  
12 you had raised?

13 **A.** Yes, I can, and I think it's in my written statement  
14 at 114. The situation was that Dr Ian Franklin, who  
15 has given evidence to you, who had worked in  
16 Birmingham, he was appointed the bone marrow  
17 transplant director in the Glasgow Royal Infirmary,  
18 and then in 1996, the time of this issue, he was  
19 appointed as regional director of the West of Scotland  
20 Blood Transfusion Service, and at the same time he was  
21 given a university appointment as professor of  
22 transfusion medicine in the department of medicine in  
23 which I worked, and he had a senior lecturer.

24 So they became my research and teaching  
25 colleagues, so obviously I got to know Dr Franklin

1 very well, and he recognised that in 1996, Dr Walker  
2 and I had been including Dr John Davidson, who ran the  
3 blood bank -- the three of us had done a kind of one  
4 in three cover at the haemophilia service.

5 Dr Davidson in particular covering for us when  
6 Dr Walker and I were attending meetings, et cetera.

7 Now, Dr Davidson became ill at that time and  
8 was often off on sick leave for the next couple of  
9 years and at this time Professor Franklin kindly  
10 offered to participate in cover of the haemophilia  
11 unit because he'd had previous experience in  
12 Birmingham.

13 So Dr Walker and I were -- very much  
14 appreciated his kind offer but we were aware that in  
15 some English centres as well it was being mooted that  
16 providers of blood products were also keen to get  
17 involved in haemophilia care and, therefore, my  
18 concern, and also some colleagues in England, was as  
19 you see in the letter. It's potentially a conflict of  
20 interest to people who have involvement in haemophilia  
21 treatments and their production, which he was, to be  
22 ever in a position that he would be choosing what  
23 products to use.

24 So Dr Walker and I, and indeed Dr Davidson,  
25 discussed with Professor McKillop, my boss -- and

1 Dr Davidson was the head of haematology, and we agreed  
2 that to avoid any potential conflict of interest we  
3 politely declined Dr Franklin's kind offer, and he and  
4 his colleague, in fact, continued very impressive  
5 clinical research activities in the quite separate  
6 field of bone marrow transplantation.

7 Could I just add that, in addition to what  
8 I said in my statement of 30 September, I was  
9 listening, of course, to Professor Franklin talking to  
10 you a few weeks ago, and I noted in his statement that  
11 he had -- sorry, from his written statement to the  
12 Inquiry, he had stated:

13 "In Glasgow I had only one job, running the  
14 BMT Unit with some general haematology work. Because  
15 I had haemophilia experience I occasionally -- meaning  
16 rarely -- provided consultant oversight at weekends or  
17 out of hours to enable both of my consultant  
18 colleagues with an interest in haemophilia to attend  
19 meetings. I had no control or say over what products  
20 were used."

21 Having read that, I sent you a brief  
22 supplementary statement saying: I agree with  
23 Professor Franklin, it was a very kind offer,  
24 explained the situation, and confirmed that  
25 Professor Franklin occasionally -- meaning rarely --

1 provided cover at the haemophilia centre in  
2 Dr Davidson's absence. And I agreed that he had no  
3 control or say over what products were used. So there  
4 was no problem from our point of view.

5 **Q.** So leaving aside the position of Dr Franklin or any  
6 particular individual, the concern, as a matter of  
7 principle, was that an SNBTS employee should, just as  
8 with a pharmaceutical company employee, not have  
9 involvement in decisions relating to haemophilia care  
10 because of the possibility of conflict of interest?

11 **A.** That is correct.

12 **Q.** Then another document now on a different topic.  
13 ARCH0003312\_020, please.

14 This is a document we looked at with  
15 Professor Ludlam last week, Professor Lowe, and I just  
16 want to ask your input, please.

17 We can see it is a note of a meeting,  
18 10 February 2000, "to discuss the information required  
19 to assist in the examination of circumstances  
20 surrounding the safety of SNBTS blood products from  
21 hepatitis C". We can see that you were in attendance.  
22 We can see also from paragraph 1 there was an outline  
23 of the minister's meeting with The Haemophilia  
24 Society:

25 "... the Minister's undertaking to examine the



1 circumstances surrounding the safety of SNBTS products  
2 from Hepatitis C with particular reference to the  
3 Society's claim that Scottish patients were exposed to  
4 [Hepatitis C] longer than patients in England were."

5 So that was the context of the meeting.

6 If we then go on to the fourth page of the  
7 document please, Soumik, paragraph 9, we can see here  
8 that you are raising the question of whether it's  
9 necessary to contact patients to make them aware.

10 There's a response, which is:

11 "... it should be borne in mind that the  
12 information might be used in future Court actions.  
13 Professor Ludlam also sought advice on whether ...  
14 [there should be attempts by haemophilia directors] to  
15 try to identify ... patients whose whereabouts and  
16 status were unknown."

17 And then Mrs Towers says you should follow  
18 Central Legal Office advice.

19 Do you have any reflection, Professor Lowe, on  
20 what it was that led you to raise this question, and  
21 can you recall what you thought of the response, which  
22 appears to be seeking to deter you and  
23 Professor Ludlam from undertaking the exercise there  
24 contemplated?

25 **A.** Okay, so the point I raised first -- because at this

65

1 period of time, the directors of the haemophilia  
2 centre were Professor Forbes and Dr McDonald, and  
3 I thought at least -- you know, while as current  
4 directors, I and my colleagues were very happy to  
5 help, but I wondered if they should be involved in  
6 helping to assess information about it. That was  
7 a simple enquiry.

8 As regards Mrs Towers' thoughts, I didn't think  
9 it was relevant that this could result in future court  
10 actions. I just thought it would be courtesy to  
11 inform our predecessors. And I don't quite understand  
12 Mrs Towers' point that haemophilia directors should  
13 follow CLO advice on whether further investigation was  
14 necessary. I think it's irrelevant. I think that we  
15 were -- all accepted that the patients requesting this  
16 enquiry had a very valid case and we should be  
17 investigating the patients and the batches as a matter  
18 of course, regardless of any -- I don't think we ever  
19 took CLO advice. I think we just got on with the  
20 investigation to establish the facts.

21 **Q.** So as far as you're concerned, at the Glasgow Royal  
22 Infirmary, did you do what Professor Ludlam is here  
23 asking about? Did you undertake a look-back at the  
24 Royal Infirmary to try to identify patients who had  
25 not hitherto been contacted and tested?

66

1 **A.** Yes. I think the process that we used, which was  
2 co-ordinated by Dr Khair, who was the secretary to the  
3 Scottish Haemophilia Directors, was that we would  
4 collectively do all we could to identify which  
5 patients had been treated with this product at that  
6 period of time. I think we recommended that we should  
7 contact UKHCDO database in addition to our own notes,  
8 and I think we spent a lot of time trying to identify  
9 what patients were treated with what product at that  
10 time and to help with identification of episodes of  
11 hepatitis.

12 **Q.** Do you know -- if you don't, please say so -- how many  
13 patients of the Glasgow Royal Infirmary were  
14 identified as a result of this exercise and how many  
15 may have subsequently been identified later?

16 **A.** I think we discussed this briefly yesterday,  
17 Ms Richards. I think from my memory, we had two  
18 patients treated in this time period; I think one with  
19 cryoprecipitate, and one with the SNBTS concentrate at  
20 the time.

21 I think my impression was the minister and the  
22 Scottish Executive were very keen to get a quick  
23 answer, so I think we did what we could in the time  
24 permitted, and then you'll have seen the report of the  
25 Inquiry.

67

1 Regarding subsequent investigations, it may  
2 have been our successor, Dr Tait, possibly on behalf  
3 of the Penrose Inquiry may have got further  
4 information, but I don't know.

5 **Q.** Next document: HCDO0000271\_014, please, Soumik. Go to  
6 the second page.

7 This is the minutes of the same meeting we  
8 looked at earlier, Professor Lowe. We looked  
9 previously at the discussion about testing for  
10 hepatitis C and patient consent. I want to look at  
11 this now for a further purpose.

12 So we can see it's meeting of the AIDS group of  
13 Haemophilia Centre Directors. Can you just assist us,  
14 first of all, with this: what was the purpose and  
15 function of the AIDS group?

16 **A.** So I recall the AIDS group was set up by my  
17 predecessor, Dr Forbes, in January of 1985  
18 specifically to hold regular meetings to address the  
19 issues merging about AIDS in haemophilia. And then  
20 I succeeded Dr Forbes as a member of this. And by  
21 this time, as you can see, it's pretty well every  
22 major haemophilia centre is represented at that time,  
23 and I represented Glasgow Royal Infirmary.

24 **Q.** Would it be fair to say that the purpose of the AIDS  
25 group, or at least a main purpose of it, would have

68

1 been to try and ensure the best possible care and  
 2 decisions taken in relation to patients who had been  
 3 infected with HIV in consequence of their treatment?  
 4 **A.** Yes.  
 5 **Q.** Now, if we look further down this letter, we can see  
 6 in paragraph 1 (b) the Chairman welcomed Dr Simpson,  
 7 joint secretary of the three defence unions. And then  
 8 we can see there's a prolonged discussion which starts  
 9 at the bottom of this page under the heading  
 10 "Litigation":  
 11 "Dr Savidge raised the point that one member of  
 12 the AIDS group was acting as an expert on behalf of  
 13 the Plaintiffs and wondered whether it was acceptable  
 14 for him to take part in the Group's discussions on  
 15 Litigation and the Defence of the main statement of  
 16 Claim. Dr Simpson said this was an awkward position.  
 17 It would be less awkward if the expert was advising on  
 18 the 'generic' action. Dr Aronstam said he was the  
 19 person referred to. He had not been asked to be  
 20 a medical expert witness for the plaintiffs. If the  
 21 group felt it was awkward for him to be present he  
 22 would leave the meeting. He pointed out some other  
 23 directors were in a similar position and more might be  
 24 in the future. In reply to a question Dr Simpson said  
 25 he could no reason for Dr Aronstam to leave the

69

1 meeting."  
 2 Dr Rejman, so he is a representative of the  
 3 Department of Health, I think, professor; is that  
 4 right? Dr Rejman?  
 5 **A.** That's correct, yes.  
 6 **Q.** He talks about cases of plaintiffs in the Wessex  
 7 region being held back and would follow on after lead  
 8 cases:  
 9 "Dr Aronstam said he knew of at least two cases  
 10 involving his patients which were going ahead as lead  
 11 cases; it was news to him that Wessex cases were being  
 12 put back. In view of the feelings already expressed  
 13 he thought he should leave the meeting for the time  
 14 being while the matter was discussed. After  
 15 Dr Aronstam had left the room the situation was  
 16 discussed further. Several Directors said they would  
 17 feel nervous discussing details of their clinical  
 18 practice with a representative of the plaintiffs in  
 19 the room and some suggested that the Health  
 20 Authorities' defence lawyers might be put in an  
 21 embarrassing position. Professor Bloom thought that  
 22 Health Service Solicitor's advice should be sought.  
 23 Professor Preston thought the problem went beyond HIV  
 24 and that discussion of liver disease in view of the  
 25 Haemophilia Society's request for information might

70

1 prove very awkward if an expert witness for the  
 2 plaintiffs was present."  
 3 Go over the page:  
 4 "It was pointed out that Dr Jones was acting  
 5 for 5 Plaintiffs in Scotland. After further  
 6 discussion it was agreed the Chairman would write for  
 7 advice to the Consortium of Defence Lawyers and to the  
 8 Central Legal Office in Scotland."  
 9 Then there's a discussion about, in the next  
 10 paragraph, the health authority's defence to the  
 11 Statement of Claim:  
 12 "Discussion followed as to how the lawyers  
 13 would put together a generic defence in the light of  
 14 the varied practices at Centres. It was agreed that  
 15 Barbara Simpson's letter was helpful and that the  
 16 Chairman would ask her to [find] further reports ..."  
 17 And then if we go to the bottom paragraph:  
 18 "Dr Lowe suggested that Dr Simpson's advice  
 19 should be sought regarding the Haemophilia Society's  
 20 request for information on hepatitis. Was hepatitis  
 21 likely to be another item for which haemophiliacs  
 22 would seek litigation and was it advisable for the  
 23 Haemophilia Centre Directors to continue to collect  
 24 data? Dr Simpson said it would not be advisable for  
 25 the Directors to stop collecting data as they had

71

1 already started to do so. Dr Hill pointed out that  
 2 hepatitis was not a new thing; only the test was new.  
 3 After further discussion, Dr Simpson agreed that the  
 4 Haemophilia Society should not be given hepatitis  
 5 data."  
 6 Then there's an expression of concern about  
 7 Haemophilia Society representatives hearing Hepatitis  
 8 Working Party reports. Then the discussion we looked  
 9 at earlier, which I don't need to go over again. Last  
 10 paragraph on this page:  
 11 "Dr Aronstam returned to the meeting and  
 12 intimated in view of the obvious concerns of his  
 13 colleagues that he would resign from the Group. The  
 14 Chairman expressed his regret and asked Dr Aronstam to  
 15 consider the matter further before making a final  
 16 decision. The Chairman would write to the Defence  
 17 Lawyers to get their response to the situation and  
 18 would let Dr Aronstam know the reply. Dr Lowe asked  
 19 the Chairman to take advice from the Central Legal  
 20 Office in Scotland regarding Dr Peter Jones'  
 21 involvement in the cases in Scotland. This was  
 22 agreed."  
 23 Then I don't think I need to read the rest of  
 24 the discussion which goes on to talk about other  
 25 matters.

72

1 Professor Lowe, first of all, why was  
 2 a representative of defence unions being invited to  
 3 the AIDS group in the first place?  
 4 **A.** So, clearly, this is -- a major focus of the meeting  
 5 is the impending litigation which was, I think,  
 6 particularly going on in England. And I assume that,  
 7 as part of that discussion, they would want one of the  
 8 defence union representatives, and I think at that  
 9 time it happened to be Dr Simpson, to reply to any  
 10 questions that the directors had.  
 11 **Q.** To what extent had the AIDS group, established by  
 12 Professor Forbes to discuss matters relating to the  
 13 interests of patients, become a meeting to co-ordinate  
 14 a defence to the HIV litigation?  
 15 **A.** Well, I had replaced Dr Forbes going to back to about  
 16 1988, so only really had direct involvement from that  
 17 time. My memory is that this was unusual because the  
 18 usual discussions at the AIDS group meeting, I think,  
 19 were very much what you said at the start: what  
 20 information should we be collecting, and what would be  
 21 the general advice on UKHCDO about management of AIDS?  
 22 So this seemed -- I was, I think, surprised  
 23 that this was all about litigation. But, anyway,  
 24 I turned up and listened to the situation. So I don't  
 25 know why the Chairman would ask the lawyers to get

73

1 involved.  
 2 But with regard to what's up on the screen at  
 3 the moment, it seemed to me, as a Scottish  
 4 representative, that this seemed to be mostly about  
 5 events and difficulties going on in England. And  
 6 I thought that it would be appropriate that if there  
 7 was discussion with legal representatives, as regards  
 8 Scotland, there should be some communication with the  
 9 Central Legal Office in Scotland, recognising that  
 10 Scottish law, as you know, is different from English  
 11 law. So I was really there as a slightly puzzled  
 12 observer and thought that, as a Scottish  
 13 representative, I should just make sure that the  
 14 communications were joined up between England and  
 15 Scotland.  
 16 **Q.** If Dr Aronstam and Dr Jones had a different  
 17 perspective to offer because they were, for example,  
 18 providing advice to expert reports for the purposes of  
 19 litigation, would it not have been important for all  
 20 Haemophilia Centre Directors to understand that  
 21 different perspective, rather than simply co-ordinate  
 22 a unified defendant response?  
 23 **A.** Yes. So I think a recurrent theme of the UKHCDO was  
 24 that they should be very active in involving all the  
 25 haemophilia centres because all haemophilia centres

74

1 would be involved in litigation, whether it be for HIV  
 2 or hepatitis. And I think that was part of the point  
 3 I'm making here was: could we make sure that all the  
 4 haemophilia centres, including the Scottish ones,  
 5 whose representatives didn't go to this meeting, and  
 6 I think it was Dr Ludlam from Edinburgh and myself or  
 7 Dr Walker from Glasgow, and I thought that it would be  
 8 appropriate for this committee to co-ordinate with all  
 9 the haemophilia centres across the UK.  
 10 **Q.** Why were you asking the chair, Dr Rizza, to seek  
 11 advice from the CLO regarding Dr Jones' involvement in  
 12 Scottish cases? What had that got to do with the CLO  
 13 or, indeed, with the AIDS group?  
 14 **A.** Just for information, really, that these were the --  
 15 this was the -- these were the legal actions going on.  
 16 I didn't know of any cases in Scotland being adjudged  
 17 by Dr Jones at that time. This was news to me.  
 18 I hadn't heard about this. All I wanted to do was to  
 19 make sure that the Scottish Haemophilia Centre  
 20 Directors and the appropriate legal office which  
 21 represents NHS in Scotland should be kept involved in  
 22 these discussions.  
 23 **Q.** Can we go to the previous page, Soumik -- bottom of  
 24 the previous page. If you look at the last paragraph,  
 25 why were you seeking the advice of Dr Simpson, the

75

1 secretary of the Medical Defence Unions, on whether or  
 2 not to provide information on hepatitis to The  
 3 Haemophilia Society?  
 4 **A.** I thought that as he was there, as he'd been invited  
 5 to the meetings, I thought that the AIDS group should  
 6 be discussing with their collective Medical Defence  
 7 Unions, of which I think Dr Simpson was the  
 8 representative at the time, his views on behalf of the  
 9 medical defence societies. I wasn't proposing any  
 10 particular course of action. I just wanted it  
 11 discussed.  
 12 **Q.** Someone, and it may or may not have been you -- the  
 13 minutes read as though it's you, but the minutes may  
 14 not be particularly clear in that respect -- is posing  
 15 the question about whether Haemophilia Centre  
 16 Directors should continue to collect data. It appears  
 17 as though what is being said is: collecting data might  
 18 lead to us being sued; therefore, we shouldn't collect  
 19 data. Is that the view that's there being expressed?  
 20 **A.** That would certainly not be my view. I think it was  
 21 very important that we should continue to collect data  
 22 on every aspect. That was what we did routinely.  
 23 And, you know, it was certainly not our centre's  
 24 practice to stop collecting data. Why should we? The  
 25 main problem emerging at this time, as we have

76

1 discussed, was non-A, non-B hepatitis and the  
2 emergence of hepatitis C as a test, and it was clearly  
3 very important that we should collect all the data  
4 that we could and give that data and information to  
5 our patients.

6 I don't think this was anything I was  
7 advocating. I think you're quite right, minutes are  
8 difficult. There are general discussions, and I don't  
9 recall saying -- ever suggesting that we should stop  
10 collecting data.

11 **Q.** If we go to the top of the next page, the third and  
12 fourth line, there is, however, it would appear,  
13 a decision or an agreement by Dr Simpson that data on  
14 hepatitis won't be given to The Haemophilia Society.  
15 Why was it decided that hepatitis data should not be  
16 sent to The Haemophilia Society?

17 **A.** Well, it puzzles me because we were always very clear  
18 that all information on hepatitis in general and on  
19 their own results should be given to the patients.  
20 I don't see -- I'm not quite sure about the extent of  
21 involvement by the Haemophilia Society at that time.  
22 I don't know if this was English phenomenon.

23 I mean, in Glasgow, we had very regular  
24 meetings with the local branch of The Haemophilia  
25 Society, and while obviously we couldn't give their

77

1 representatives individual patient data, we were very  
2 happy to say what our process was and that such data  
3 was being collected. And, indeed, all this hepatitis  
4 data was openly published at regular intervals by  
5 UKHCDO in their regular reports.

6 **Q.** You see, Professor Lowe, it could be said and  
7 certainly patients reading this might think that this  
8 comes across as doctors, the Haemophilia Centre  
9 Directors, clubbing together to exclude those who  
10 might have a different view, Dr Aronstam, query  
11 Dr Jones, with the Department of Health, Dr Rejman, to  
12 try and defeat patients' attempts to obtain  
13 compensation.

14 Do you have any observation to make about that,  
15 professor?

16 **A.** Our policy was always to be very open. We told our  
17 patients what data we were collecting. We told them  
18 that it was being collated and discussed by UKHCDO in  
19 the patients' interests. I can -- I'm puzzled about  
20 this story about hepatitis data. I'm sorry, I've no  
21 further thoughts about that.

22 **SIR BRIAN LANGSTAFF:** It reads, Ms Richards, as though  
23 this was a group of people who regarded themselves as  
24 being under attack in litigation. Can you just remind  
25 me who was the defendant in the action which was then

78

1 ongoing in respect of HIV?

2 **MS RICHARDS:** Primarily Central Government.

3 **SIR BRIAN LANGSTAFF:** That's what I thought. Indeed, one  
4 can see, if one goes back to please 3, please, Soumik,  
5 there was a specific question which makes it  
6 absolutely clear, I would have thought. Dr Ian  
7 Simpson, who was the Scottish Medical Defence Union  
8 representative, made it clear that medical staff would  
9 not be sued. That was quite clear. That's plainly  
10 referenced to the current litigation. And  
11 Professor Bloom asked if they could be sued at a later  
12 date and, of course, that is everyone's right to sue  
13 if they wish. And Dr Simpson gives the appropriate  
14 reply.

15 Can you help, professor? Did Dr Simpson say,  
16 well, if you're asked to give your expert opinion, you  
17 must give it. You should co-operate. And if it's  
18 your honest opinion, you should do so, and you  
19 shouldn't be excluded from a group of others who  
20 appear, if they are excluding someone, possibly to be  
21 clubbing together in defence of not themselves but the  
22 Government?

23 **A.** Well, I have to say, Sir Brian, I was quite mystified  
24 at this discussion. I wasn't really aware at this  
25 time of the actions that were going on in England, and

79

1 all of this was kind of news to me at the meeting, and  
2 I think I was really trying to seek clarification as  
3 to what was going on and what were the issues.

4 I would certainly not approve of any  
5 over-defensive reactions. I think in our Scottish  
6 haemophilia directors meetings, of which I'm sure you  
7 have the notes, we were always very clear that we  
8 should do what we can in Scottish centres to collate  
9 all the data across Scotland and discuss it and to  
10 communicate regularly to our patients in Scotland what  
11 was going on at the Scottish Haemophilia Society  
12 meeting. So I think -- I was puzzled at the time and  
13 I'm no clearer 30 years on as to what the issues were.

14 **SIR BRIAN LANGSTAFF:** Thank you.

15 **MS RICHARDS:** I should say, of course, also health  
16 authorities were defendants -- some health  
17 authorities -- defendants to the action.

18 **SIR BRIAN LANGSTAFF:** Yes, that I thought was the case.  
19 But it certainly wasn't -- it wasn't the UKHCDO, was  
20 it, or individual doctors?

21 **MS RICHARDS:** No.

22 **A.** Could I just come back on that?

23 So I think the situation's quite different in  
24 Scotland, as it often is. So we don't have health  
25 authorities, we had health boards in Scotland.

80

1 **SIR BRIAN LANGSTAFF:** Yes.

2 **A.** And those were collectively represented by the Central

3 Legal Office and the name's on the tin. They

4 co-ordinated all the legal and defence issues across

5 Scotland, and that was the reason why, at UK meetings,

6 I would just religiously point out that Scottish law

7 was different and the organisation of the NHS and its

8 legal aspects was different in Scotland.

9 **MS RICHARDS:** Moving to a separate topic, Professor Lowe,

10 you referred in your evidence on Wednesday to a paper

11 from Professor Markova of the psychosocial benefits to

12 child and adult patients of home treatment. Can

13 I just check with you the paper to which you are

14 referring.

15 Could we have RLIT0000305, please, Soumik.

16 If we just look at the top half of the page, we

17 can see it's a 1983 paper, "The haemophilic patient's

18 self-perception of changes in health and life-style

19 arising from self-treatment", Professor Markova

20 Dr Forbes and others. Was that the paper to which you

21 were referring, professor?

22 **A.** Yes, it is.

23 **Q.** We can see from the date it is 1983. Would you agree,

24 therefore, professor, that this isn't going to tell

25 one anything about how patients might have viewed

81

1 home treatment if they had known at the time, for

2 example, of the risk of infection with AIDS?

3 **A.** I agree.

4 **Q.** Thank you. Can we then, please -- I don't think we

5 need to put it back on screen, but you will recall we

6 spent some time yesterday, professor, considering the

7 letter of 8 January 1985 to which you and Dr Forbes

8 had appended your names and signatures.

9 Did you consider at the time, or do you

10 consider now, that putting your name to a letter when

11 you couldn't verify its content or accuracy because

12 you weren't at the time working at the haemophilia

13 centre, does that or did that, in your view, give rise

14 to any ethical considerations?

15 **A.** Well, as I think I made clear, this was Dr Forbes'

16 letter, and I was given very little time on a busy day

17 to look at it. I think Sister Campbell and I said:

18 okay, if you want to send this out, we're happy to

19 look at it. But we had only I think about

20 half-an-hour to look at it.

21 I think Dr Forbes was asking me as a friend and

22 a colleague -- he had been supervising my studies in

23 thrombosis over many years -- he just wanted some

24 help. Not really with a detailed critical analysis,

25 because, as you say, I had not been involved in the

82

1 studies and the information. I think he just wanted

2 me to look at it and say could I be added as

3 a cosignatory, as a contact in the case that patients

4 rang up and wanted to talk about it.

5 I knew from our recent experience with that

6 unfortunate AIDS patient, I knew something about AIDS,

7 and I knew the impending availability of routine tests

8 and I just offered to help.

9 In retrospect, it may have been a mistake to

10 sign that but, as I said, I think it was a draft that

11 was going to down for discussion at the AIDS Committee

12 and I'm really not sure if that letter was sent out in

13 that format.

14 In contrast, the April letter, when I was told

15 that I was going to join a consultant and be involved

16 in due course with AIDS counselling and testing, I was

17 happy to sign it as a kind of introduction that

18 I would be becoming Dr Forbes' co-consultant.

19 **Q.** You have told us about the model of how treatment was

20 arranged in Glasgow, in the sense of bleeding disorder

21 patients being looked after -- with certain

22 exceptions -- by physicians in the Department of

23 Medicine, such as you and Dr Forbes. We've heard

24 elsewhere of more typically a model of haematologists,

25 some, not all, of whom are from an essentially

83

1 pathological background. Why had Glasgow developed

2 a different model from the model elsewhere? Is it

3 just an accident of history or were there particular

4 reasons for it?

5 **A.** I think, as I tried to say in my outline of the

6 history, it very much started with Professor Douglas

7 at a time when haematologists were physicians, who

8 were usually general physicians, with an interest in

9 haematology, supported by a haematology laboratory.

10 And then, with the appearance of Dr MacDonald in 1962,

11 building up a department of haematology at a time when

12 clinicians were now training both as physicians and as

13 laboratory haematologists were developing.

14 But the arrangements in Glasgow Royal Infirmary

15 was that these people all trained together. Dr Forbes

16 and Prentice stayed as physicians, Drs Davidson and

17 Walker joined the Department of Haematology. But they

18 all knew each other and they all collaborated well,

19 and that was the situation that continued.

20 The particular advantage of our department of

21 medicine was the involvement of rheumatologists,

22 because that's the main problem in haemophilia. And

23 we always provided a very co-ordinated service with

24 our rheumatology colleagues, as I've described

25 repeatedly.

84

1 So basically when -- so Dr Prentice moved off,  
 2 Dr Forbes was then co-director with Dr McDonald, and  
 3 when he moved to Dundee, I met with my haematology  
 4 colleagues to say, "Well, you know, do you still want  
 5 me as haemophilia consultants", and they said, "Yes,  
 6 indeed we do, because you've been very involved over  
 7 the past year or two with seeing the patients,  
 8 counselling them about AIDS and you and your  
 9 rheumatology co-consultants have been extremely  
 10 important in running the centre". The centre is based  
 11 on the unit and the department of medicine, and they  
 12 were entirely happy that I should continue and,  
 13 indeed, to replace Dr Forbes as a co-director, because  
 14 we then had a team that was three haematologists,  
 15 Drs McDonald, Davidson and Dr Walker, and myself, and  
 16 Dr Sturrock in rheumatology, and within a short period  
 17 of time Dr Madhok was appointed a consultant. So we  
 18 had a service which provided comprehensive  
 19 haemophilia care.

20 I've taken care to point out to you that at no  
 21 time would I or my predecessor physicians directly  
 22 order blood products. That was all, by law, done by  
 23 the haematologists. But we collaborated closely  
 24 together and that seemed to work well.

25 **Q.** You told the Inquiry over the last couple of days,

85

1 when talking about information provided to patients,  
 2 that as a result of the sign in the centre about  
 3 hepatitis and the conversations that were had by or  
 4 between patients, that hepatitis was, as you put it,  
 5 the talk of the steamie.

6 Was information of the nature spoken of by  
 7 Drs Triger, Underwood and Thomas at the 1980 symposium  
 8 shared with patients?

9 **A.** Yes. So as I said just an hour or two ago,  
 10 following -- well, Dr Sturrock was actually at the  
 11 meeting, and he and Dr Forbes immediately afterwards,  
 12 as I understood it, said: right, this is emerging  
 13 information on the severity and the future problem of  
 14 non-A, non-B hepatitis, and how can we collectively do  
 15 something about it? So, as I've just been saying  
 16 earlier, that was when Dr Steven started coming to the  
 17 clinic, carefully examining the instance and  
 18 development of arthritis, and at the same time  
 19 collating all the information on liver function tests,  
 20 et cetera, over the years.

21 Now, as I said earlier, I was not present at  
 22 these meetings, at the clinical reviews, but these  
 23 were regularly reported at the unit research meetings,  
 24 and all I can say is that I thought a lot of  
 25 information was given to the patients. But I wasn't

86

1 there.

2 **Q.** Would you accept, as a matter of principle, that  
 3 information of that nature was material to the  
 4 patients' decision-making as to whether to accept  
 5 treatment or not?

6 **A.** Yes, and at these review clinics I recall it was  
 7 standard practice for Dr Forbes and Dr Prentice to  
 8 regularly discuss what treatment the patient was  
 9 having and any implications for change, such as, for  
 10 example, in 1983, some patients going back onto  
 11 cryoprecipitate.

12 **Q.** Now you have referred in the course of your evidence,  
 13 and you refer in your written statement a number of  
 14 times, to the "collective response" that was provided  
 15 to the Penrose Inquiry in relation to the provision of  
 16 information or availability of information about  
 17 hepatitis.

18 Now, I'm not asking you about the contents of  
 19 that document, professor, but about, really, its  
 20 existence.

21 Did it not occur to you that a collective  
 22 response could lead to one person's recollection being  
 23 influenced or distorted by others?

24 **A.** Well, I think that as haemophilia directors in  
 25 Scotland, we had very close relationships and we had

87

1 regular meetings. I think that at the Scottish  
 2 Executive Inquiry -- and we've been discussing these  
 3 letters from 2000 -- we were asked collectively could  
 4 we gather together information as to over what period  
 5 of time and at which haemophilia centres information  
 6 about risk of hepatitis would be given. So we were  
 7 directly asked by the Scottish office to assemble that  
 8 information. So that was what we did then.

9 Then for the Penrose Inquiry, we discussed at  
 10 the Central Legal Office if it would be useful to  
 11 follow that exercise and try to collate, particularly  
 12 from retired colleagues, what information they would  
 13 have provided in previous years. Because, in  
 14 particular, what the Penrose Inquiry was asking  
 15 was: before patients were first treated, you know, at  
 16 that time, what would be said to patients or parents  
 17 about hepatitis risk? And for those of us who had  
 18 only been working in haemophilia centres in recent  
 19 years, we thought it was only fair to see if we could  
 20 circulate previous directors, saying: have you any --  
 21 I mean, we couldn't all be called to the Penrose  
 22 Inquiry -- have you any recollection of what would be  
 23 given for the information of the Inquiry?

24 **Q.** Professor, isn't the fallacy of a collective response  
 25 that it assumes that there was a universal practice,

88

1 that every centre did the same thing, and thus  
 2 obscures differences and variations between different  
 3 centres and different clinicians?  
 4 **A.** Well, I think Lord Penrose himself commented on this  
 5 at the Inquiry, and it will be in the transcripts of  
 6 the Penrose Inquiry. He said he was a bit uncertain  
 7 about this process for the very reason that you give.  
 8 So he preferred to concentrate on the individual  
 9 statements that were given by myself and other  
 10 witnesses. And I can understand that.  
 11 I think -- but I think it was a useful exercise  
 12 just to -- I mean, just to collate the information.  
 13 If the Inquiry wanted to accept that, fine, and that  
 14 if it didn't, fine. But we thought it's something  
 15 that we've been asked to do in repeated inquiries, in  
 16 2000, in 2010, for Penrose, and now. But I accept  
 17 that the Inquiry may not want to accept it for the  
 18 very reason that you give.  
 19 **Q.** Was the objective --  
 20 **SIR BRIAN LANGSTAFF:** I don't think we have asked --  
 21 **MS RICHARDS:** We haven't asked for it --  
 22 **SIR BRIAN LANGSTAFF:** -- for that, have we?  
 23 **MS RICHARDS:** No, we haven't.  
 24 I'm not sure Lord Penrose did, because he said  
 25 it was inappropriate in his report to rely upon it for

89

1 his understanding of what happened at the Glasgow  
 2 Royal Infirmary. But that's a different inquiry. We  
 3 haven't asked for any collective response, no.  
 4 **SIR BRIAN LANGSTAFF:** There's a world of difference  
 5 between a collection of responses, each of which is  
 6 individual, and a collective response, which by  
 7 definition is not.  
 8 **MS RICHARDS:** Yes.  
 9 **A.** Yes, I'm sorry. You didn't ask for it and I'm sorry  
 10 you got it, but that's --  
 11 **SIR BRIAN LANGSTAFF:** That's -- you don't need to take it  
 12 any further. I have said what I have had to say.  
 13 **MS RICHARDS:** Just picking up then on, again, some  
 14 evidence you gave I think yesterday or the day before  
 15 about treatment and choice of products.  
 16 First of all, you told us, I think, that  
 17 Dr Davidson, when a new batch of factor concentrate  
 18 arrived in the blood bank, would check it to see if  
 19 the Factor VIII which it contained was what it  
 20 advertised. How did he do that?  
 21 **A.** He would make up a vial, as I understand it, and check  
 22 out that the number of units in the vial was what it  
 23 said on the label. And that, I think, from  
 24 experience, was that there was variation, whether it  
 25 be SNBTS products or commercial products. And he felt

90

1 that it was part of his responsibility, as director  
 2 for blood products laboratory, to run quality control.  
 3 I was trying to find if he ever wrote this up  
 4 as a paper, but I remember him giving it as  
 5 a presentation to the effect of the importance of  
 6 quality control in a local blood products laboratory.  
 7 **Q.** You talked again yesterday or the day before about, in  
 8 the case of inhibitor patients, who might need  
 9 specific products, a joint decision being taken  
 10 between you or Dr Forbes or whoever the physician  
 11 might have been and Dr Davidson, or another in the  
 12 blood bank, as to what product to use.  
 13 In relation to non-inhibitor patients, who  
 14 presumably would have been the majority of patients  
 15 requiring treatment, was the system that, effectively,  
 16 the patient got what was on the shelf, and what was on  
 17 the shelf had been decided by Dr Davidson?  
 18 **A.** No, I think there were always frequent discussions on  
 19 what should the policy be of the haemophilia centre.  
 20 As I said at the start, the haemophilia centre wasn't  
 21 just the ward 3 Department of Medicine centre that the  
 22 severe patients came from. The haematologists by  
 23 tradition continued to look after and regularly review  
 24 many of the milder patients, those who didn't have  
 25 joint disease, and were quite happy to continue coming

91

1 to the blood clinic run by Dr MacDonald, Dr Davidson  
 2 and Dr Walker, and remaining under their care.  
 3 That really only changed when Dr Walker joined  
 4 me as co-director and we decided that we should try to  
 5 unify the service, particularly because at that time  
 6 we had the emerging problems of how to manage AIDS,  
 7 which the mild patients didn't have, but increasingly  
 8 it was discovered that some of these milder or  
 9 moderate patients had hepatitis, so it seemed entirely  
 10 appropriate to bring them into the system and have the  
 11 contact with the haematologists.  
 12 So there were always discussions about what  
 13 treatment should be had, and my point is that it's  
 14 only the haematologists who can prescribe and order  
 15 products. It is not the physicians. Clearly, it's  
 16 important that the physicians, like Dr Forbes and  
 17 Prentice initially, and then myself, should be  
 18 involved, so that we could have input as well, but the  
 19 decision, by law, had to be made by the haematologist.  
 20 Sorry, if you just look at the minutes of the  
 21 UKHCDO meetings, and indeed the Scottish haemophilia  
 22 directors' meetings, which were started in the early  
 23 1980s and initially were chaired by Dr McDonald, there  
 24 was always discussion amongst all the haemophilia  
 25 doctors in Scotland, whether they be haematologists or

92

1 physicians, about the general policies of Scotland,  
 2 which was important, because SNBTS was the default  
 3 supplier of products, and then to collectively share  
 4 our experience. And when it came to the use of  
 5 commercial products, that again very much involved  
 6 discussion at a Scottish level, hence the importance  
 7 of these meetings, because if -- take the case of  
 8 inhibitors. You have a very expensive commercial  
 9 concentrate -- I mean, the cost of the porcine and the  
 10 activated prothrombin complex concentrates, that was  
 11 an enormous cost. And it was important that general  
 12 policies be agreed at a Scottish level because a small  
 13 health board, like from Aberdeen, Dundee or Inverness,  
 14 they couldn't afford to have one expensive haemophilia  
 15 inhibitor patient because they would, you know, have  
 16 an enormous cost to a small health board with limited  
 17 capacity. So it was very important to have a Scottish  
 18 policy.

19 And then I think from about 1988, through the  
 20 coagulation factor working party, for which you've had  
 21 documentation from Professor Ludlam, who was the  
 22 chairman of it, that we had an arrangement whereby  
 23 there was a co-ordinated policy across Scotland on the  
 24 purchase of commercial products. And that allowed us  
 25 to spread the cost of these products across the whole

93

1 of Scotland.

- 2 **Q.** In your evidence yesterday you referred to Dr Forbes  
 3 having been working on AIDS solidly for two years by  
 4 late 1984. What work were you referring to?  
 5 **A.** His interest in the subject. Sorry, the work. He was  
 6 widely involved in discussions with UKHCDO colleagues.  
 7 His interest was evident, that he was the chairman of  
 8 the AIDS group which we've just been talking about, of  
 9 UKHCDO, and he initiated the greater Glasgow AIDS  
 10 information and policy group. So it really became his  
 11 main interest from 1983, in terms of getting  
 12 information, setting up collaborations, and he was  
 13 also, I think, in quite close touch with American  
 14 colleagues. He had been trained by Dr Ratnoff, in  
 15 Cleveland, who kept in touch with him, and he kept in  
 16 touch with his colleagues about the emergence of  
 17 information in the States. So it was, I think, his  
 18 main interest.  
 19 **Q.** Given all that and given the research we looked at  
 20 earlier which first resulted in that October 1983  
 21 publication which recognised the possibility that the  
 22 immune function results could be an indicator of an  
 23 early stage of AIDS, why did it come, as you reported  
 24 in your evidence yesterday, as a surprise or shock to  
 25 Dr Forbes that the test results he got back from Gallo

94

- 1 in 1984 were positive?  
 2 **A.** I think, as I said yesterday, my impression of his  
 3 thoughts at the time was: well, we had had to use some  
 4 commercial product at the Glasgow Royal Infirmary  
 5 centre, firstly for these inhibitor patients where  
 6 there was no alternative, there's nothing made in  
 7 Scotland or the UK that could treat these patients  
 8 and, secondly, because the efforts of SNBTS mean that  
 9 we were pretty well self-sufficient in Scotland  
 10 by 1983.

11 I think that was the time when he thought,  
 12 well, at least we're only using the Scottish  
 13 concentrate now, rarely have to use the commercial.  
 14 And I think he was hopeful that that might have solved  
 15 the problem because AIDS had not yet entered the  
 16 Scottish donor pool. Well, I'm sure you know what  
 17 Professor Ludlam's response was when he got his  
 18 results that all his patients who had been treated  
 19 with SNBTS concentrates, a large number had become  
 20 positive. I think it came as a great shock.

- 21 **Q.** I want to ask you next about reporting hepatitis  
 22 reactions. If you had a patient who had an acute  
 23 hepatitis reaction to a factor concentrate, what was  
 24 the process in terms of reporting that to the  
 25 manufacturer, whether that be SNBTS or

95

1 a pharmaceutical company; was it reported and what  
 2 information would be provided?

- 3 **A.** So, firstly, it would -- well, if there was a clinical  
 4 event, like a patient becomes jaundiced, it was  
 5 standard practice to investigate that case of jaundice  
 6 in somebody who had had a blood transfusion.

7 I can remember from the mid-1970s when  
 8 I started, Dr McDonald marching across and saying,  
 9 "Right, let's have all the information about the  
 10 patient, let's have the tests, we're going to check  
 11 the products, and we must get that very rapidly to  
 12 SNBTS, as the manufacturer". And it was important to  
 13 contact the public health/infectious diseases people  
 14 for investigation. So that would be investigated.

- 15 **Q.** Over what -- my question was about reporting to the  
 16 manufacturer. Over what period of time, as far as you  
 17 can recall, was it the practice of the Royal Infirmary  
 18 to report an acute hepatitis reaction to the  
 19 manufacturer? Was that always the position from 1975  
 20 onwards?  
 21 **A.** Oh, I think before that. I think.  
 22 **Q.** I put it at 1975 because that's when you arrived,  
 23 professor, rather than asking you to look back before  
 24 your arrival.  
 25 **A.** It was my understanding, as a medical student, that if

96



1 somebody got jaundice and had had a recent blood  
 2 transfusion or blood product transfusion, it was very  
 3 important for that to be reported by whoever, general  
 4 practitioner, hospital doctor, to the public  
 5 health department. I mean, hepatitis B at least was  
 6 a notifiable disease. It was a legal obligation to  
 7 report to the -- well, within a hospital it would be  
 8 reported to the haematologist, the blood bank locally,  
 9 and they would ring up the -- well, if it was -- say,  
 10 it was plasma, cryoprecipitate, they would report it  
 11 to the Regional Blood Transfusion Service in whichever  
 12 part of Scotland it was, and then, if it was  
 13 a concentrate centrally prepared by the PFC, the  
 14 Protein Fractionation Centre in Edinburgh. So it was  
 15 very important to rapidly report it, for the very good  
 16 reason that if -- they could trace the donor if it was  
 17 single unit plasma cryoprecipitate, or, if it was  
 18 a batch of concentrate, they would trace all the  
 19 donors and try to work out what the source of the  
 20 problem was.

21 **Q.** Do you know, again whether at the Glasgow Royal  
 22 Infirmary in the time that you were there, if there  
 23 was a batch which was identified as having caused such  
 24 a reaction in a patient, was there follow-up by the  
 25 Royal Infirmary of other patients who'd received

97

1 a batch implicated in possible hepatitis transmission?

2 **A.** Yes, that would routinely be done by the -- our  
 3 haematology colleagues in the blood and blood products  
 4 laboratory and by SNBTS or the alternative  
 5 manufacturer. There was a very rigid system about  
 6 what had to be done.

7 **Q.** Did that system encompass telling the patient who had  
 8 received the batch, or patients who'd received the  
 9 batch or been given it for home treatment?

10 **A.** Oh, absolutely. You would have to say to the patient,  
 11 "You've probably got this through blood transfusion,  
 12 and we're telling you." And, well, if you have  
 13 jaundice, you obviously have to treat any symptoms of  
 14 the jaundice. Most of these patients, from memory,  
 15 would be immediately transferred to Ruchill Hospital  
 16 or the appropriate infectious diseases ward, and there  
 17 they would be informed about the risk of infecting  
 18 other people. And during the acute jaundice, there  
 19 would be strict management of blood and body fluids,  
 20 and then any sexual contacts would be followed up and  
 21 tested as well. It was a standard procedure.

22 **Q.** Forgive me, my question was not sufficiently clear.  
 23 I wasn't talking about the patient who had the acute  
 24 reaction but other patients who had received the batch  
 25 but not, or at least not yet, reported any reaction,

98

1 would they be proactively contacted to ask them to  
 2 bring the batch back in or to be told to look out for  
 3 signs of jaundice or the like?

4 **A.** Yes, that would be my understanding. That would be  
 5 arranged by Dr Davidson and colleagues.

6 **Q.** Do you know whether it was routine for the  
 7 Royal Infirmary to send details of clinical reactions  
 8 to blood products and patients' ALT levels to UKHCDO,  
 9 to Oxford?

10 **A.** So, as I understand it, UKHCDO from the start of its  
 11 database in, what, 1970 or whatever, routinely  
 12 collected information on jaundice, and that was  
 13 produced in the regular reports. If it was  
 14 asymptomatic transaminase-itis, as we used to call it  
 15 there, I think that took a bit longer before being  
 16 systematically, collected. And I think it would be  
 17 some time during the 1970s, but, you know, that was  
 18 before my time. I think the dates, you'd want to ask  
 19 UKHCDO.

20 **Q.** Do you know -- again, if you don't, please say so --  
 21 what reports were made of viral hepatitis as a  
 22 notifiable disease to the chief administrative medical  
 23 officer, in respect of Glasgow Royal Infirmary  
 24 bleeding disorder patients in the period from when you  
 25 began there, 1975 to the early '90s?

99

1 **A.** The Chief Medical Officer, you would report it to  
 2 the -- you would report it -- well, through the  
 3 process, as I've described, of Blood Transfusion  
 4 Services. And the notification of hepatitis would be  
 5 to local the public health department.

6 **Q.** So the chief administrative --

7 **A.** *(Overspeaking)*

8 **Q.** To the chief administrative medical officer of the  
 9 local area health board I think was the requirement,  
 10 but that doesn't matter, I think.

11 The question is: do you know how many reports  
 12 were made of viral hepatitis from 1975 onwards, in  
 13 respect of Royal Infirmary bleeding disorder patients?

14 **A.** I couldn't tell you the number because, as you know, I  
 15 wasn't regularly involved in clinic reviews or  
 16 anything until I became a consultant.

17 **Q.** I asked you yesterday or the day before about  
 18 record-keeping systems. Do you know whether records  
 19 were held separately from the type of records you've  
 20 described under the name of research? So research  
 21 records relating to patients.

22 **A.** No. I think they were all -- every patient had  
 23 a folder within the filing cabinets, and in that we  
 24 tried, as I said, to always keep the patient's entire  
 25 case records if possible but as a fail-safe because

100

1 those would go off to surgeons or other things from  
 2 time to time, and we always ask for those to be  
 3 returned. We had a kind of file of the basic details  
 4 of the patient so we knew exactly who they were, what  
 5 they had, and what to treat them with as they attended  
 6 as emergencies.

7 The position with research was that any  
 8 relevant consent forms or information sheets would be  
 9 put that into that file, as far as I know. There  
 10 would also be files for keeping track of studies. The  
 11 ones I recall are when all the haemophilia centres in  
 12 Scotland were doing trials of clinical efficacy and  
 13 safety of the high purity SNBTS products in the 1990s.  
 14 Each centre would keep a file of the patients enrolled  
 15 into these studies as a study file, if you see what  
 16 I mean, so that could be reviewed. SNBTS wanted to  
 17 collate the numbers and things from these trials, and  
 18 those would be kept in a study file as well as in the  
 19 individual patient files. That was my memory.

20 **Q.** So if you had, for example, by reference to some of  
 21 the research that we looked at earlier this afternoon,  
 22 professor, the studies by Dr Froebel, or the  
 23 rheumatology study, or the immune function study, the  
 24 data that was collected in relation to individual  
 25 patients that was being analysed for the purposes of

101

1 those studies, might there be separate files -- call  
 2 them research call them study files, whatever you  
 3 will, but separate -- patient data,  
 4 patient-identifying data held separately from the core  
 5 patient records in the haemophilia centre?

6 **A.** So, for example, the laboratory studies. Are you  
 7 talking about the T cell subsets, that kind of --

8 **Q.** Well, any of the studies that we've looked at.

9 **A.** There would be a file of the collated results for  
 10 analysis -- patient number 1, patient number 2,  
 11 et cetera. The study investigator would obviously  
 12 keep a file of the results for analysis for the period  
 13 of the study.

14 **Q.** So does that mean there might exist in the  
 15 Royal Infirmary, or indeed in Ruchill, or wherever the  
 16 study was being conducted, specific test results, for  
 17 example, relating to individual patients that exists  
 18 outside of the haemophilia centre records?

19 **A.** Well, after the study, I think the rule was that the  
 20 investigator would keep the file of the study results  
 21 for a period of time, certainly up until publication,  
 22 and then I think it was good laboratory practice to  
 23 hang on to those files for a period of time. But  
 24 eventually, the results of these studies would be  
 25 destroyed, as with any other documentation.

102

1 **Q.** Did you in December 1975 see the World in Action  
 2 documentary? I'm sure you know which documentary I'm  
 3 referring to.

4 **A.** No, I didn't because didn't have a television at the  
 5 time, but it was in the newspapers, obviously; there  
 6 was some publicity about it. And I think it was  
 7 referred to -- sorry, what was the date of that?

8 **Q.** December 1975, I think. I hope I've got that right.

9 **SIR BRIAN LANGSTAFF:** Yes, I think 8 December.

10 **MS RICHARDS:** 8 December 1975. Thank you, sir.

11 **A.** '75. So I think, as I said, you got the programme  
 12 about symposium I attended at the Glasgow college, but  
 13 that was maybe --

14 **Q.** That was September.

15 **A.** That was September, right, yes. So it wouldn't be  
 16 mentioned then. No, I think I read about it in the  
 17 newspapers, and obviously it was discussed, you know,  
 18 just, "Oh, what about these commercial blood  
 19 products?" And I remember Dr Forbes and Dr Prentice  
 20 saying, oh, yes --in fact, Dr Forbes, I think, was  
 21 asked this at the Penrose Inquiry and he said, "Yes, I  
 22 thought it was shocking." And I seem to recall him  
 23 saying that, "Oh, well, better make sure that any  
 24 commercial products that are ordered by the  
 25 haematologist are not that kind of product," or words

103

1 to that effect. So there was talk about it.

2 **Q.** And then can I ask you -- nearly there, professor.  
 3 Can I ask you about something in your statement? If  
 4 we go, please, WITN3469013 and go to page 48. If we  
 5 look at the top paragraph, paragraph 16.2, you talk  
 6 there about the combination of DDAVP and the response  
 7 to injury:

8 "... (which raises levels of  
 9 Factor VIII/von Willebrand factor) often allowed us to  
 10 not have to give blood products."

11 I just wanted to ask you about what you say  
 12 there about the response to injury.

13 How does the response to injury work, and does  
 14 it work in a similar way to the desmopressin itself?

15 **A.** It's independent of the desmopressin. So response to  
 16 injury phenomenon was described in Glasgow Royal  
 17 Infirmary in the 1930s. It's a metabolic response,  
 18 but one of the components of the metabolic response is  
 19 that the endothelial cells, which line blood vessels,  
 20 respond by raising levels of von Willebrand factor,  
 21 which is an endothelial product, and that's the  
 22 carrier protein for Factor VIII. And that whole  
 23 complex of both of these things goes in -- rises in  
 24 the blood by somewhere between 50 per cent and up to  
 25 300 per cent; it's highly variable according to the

104

1 individual and according to the level of injury.  
 2 So the point is that if you have somebody with  
 3 mild haemophilia, then if they say have a 10 per cent  
 4 level of Factor VIII or a von Willebrand factor, their  
 5 response to injury could put that up to between 15 and  
 6 30, but highly variable. So it was important if you  
 7 had somebody with mild haemophilia and, say, an injury  
 8 to get a baseline level and then give the injection of  
 9 desmopressin and then assay the pre and post  
 10 desmopressin levels, you could find, not always, that  
 11 the combination of injury and desmopressin actually  
 12 allowed the patient to have a reasonably haemostatic  
 13 level and allow us not to have to give blood products.

14 So the point I'm making is that if you have  
 15 a patient without injury, desmopressin doesn't give  
 16 you that double benefit. But if you have response to  
 17 injury, that might help, and that might allow you to  
 18 carry on with desmopressin, rather than to have to use  
 19 a blood product.

20 **Q.** Does that response to injury, as you've described it  
 21 in your statement, rely upon the patient being  
 22 conscious or aware of the injury, or is it the body's  
 23 own response, as it were?

24 **A.** No, it's the body's own response.

25 **Q.** Then if we go on to -- no, we'll go back to I think

105

1 it's page 14 of your statement, paragraph 8.4.9, you  
 2 describe here the use of tranexamic acid. And we look  
 3 at the top of the next page, you go on to talk about  
 4 how:

5 "Tranexamic acid was shown to be effective in  
 6 minimising blood loss and hence minimising blood and  
 7 blood product use after dental extraction and other  
 8 types of minor surgery in patients with mild or  
 9 moderate haemophilia."

10 So this is a series of questions I have been  
 11 asked to ask of you, professor, by interested Core  
 12 Participants.

13 Would the infusion of tranexamic acid with  
 14 a clotting factor product, whether that's fresh frozen  
 15 plasma, cryoprecipitate, or concentrate, reduce the  
 16 amount of clotting factor product required?

17 **A.** The more important thing is that tranexamic acid,  
 18 which was usually given orally, so you could give it  
 19 before the dental extraction; it didn't have to be  
 20 infused, that was shown in these randomised trials by  
 21 Dr Forbes and colleagues in Glasgow but also in other  
 22 studies in Oxford and London -- those were the two big  
 23 trials that were done at this time -- that -- I mean,  
 24 tooth extraction was great because you could see  
 25 exactly if it was working or not. So the patient

106

1 would be kept in hospital, monitored, and the -- if  
 2 you read these papers, it says that the procedure was  
 3 to give tranexamic acid, watch the patient, and often  
 4 it worked. So the standard practice would be to give  
 5 a five- to seven-day course, and then just watch the  
 6 patient initially, and then discharge them and say  
 7 come back if you get any bleeding and, in fact, the  
 8 study by Dr Forbes had very careful documentation of  
 9 the quantitation of bleeding.

10 So it had a very dramatic effect on these minor  
 11 patients, that in many patients you didn't have to  
 12 give any blood or blood products and, by implication,  
 13 you reduced hepatitis risk.

14 **Q.** For a patient in respect of whom you've judged that  
 15 you can't justify on tranexamic acid, would the  
 16 combination of tranexamic acid and a clotting factor  
 17 product potentially either enhance the effect of the  
 18 clotting factor product or allow you to use less of  
 19 it?

20 **A.** Well, what we used to do in patients with mild  
 21 haemophilia and von Willebrand's disease was to give  
 22 both tranexamic acid and desmopressin. So you are  
 23 giving two synthetic drugs, and you crossed your  
 24 fingers and hoped that that would allow you not to  
 25 have to use a blood product.

107

1 **Q.** But was it ever used in combination with blood  
 2 products, I think is the question I've been asked to  
 3 explore with you.

4 **A.** I'm sorry. Yes, it would make sense because you are  
 5 quite right, you would hope that the blood product  
 6 required, the dose of it, would be less than if you  
 7 didn't give tranexamic acid.

8 **Q.** The last question I have, professor, is this: what  
 9 lessons do you think have been learned by you and your  
 10 colleagues at the Glasgow Royal Infirmary as a result  
 11 of the infections and, indeed, in many cases deaths of  
 12 patients treated there in the '70s and '80s?

13 **A.** Well, looking back, as I think many of us does, it was  
 14 a tragic emergence of transfusion-transmitted  
 15 infections. It must have been heart-breaking for my  
 16 colleagues, my predecessors Dr Forbes, Dr Prentice,  
 17 et cetera, to see it emerging. I and Dr Walker from  
 18 the late '80s/'90s were in the position that we  
 19 ourselves never prescribed these products. But,  
 20 nonetheless, anybody in our situation watching first  
 21 the HIV epidemic, but then the double whammy was  
 22 hepatitis, and that was very tragic because these are  
 23 patients who have suffered with the risk of AIDS, and  
 24 then they think, well, at least I haven't got that.  
 25 And then you've got hepatitis and this slow burn virus

108

1 which has been there for years but, you know, it's now  
2 becoming clinically evident. That was heart-breaking.  
3 That was heart-breaking to watch.

4 We tried our best by building up a team of the  
5 hepatologists, the ID colleagues, our nurses, social  
6 workers, psychologists. We made every effort to  
7 provide safer treatment, and I think in Scotland we  
8 succeeded in providing virus-safe treatment quite  
9 quickly. But it was very sad to watch, and we  
10 recognise that across the whole United Kingdom many  
11 patients and their families have questions about their  
12 treatments, and I think I and my colleagues hope your  
13 Inquiry will answer them, and we wish the Inquiry  
14 well.

15 **MS RICHARDS:** Professor, thank you. Those are my  
16 questions, sir. Do you have questions for  
17 Professor Lowe?

18 **Questioned by SIR BRIAN LANGSTAFF**

19 **SIR BRIAN LANGSTAFF:** Just a couple of short questions  
20 arising out of some of this afternoon's exchanges.

21 First, you can educate me a bit. Talking about  
22 the injury response and desmopressin, my understanding  
23 is that desmopressin works, in effect, by multiplying  
24 the effect of whatever Factor VIII there may be in the  
25 bloodstream by two to four times the amount.

109

1 The injury response, that presumably also  
2 liberates the Factor VIII protein which is already  
3 there, does it, in some respects? How does that --  
4 the question is this: do the two, that's desmopressin  
5 and the injury response, are they multiplicative in  
6 effect, or are they additive?

7 **A.** It's a very good question, and as a clinical scientist  
8 I often think, you know, how I would have tried to do  
9 that. I think probably I would have addressed that  
10 question, had we had it earlier, by measuring a very  
11 sensitive measure phase reaction called C reactive  
12 protein. And our laboratory became very interested in  
13 that and its evaluation as a risk predictor for  
14 thrombosis and that kind of thing.

15 The experiment that -- well, no, the study,  
16 should I say, that should have been done is: every  
17 patient who came in with mild haemophilia and an  
18 injury, it would have been very instructive to measure  
19 serial C reactive protein levels and correlate that  
20 with the extent of the Factor VIII response, and then  
21 on top of that to try and measure the effect of the  
22 desmopressin response, and that would give some  
23 quantitative answer to your question. I don't know.  
24 There's no doubt they had an additive effect.

25 **SIR BRIAN LANGSTAFF:** The second question isn't

110

1 a question, really; of just borrowing from your expert  
2 knowledge for a moment. It's about the question of  
3 the testing which was done.

4 You mentioned that Dr Forbes may have been  
5 surprised when he got the results back in  
6 October/September of 1984. Two questions arise out of  
7 that. Would you have expected the study which was  
8 reported by -- which you told us about this morning --  
9 reported in the BMJ in, I think, it was August 1983  
10 dealing with T cell levels and ratios, that might have  
11 alerted someone, I suppose, to the possibility that  
12 patients treated with Scottish concentrate or  
13 commercial concentrate, in either case, might be on  
14 their way to getting AIDS.

15 **A.** I think that's right, Sir Brian. Yes, and it's been  
16 a recurring theme. You know, what was AIDS due to?  
17 The discussion of both the Froebel paper in Glasgow  
18 and Professor Ludlam's parallel experience in  
19 Edinburgh was: what are the possibilities?

20 I was very interested, actually, in  
21 Professor Ludlam's comment last week, because I hadn't  
22 thought about this before, and he said: I think I've  
23 only just realised that the -- probably the main cause  
24 of these low -- these abnormalities in  
25 T lymphocytes -- and you mentioned earlier this paper

111

1 that Dr Madhok did, saying the HIV negative patients  
2 also had this phenomenon, so it wasn't HIV, what was  
3 it due to?

4 I think Dr Ludlam probably told you the answer  
5 last week. He said: I've only just realised that the  
6 Factor IX patients have got a completely different  
7 preparation of concentrate, which did not have  
8 immunoglobulin levels. They never had these  
9 abnormalities. It was only the Factor VIII patients.  
10 And it's probably the immunoglobulin content of the  
11 concentrate, which was quite high, which was  
12 responsible. So it may take 30 years to work out the  
13 answers to these questions, but I think that was  
14 probably it.

15 I would ask the question: suppose it had been  
16 the other way round, suppose it was the Factor IX  
17 concentrates and the minority of patients, who had  
18 haemophilia B, who had all the abnormalities, and the  
19 Factor VIII preparations for whatever reason had no  
20 immunoglobulins. We would have never seen these  
21 abnormalities. It's one of these questions with the  
22 retrospectoscope to say: well, we didn't know the  
23 answer then, and it may have taken us 30 years to  
24 realise the answer now.

25 I think the point I'm making is that, suppose

112

1 we had very pure concentrates in those times, which we  
 2 didn't, we wouldn't have seen these changes in  
 3 lymphocyte count, and maybe we would have realised  
 4 that it was definitely a virus even before HTLV-III  
 5 was discovered.  
 6 **SIR BRIAN LANGSTAFF:** I'll come back to that in a moment,  
 7 but the thing which has been puzzling me a bit is  
 8 this: if a test is done and a sample is sent off for  
 9 a test, you might expect a result back. You might  
 10 know what result you would like to see but the whole  
 11 point of the test is finding out what the result is,  
 12 isn't it? I mean, that must be logical, otherwise why  
 13 would you test, if you already know the answer?  
 14 **A.** Well, you're testing to see what, in UK patients with  
 15 haemophilia, what changes you might see --  
 16 **SIR BRIAN LANGSTAFF:** I'm sorry, we're at cross -- I'm  
 17 sorry for stopping you, I don't mean to be rude and  
 18 cut across you, please, but it's just I'm thinking now  
 19 of the -- what's puzzled me a little bit about the  
 20 reaction of Dr Forbes -- because you have described  
 21 how, when he got the test back, he spent quite some  
 22 time really thinking about how on earth to manage the  
 23 consequences of the results which had come through,  
 24 and you have told me how he had to formulate the  
 25 involvement of counselling and draft a letter and so

113

1 on.  
 2 If he sent off samples for a test, what has  
 3 been puzzling me is why he didn't expect that they  
 4 might come back with a result which showed that some  
 5 were positive and he'd have to deal with that, and  
 6 prepare for it in advance.  
 7 The point about asking about the 1983 study was  
 8 that that might have given him all the more cause for  
 9 thinking, well, there might just be something going on  
 10 here. Because at that stage he wouldn't have given  
 11 the explanation which Professor Ludlam gave me last  
 12 week or so: because he wouldn't have known it. He  
 13 would just have seen an amber light, if not a red one,  
 14 warning him that there might be something up.  
 15 So I've been wondering, did he not contemplate  
 16 beforehand what he might do if the results came back  
 17 as they did or something like it? You can help me  
 18 with that. Did he ever mention to you or were you  
 19 aware that he might have been thinking before the  
 20 results came back as to what to do if they did show  
 21 a problem?  
 22 **A.** So can I be clear, Sir Brian, you're talking about  
 23 1983 and the results of --  
 24 **SIR BRIAN LANGSTAFF:** I'm talking about '84, the tests  
 25 coming back showing there are positive HIV infections,

114

1 sero-positivity in a number of patients.  
 2 The question is, really, the samples are sent  
 3 off from stored sera to the laboratory, Gallo's  
 4 laboratory, they come back, there is shock and horror  
 5 because they are positive. The question really is why  
 6 didn't you -- not you, personally, but why wasn't it  
 7 anticipated that that might happen? Because that's  
 8 the whole point of testing. And all the more so --  
 9 this is where 1983 comes in -- all the more so because  
 10 there might have been a red flag flying or a warning,  
 11 amber light, however one describes it, from the year  
 12 before, given the results of the T cell study in  
 13 August.  
 14 So the question for you, with that  
 15 introduction, is: did Dr Forbes give you any  
 16 indication that he had, in advance of the results  
 17 coming back, thought about what he might do if they  
 18 were positive?  
 19 **A.** I don't know, Sir Brian, because, you know --  
 20 **SIR BRIAN LANGSTAFF:** Can you remember anything that he  
 21 said which might indicate that he had thought about  
 22 it?  
 23 **A.** No, I didn't. So, as you know, I was working on  
 24 another unit, I was on summer holidays, so I knew  
 25 a bit about AIDS in general but the first I heard

115

1 about Dr Forbes getting the results was him saying,  
 2 "Right, we've got some results back and can you come  
 3 and meet with Dr Melbye and discuss the paper that  
 4 we're going to put together."  
 5 So during that time, when he said, "Right,  
 6 I think we should send the samples off", I had no  
 7 interaction with Dr Forbes, I didn't know what was  
 8 being done. So I can't tell you what he was thinking  
 9 at that time. All I know was he said, "It's bad news,  
 10 we've got these results, and I'm trying to struggle  
 11 what to do with them". And we discussed at length  
 12 yesterday the ethical problems that he faced,  
 13 particularly -- I mean, I was there when Dr Froebel  
 14 said, "You do know that this not a test that you can  
 15 provide reliable clinical information", and I think  
 16 I saw a moment when he thought: oh my God, you know,  
 17 I've got the information, but Dr Follett tells me --  
 18 there's no way, as a local clinical virologist, he  
 19 could defend a clinician giving an unreliable result,  
 20 a false positive or a false negative.  
 21 And he said, "What we all have to do is to get  
 22 a reliable test but, meantime, go ahead and, you know,  
 23 say that we've done the study, there is this public  
 24 health aspect, as we have to, you know, change the  
 25 non-heat-treated concentrate ASAP to prevent any

116

1 further things" -- and that was the important thing --  
 2 "and you have to communicate that there's a risk now  
 3 for patients in Scotland and advise them about  
 4 precautions with blood, sexual partners" -- you know,  
 5 that's the public health imperative, as I said  
 6 yesterday. That was very clear.

7 The difficulty then, which I think Dr Forbes  
 8 addressed very quickly, was to encourage Dr Follett to  
 9 get a reliable test as soon as possible. As everybody  
 10 does. It wasn't just Glasgow. As I said, Dr Tedder,  
 11 at this AIDS meeting in February, you're -- read the  
 12 minutes, he says, "Oh, my test's not very good  
 13 either". I mean, he was concerned -- Dr Craske was  
 14 concerned. He said these are not tests that are  
 15 reliable. And that was a bit of a problem.

16 So when people say, as the newspapers do in  
 17 this Inquiry, patients should have been told  
 18 immediately, well, that's difficult when you have  
 19 a situation where a reliable test is still coming  
 20 along. You can give a general message, but it would  
 21 be devastating to be told, "It's okay, you're  
 22 HIV negative", and then a few weeks or months later to  
 23 be told, "I'm sorry, it's positive", or vice versa.  
 24 I mean, there are consequences to that.

25 So I think that in diagnostics the clinician

117

1 has to be very aware of the limitations of a test.

2 And I think that also gave Dr Forbes the window  
 3 of getting an experienced counsellor in our centre to  
 4 intensively focus upon speaking to the patients about  
 5 AIDS tests, and particularly focusing on those  
 6 patients that Dr Forbes knew to be positive. Because  
 7 he wanted to start addressing the subject of them --  
 8 preparing them to think about the test and then  
 9 getting the fresh samples done for the validated  
 10 response.

11 So I think -- I can hear what you're saying,  
 12 Sir Brian, but I think the correct ethical decision  
 13 that Dr Forbes made was not to instantly ring up the  
 14 patient and say, "A research test is positive but it  
 15 might not be positive"; I don't think that would have  
 16 been appropriate medical practice.

17 **SIR BRIAN LANGSTAFF:** Thank you very much. That's all  
 18 I ask, Ms Richards.

19 **MS RICHARDS:** Sir, I should have said Mr Bowie, who  
 20 represents Professor Lowe, has indicated to me he  
 21 doesn't have any questions for him.

22 Professor Lowe is there anything that you  
 23 wanted to add?

24 **A.** No, nothing to what I have said already, thank you.

25 **MS RICHARDS:** So, sir, that concludes for today.

118

1 In terms of the timetable for when we resume,  
 2 I can indicate what the first week is going to be.

3 **SIR BRIAN LANGSTAFF:** First, let me just say something to  
 4 Professor Lowe, because you deserve our thanks.

5 We've invaded your home. You have given us --  
 6 in your, if I may describe it, your chatty way, you  
 7 have illustrated or enlivened perhaps, with anecdotes  
 8 from your personal history and those around you -- an  
 9 insight into what happened during your time in Glasgow  
 10 and your best efforts to tell us what you may have  
 11 picked up at times when you weren't really concerned  
 12 with haemophilia care. And you've given us a huge  
 13 amount of detail. And you're an enthusiast, I think,  
 14 for detail, such when you can remember it.

15 So thank you for that and for allowing us to  
 16 come into your home and take your evidence from there.  
 17 It's been three days, three half days, perhaps a bit  
 18 more than half days possibly, but thank you.

19 **A.** Thank you, Sir Brian.

20 **MS RICHARDS:** Sir, so in terms of when we resume in  
 21 January, because today concludes the hearings  
 22 for 2020, we resume on 12 January, when we will hear  
 23 evidence from Dr David Bevan. That's the Tuesday of  
 24 that week.

25 On the Wednesday, 13 January, there will be

119

1 a presentation by me in relation to the Manchester  
 2 Haemophilia Centre and on the 14th, the Thursday, we  
 3 will hear from Dr Janet Shirley.

4 We had previously scheduled for that week  
 5 a presentation and possibly evidence about haemophilia  
 6 treatment and care in Northern Ireland. That will now  
 7 be in the week of 29 March 2021, when there was  
 8 a presentation on the Belfast Haemophilia Centre.  
 9 There will be evidence called from Dr Gary Benson.  
 10 It's possible that there may be further evidence.  
 11 We're still making some enquiries in that regard.

12 In relation to the timetable in between, there  
 13 are still some --

14 **SIR BRIAN LANGSTAFF:** I will say something about that in  
 15 a moment.

16 **MS RICHARDS:** They will be published on the website in due  
 17 course.

18 **SIR BRIAN LANGSTAFF:** Thank you very much.

19 This has been the last day of hearings for this  
 20 year, and like so much in the New Year period, it's  
 21 a chance both to look back and to look forward.

22 It's now two and a half years since the Inquiry  
 23 began. It would have been great if I had been in  
 24 a position to present its report before 2021 begins.

25 Not a week goes past without my remembering that speed

120

1 is important, but I promised also to be reasonably  
 2 thorough and I would hope that, whatever your  
 3 perspective on the Inquiry, you can see for yourselves  
 4 that the Inquiry has been and is being just that.  
 5 Without the time taken in preparation and the  
 6 evidence given in writing and orally, often deeply  
 7 moving, often troubling, always valuable, the Inquiry  
 8 would not have been able to ask the questions  
 9 Ms Richards and her team so searchingly have done over  
 10 the past three months. The evidence of one clinician  
 11 is not always easy to reconcile with that of another,  
 12 or the documents, or the evidence of those infected  
 13 and affected. Like all of us, they are people. They  
 14 have different ways of looking at what happened and  
 15 different abilities to address it when recalling the  
 16 past. But overall a broad picture of what happened  
 17 and why is slowly beginning to emerge for me and  
 18 a foundation for concluding what might have been done  
 19 is gradually being laid.  
 20 Thank you for your patience so far through the  
 21 current pandemic. Many of you will have wanted to see  
 22 witnesses give their evidence in person rather than on  
 23 a big screen, and I've little doubt that many of you  
 24 would have welcomed the collective comfort of meeting  
 25 in Fleetbank to hear that evidence. Witnesses too

121

1 have said they would rather be here in person. You  
 2 know I would have preferred it. But we've done what  
 3 we could so far as the restrictions have allowed it.  
 4 So much for looking back. What about the  
 5 future? Well, I hope that from January it will be  
 6 possible to hear more evidence in person. Indeed, you  
 7 will see that the timetable, some of which Ms Richards  
 8 has outlined, envisages this. Obviously, we may have  
 9 to adapt for the whim of the virus.  
 10 That evidence will continue to come from  
 11 haemophilia doctors, and then towards the end of  
 12 January we will hear from the expert group of  
 13 medical ethics. They may have had something to  
 14 reflect on.  
 15 In February and in March, we shall take  
 16 evidence on The Haemophilia Society and trusts and  
 17 schemes. In late March, on Treloars school and, as  
 18 you just heard, in the Belfast Haemophilia Centre.  
 19 Counsel team will also give a presentation on the  
 20 smaller haemophilia centres.  
 21 After Easter, we plan to take evidence from  
 22 campaigners and then Government witnesses, including  
 23 ministers and civil servants, those who had  
 24 responsibility for decisions taken at the time within  
 25 Government who can best shed a light on the events

122

1 this Inquiry is charged with investigating.  
 2 Looking further ahead still to the autumn, then  
 3 we will be scrutinising the evidence about the blood  
 4 services and pharmaceutical suppliers. Infections  
 5 transmitted by blood transfusions will come to the  
 6 fore in many of those hearings.  
 7 But, as always, the hearings are just the  
 8 visible tip of the Inquiry's work. The great bulk of  
 9 the work continues until the hearings begin again in  
 10 January, even while this Inquiry room stands empty,  
 11 though you will, I am sure, understand that there are  
 12 one or two days or so during the Christmas period when  
 13 no-one is likely to be at work.  
 14 Just to emphasise the sheer scale of the  
 15 investigation. More than 14 million pages have been  
 16 reviewed for potential relevance. This material has  
 17 come from over 600 document providers, including  
 18 international, archives, trusts, haemophilia centres  
 19 and Government bodies, as well as from individuals.  
 20 The documents stretch back to the 1920s. There is  
 21 more yet to come but throughout be assured I am  
 22 conscious of the passing of time.  
 23 Finally, let me turn from past and future to  
 24 present. Christmas is an enjoyable time of the year  
 25 for many but it can be a very difficult time for those

123

1 who have lost loved ones or are struggling with the  
 2 difficulties of infection, especially this  
 3 particularly challenging year which has, more than  
 4 most, brought the realities of infections home to  
 5 people. I hope that whoever you are, you are able to  
 6 make the best of this holiday season. I'm sure you  
 7 will join me in wishing all involved in this Inquiry,  
 8 in whatever way, a better 2021.  
 9 Thank you.  
 10 **(5.41 pm)**  
 11 **(Adjourned until Tuesday, 12 January 2021)**  
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 17  
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 19  
 20  
 21  
 22  
 23  
 24  
 25

1	<b>INDEX</b>	
2	PROFESSOR GORDON LOWE, continued .....	1
3	Further questioned by MS RICHARDS .....	1
4	Questioned by SIR BRIAN LANGSTAFF .....	109
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		



<p><b>MS RICHARDS: [19]</b> 1/21 59/13 59/17 59/24 60/5 79/2 80/15 80/21 81/9 89/21 89/23 90/8 90/13 103/10 109/15 118/19 118/25 119/20 120/16</p> <p><b>NEW SPEAKER: [1]</b> 60/2</p> <p><b>SIR BRIAN LANGSTAFF: [26]</b> 1/4 1/14 59/16 59/19 59/23 60/4 78/22 79/3 80/14 80/18 81/1 89/20 89/22 90/4 90/11 103/9 109/19 110/25 113/6 113/16 114/24 115/20 118/17 119/3 120/14 120/18</p> <hr/> <p><b>'70s [1]</b> 108/12 <b>'75 [1]</b> 103/11 <b>'80s [2]</b> 108/12 108/18 <b>'80s/'90s [1]</b> 108/18 <b>'84 [1]</b> 114/24 <b>'85 [1]</b> 52/10 <b>'87 [1]</b> 55/7 <b>'89 [1]</b> 55/7 <b>'90s [2]</b> 99/25 108/18 <b>'91 [1]</b> 19/2 <b>'91/'92 [1]</b> 19/2 <b>'92 [1]</b> 19/2 <b>'93 [1]</b> 11/20 <b>'generic' [1]</b> 69/18</p> <hr/> <p><b>0</b></p> <p><b>001 [1]</b> 53/14 <b>014 [2]</b> 2/2 68/5 <b>020 [1]</b> 64/13 <b>043 [2]</b> 33/12 41/3</p> <hr/> <p><b>1</b></p> <p><b>10 February [1]</b> 64/18 <b>10 October 2002 [1]</b> 54/5 <b>100 [1]</b> 24/23 <b>100 miles [1]</b> 16/3 <b>100-odd [1]</b> 1/17 <b>109 [1]</b> 60/11 <b>11 December 2020 [1]</b> 1/1 <b>114 [1]</b> 61/14 <b>12 [2]</b> 49/15 124/11 <b>12 February [1]</b> 3/2 <b>12 February 1990 [1]</b> 2/5 <b>12 January [1]</b> 119/22 <b>13 [1]</b> 21/21 <b>13 January [1]</b> 119/25 <b>139 [2]</b> 33/20 34/14</p>	<p><b>14 [1]</b> 106/1 <b>14 million [1]</b> 123/15 <b>14th [1]</b> 120/2 <b>15 [2]</b> 49/15 105/5 <b>15 per cent [2]</b> 21/21 24/1 <b>16 September 1996</b> <b>[1]</b> 60/19 <b>16.2 [1]</b> 104/5 <b>19 Glasgow [1]</b> 45/10 <b>19 patients [1]</b> 47/14 <b>1920s [1]</b> 123/20 <b>1930s [1]</b> 104/17 <b>1962 [1]</b> 84/10 <b>1970 [2]</b> 7/7 99/11 <b>1970s [5]</b> 4/20 13/13 32/14 96/7 99/17 <b>1975 [8]</b> 23/19 96/19 96/22 99/25 100/12 103/1 103/8 103/10 <b>1980 [3]</b> 35/13 38/12 86/7 <b>1980s [6]</b> 5/10 8/16 26/9 40/1 40/2 92/23 <b>1981 [1]</b> 35/17 <b>1982 [1]</b> 44/15 <b>1983 [15]</b> 42/6 43/15 43/17 44/14 48/3 81/17 81/23 87/10 94/11 94/20 95/10 111/9 114/7 114/23 115/9 <b>1984 [3]</b> 94/4 95/1 111/6 <b>1985 [12]</b> 9/13 20/9 21/10 21/18 22/4 23/19 23/21 38/12 40/20 52/12 68/17 82/7 <b>1986 [2]</b> 20/24 33/13 <b>1987 [3]</b> 24/13 24/22 25/4 <b>1988 [2]</b> 73/16 93/19 <b>1990 [2]</b> 2/5 3/5 <b>1990s [5]</b> 8/3 13/11 20/5 26/2 101/13 <b>1991 [4]</b> 11/4 13/23 18/5 18/19 <b>1992 [1]</b> 18/19 <b>1992/'93 [1]</b> 11/20 <b>1995 [1]</b> 9/22 <b>1996 [6]</b> 12/5 31/24 60/12 60/19 61/18 62/1</p> <hr/> <p><b>2</b></p> <p><b>2.00 pm [1]</b> 1/2 <b>2000 [3]</b> 64/18 88/3 89/16 <b>2001 [1]</b> 56/20 <b>2002 [5]</b> 53/15 53/19 54/5 56/21 58/19</p>	<p><b>2010 [1]</b> 89/16 <b>2011 [1]</b> 8/6 <b>2020 [2]</b> 1/1 119/22 <b>2021 [4]</b> 120/7 120/24 124/8 124/11 <b>25 August 1983 [1]</b> 43/15 <b>25 October 2002 [1]</b> 53/15 <b>25 September 2002</b> <b>[1]</b> 53/19 <b>26 February 1990 [1]</b> 3/5 <b>26 November [1]</b> 58/10 <b>27 November [1]</b> 58/13 <b>29 [1]</b> 49/11 <b>29 March [1]</b> 120/7 <b>291 [2]</b> 33/20 34/14</p> <hr/> <p><b>3</b></p> <p><b>3.31 pm [1]</b> 59/25 <b>30 [1]</b> 105/6 <b>30 September [1]</b> 63/8 <b>30 years [3]</b> 80/13 112/12 112/23 <b>30.12 [1]</b> 24/9 <b>300 per cent [1]</b> 104/25</p> <hr/> <p><b>4</b></p> <p><b>4.00 pm [1]</b> 60/3 <b>4.15 [1]</b> 59/16 <b>48 [1]</b> 104/4</p> <hr/> <p><b>5</b></p> <p><b>5.41 pm [1]</b> 124/10 <b>50 per cent [1]</b> 104/24 <b>57 [2]</b> 34/3 35/1 <b>57 patients [1]</b> 38/9</p> <hr/> <p><b>6</b></p> <p><b>600 [1]</b> 123/17 <b>69 [1]</b> 24/9</p> <hr/> <p><b>8</b></p> <p><b>8 December [1]</b> 103/9 <b>8 December 1975 [1]</b> 103/10 <b>8 January 1985 [1]</b> 82/7 <b>8.4.9 [1]</b> 106/1</p> <hr/> <p><b>9</b></p> <p><b>90s [3]</b> 17/13 22/13 23/13</p> <hr/> <p><b>A</b></p> <p><b>Aberdeen [1]</b> 93/13 <b>abilities [1]</b> 121/15</p>	<p><b>able [7]</b> 23/2 37/18 38/25 52/6 59/17 121/8 124/5 <b>abnormal [3]</b> 19/15 20/20 26/16 <b>abnormalities [12]</b> 21/2 21/8 34/1 42/7 42/15 43/3 43/6 45/3 111/24 112/9 112/18 112/21 <b>abnormality [1]</b> 49/24 <b>about [169]</b> <b>absence [5]</b> 49/6 50/21 54/2 54/16 64/2 <b>absolutely [3]</b> 46/7 79/6 98/10 <b>Abstract [1]</b> 42/11 <b>abuse [1]</b> 25/16 <b>accept [5]</b> 87/2 87/4 89/13 89/16 89/17 <b>acceptable [1]</b> 69/13 <b>accepted [4]</b> 8/6 43/15 43/17 66/15 <b>access [3]</b> 30/3 31/16 54/23 <b>accident [1]</b> 84/3 <b>according [2]</b> 104/25 105/1 <b>accuracy [1]</b> 82/11 <b>accurate [2]</b> 3/18 8/1 <b>acid [9]</b> 106/2 106/5 106/13 106/17 107/3 107/15 107/16 107/22 108/7 <b>acknowledgement [1]</b> 41/5 <b>across [12]</b> 8/3 9/9 11/5 75/9 78/8 80/9 81/4 93/23 93/25 96/8 109/10 113/18 <b>acting [2]</b> 69/12 71/4 <b>action [7]</b> 56/15 57/18 69/18 76/10 78/25 80/17 103/1 <b>actions [4]</b> 65/12 66/10 75/15 79/25 <b>activated [1]</b> 93/10 <b>active [1]</b> 74/24 <b>activities [1]</b> 63/5 <b>actual [2]</b> 10/5 47/13 <b>actually [6]</b> 31/20 37/18 39/6 86/10 105/11 111/20 <b>acute [5]</b> 43/5 95/22 96/18 98/18 98/23 <b>adapt [1]</b> 122/9 <b>add [5]</b> 7/17 22/13 40/23 63/7 118/23 <b>added [2]</b> 17/19 83/2 <b>addition [4]</b> 34/5 48/20 63/7 67/7 <b>additional [1]</b> 46/8</p>	<p><b>additive [2]</b> 110/6 110/24 <b>address [2]</b> 68/18 121/15 <b>addressed [2]</b> 110/9 117/8 <b>addressing [1]</b> 118/7 <b>Adjourned [1]</b> 124/11 <b>adjudged [1]</b> 75/16 <b>administrative [3]</b> 99/22 100/6 100/8 <b>admitted [2]</b> 17/21 40/8 <b>adult [1]</b> 81/12 <b>advance [4]</b> 7/19 12/18 114/6 115/16 <b>advantage [1]</b> 84/20 <b>advertised [1]</b> 90/20 <b>advice [14]</b> 26/24 58/1 65/13 65/18 66/13 66/19 70/22 71/7 71/18 72/19 73/21 74/18 75/11 75/25 <b>advisable [2]</b> 71/22 71/24 <b>advise [2]</b> 2/24 117/3 <b>advised [3]</b> 40/11 52/19 55/25 <b>advising [3]</b> 4/8 37/8 69/17 <b>advocating [1]</b> 77/7 <b>affected [1]</b> 121/13 <b>afford [1]</b> 93/14 <b>after [17]</b> 3/1 12/11 14/3 14/5 30/21 32/16 35/8 57/15 70/7 70/14 71/5 72/3 83/21 91/23 102/19 106/7 122/21 <b>afternoon [1]</b> 101/21 <b>afternoon's [1]</b> 109/20 <b>afterwards [1]</b> 86/11 <b>again [22]</b> 1/4 1/18 13/7 20/4 30/25 41/2 43/19 44/24 45/19 46/15 48/1 48/7 49/7 50/2 51/3 72/9 90/13 91/7 93/5 97/21 99/20 123/9 <b>against [3]</b> 3/16 22/9 43/1 <b>age [1]</b> 48/13 <b>aggregate [1]</b> 21/17 <b>ago [4]</b> 55/20 56/11 63/10 86/9 <b>agree [7]</b> 7/24 16/21 46/4 47/12 63/22 81/23 82/3 <b>agreed [13]</b> 12/22 27/18 28/21 54/6 56/17 58/8 63/1 64/2</p>	<p>71/6 71/14 72/3 72/22 93/12 <b>agreement [2]</b> 39/7 77/13 <b>ahead [4]</b> 58/23 70/10 116/22 123/2 <b>AIDS [48]</b> 2/4 3/11 5/11 7/14 8/9 8/15 43/5 43/10 44/19 45/13 46/18 46/20 47/7 47/15 47/17 48/14 51/23 52/23 68/12 68/15 68/16 68/19 68/24 69/12 73/3 73/11 73/18 73/21 75/13 76/5 82/2 83/6 83/6 83/11 83/16 85/8 92/6 94/3 94/8 94/9 94/23 95/15 108/23 111/14 111/16 115/25 117/11 118/5 <b>AIDS-type [1]</b> 8/9 <b>Aileen [1]</b> 58/1 <b>aim [1]</b> 36/5 <b>akin [1]</b> 7/25 <b>al [1]</b> 21/18 <b>alcohol [9]</b> 23/3 24/12 24/14 24/17 25/3 25/7 25/16 25/21 26/24 <b>alcoholics [1]</b> 28/19 <b>Aledort [1]</b> 21/19 <b>alerted [1]</b> 111/11 <b>all [96]</b> 1/11 6/3 6/10 6/24 10/10 12/1 12/9 13/12 13/17 13/19 14/8 14/22 15/15 15/17 16/24 17/9 18/12 18/24 19/10 20/11 20/14 20/17 20/19 20/21 21/1 21/20 22/5 22/23 24/4 27/15 28/7 29/2 29/8 30/16 30/19 30/24 31/7 35/25 36/12 36/16 36/17 38/6 39/10 39/19 43/18 45/21 47/6 48/18 49/16 51/8 56/1 56/21 58/11 58/12 66/15 67/4 68/14 73/1 73/23 74/19 74/24 74/25 75/3 75/8 75/18 77/3 77/18 78/3 80/1 80/9 81/4 83/25 84/15 84/18 84/18 85/22 86/19 86/24 88/21 90/16 92/24 94/19 95/18 96/9 97/18 100/22 101/11 112/18 114/8 115/8 115/9 116/9 116/21 118/17 121/13 124/7</p>
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<p><b>A</b></p> <p><b>allow</b> [4] 105/13 105/17 107/18 107/24</p> <p><b>allowed</b> [4] 93/24 104/9 105/12 122/3</p> <p><b>allowing</b> [1] 119/15</p> <p><b>almost</b> [1] 59/5</p> <p><b>along</b> [4] 15/14 33/16 49/7 117/20</p> <p><b>already</b> [8] 4/17 33/11 33/17 70/12 72/1 110/2 113/13 118/24</p> <p><b>also</b> [21] 15/7 16/17 20/18 20/21 29/7 36/17 41/13 56/4 62/16 62/18 64/22 65/13 80/15 94/13 101/10 106/21 110/1 112/2 118/2 121/1 122/19</p> <p><b>ALT</b> [1] 99/8</p> <p><b>alternative</b> [2] 95/6 98/4</p> <p><b>although</b> [1] 18/19</p> <p><b>always</b> [19] 12/6 13/11 13/20 30/10 31/1 77/17 78/16 80/7 84/23 91/18 92/12 92/24 96/19 100/24 101/2 105/10 121/7 121/11 123/7</p> <p><b>am</b> [8] 1/13 2/25 33/18 53/10 59/14 60/7 123/11 123/21</p> <p><b>amber</b> [2] 114/13 115/11</p> <p><b>America</b> [2] 21/19 46/1</p> <p><b>American</b> [6] 42/8 42/13 42/15 43/2 48/11 94/13</p> <p><b>amongst</b> [3] 45/17 49/9 92/24</p> <p><b>amount</b> [6] 49/24 50/21 53/12 106/16 109/25 119/13</p> <p><b>analysed</b> [2] 44/9 101/25</p> <p><b>analysing</b> [1] 41/21</p> <p><b>analysis</b> [5] 35/2 38/10 82/24 102/10 102/12</p> <p><b>anecdotes</b> [1] 119/7</p> <p><b>annual</b> [4] 4/23 54/5 54/9 56/5</p> <p><b>anonymous</b> [1] 56/2</p> <p><b>another</b> [13] 2/22 3/24 8/22 16/7 25/23 50/13 59/15 61/4 64/12 71/21 91/11 115/24 121/11</p>	<p><b>answer</b> [12] 12/14 22/23 38/25 48/22 53/8 67/23 109/13 110/23 112/4 112/23 112/24 113/13</p> <p><b>answered</b> [1] 30/2</p> <p><b>answers</b> [3] 16/8 51/17 112/13</p> <p><b>anti</b> [2] 31/8 39/17</p> <p><b>anti-hepatitis</b> [1] 31/8</p> <p><b>anti-nuclear</b> [1] 39/17</p> <p><b>antibody</b> [5] 11/3 11/7 11/16 15/12 49/16</p> <p><b>anticipated</b> [1] 115/7</p> <p><b>antigen</b> [9] 11/12 11/19 11/22 11/24 19/18 20/1 27/19 28/5 29/3</p> <p><b>antiviral</b> [1] 29/19</p> <p><b>any</b> [66] 6/17 10/20 12/13 14/7 14/13 19/19 20/22 22/8 23/8 23/22 24/20 26/4 26/20 26/25 27/20 30/3 32/9 32/19 32/20 32/20 32/24 33/1 33/18 37/21 39/8 40/23 45/9 45/25 48/3 48/25 51/21 52/3 52/8 52/12 54/3 54/16 55/15 59/3 61/8 63/2 64/5 65/19 66/18 73/9 75/16 76/9 78/14 80/4 82/14 87/9 88/20 88/22 90/3 90/12 98/13 98/20 98/25 101/7 102/8 102/25 103/23 107/7 107/12 115/15 116/25 118/21</p> <p><b>anybody</b> [1] 108/20</p> <p><b>anyone</b> [1] 1/4</p> <p><b>anything</b> [10] 7/18 15/20 23/16 27/16 32/22 77/6 81/25 100/16 115/20 118/22</p> <p><b>anyway</b> [2] 58/23 73/23</p> <p><b>apart</b> [2] 17/9 26/24</p> <p><b>apparent</b> [1] 43/10</p> <p><b>appear</b> [3] 54/12 77/12 79/20</p> <p><b>appearance</b> [1] 84/10</p> <p><b>appears</b> [2] 65/22 76/16</p> <p><b>appended</b> [1] 82/8</p> <p><b>applied</b> [2] 48/5 55/6</p> <p><b>appointed</b> [4] 28/21 61/16 61/19 85/17</p> <p><b>appointment</b> [4] 14/13 16/7 16/18 61/21</p> <p><b>appointments</b> [1]</p>	<p>14/20</p> <p><b>appreciate</b> [1] 10/2</p> <p><b>appreciated</b> [1] 62/14</p> <p><b>approach</b> [4] 8/9 9/9 48/4 48/25</p> <p><b>approaches</b> [1] 7/15</p> <p><b>appropriate</b> [15] 5/21 7/10 8/24 9/3 10/4 10/19 31/11 58/3 74/6 75/8 75/20 79/13 92/10 98/16 118/16</p> <p><b>approve</b> [1] 80/4</p> <p><b>approved</b> [1] 11/5</p> <p><b>April</b> [1] 83/14</p> <p><b>ARCH0003312</b> [1] 64/13</p> <p><b>archives</b> [1] 123/18</p> <p><b>are</b> [73] 1/7 1/12 1/14 1/15 1/18 2/4 4/3 15/19 18/24 19/18 19/21 22/24 23/24 26/18 28/12 28/18 28/19 29/25 30/11 32/13 33/15 34/25 37/8 37/18 38/25 39/11 39/12 39/19 39/20 39/20 39/25 41/19 42/8 43/4 43/8 43/10 45/1 45/3 53/13 54/2 57/7 57/15 60/7 65/8 77/7 77/8 79/20 81/13 83/25 101/11 102/6 103/24 103/25 107/22 108/4 108/22 109/15 110/5 110/6 111/19 114/25 115/2 115/5 117/14 117/14 117/24 120/13 121/13 123/7 123/11 124/1 124/5 124/5</p> <p><b>area</b> [1] 100/9</p> <p><b>argue</b> [1] 43/1</p> <p><b>argument</b> [1] 28/18</p> <p><b>arise</b> [2] 7/4 111/6</p> <p><b>arising</b> [2] 81/19 109/20</p> <p><b>Armstrong</b> [5] 53/16 56/6 56/13 57/19 57/22</p> <p><b>Armstrong's</b> [1] 57/4</p> <p><b>Aronstam</b> [9] 69/18 69/25 70/9 70/15 72/11 72/14 72/18 74/16 78/10</p> <p><b>around</b> [4] 13/10 26/12 60/5 119/8</p> <p><b>arrange</b> [1] 16/7</p> <p><b>arranged</b> [3] 29/19 83/20 99/5</p> <p><b>arrangement</b> [2] 14/14 93/22</p> <p><b>arrangements</b> [5]</p>	<p>1/22 14/17 39/2 47/13 84/14</p> <p><b>arranging</b> [1] 26/5</p> <p><b>arrival</b> [1] 96/24</p> <p><b>arrived</b> [3] 11/19 90/18 96/22</p> <p><b>arthritic</b> [1] 38/7</p> <p><b>arthritis</b> [8] 20/18 21/1 34/19 35/23 35/25 36/7 39/12 86/18</p> <p><b>article</b> [2] 42/3 49/4</p> <p><b>as</b> [227]</p> <p><b>ASAP</b> [1] 116/25</p> <p><b>aside</b> [1] 64/5</p> <p><b>ask</b> [31] 1/21 1/25 3/1 4/9 16/6 18/13 24/7 32/6 33/7 33/10 33/18 37/7 53/10 53/13 59/8 60/7 64/16 71/16 73/25 90/9 95/21 99/1 99/18 101/2 104/2 104/3 104/11 106/11 112/15 118/18 121/8</p> <p><b>asked</b> [27] 2/21 8/5 16/21 36/21 38/5 40/9 47/19 51/3 51/18 52/24 55/15 56/1 69/19 72/14 72/18 79/11 79/16 88/3 88/7 89/15 89/20 89/21 90/3 100/17 103/21 106/11 108/2</p> <p><b>asking</b> [11] 39/7 39/19 41/9 41/19 66/23 75/10 82/21 87/18 88/14 96/23 114/7</p> <p><b>aspect</b> [3] 38/7 76/22 116/24</p> <p><b>aspects</b> [5] 38/7 45/21 51/6 51/14 81/8</p> <p><b>assay</b> [1] 105/9</p> <p><b>assemble</b> [1] 88/7</p> <p><b>assembling</b> [1] 20/19</p> <p><b>assess</b> [1] 66/6</p> <p><b>assessment</b> [3] 9/5 39/23 59/1</p> <p><b>assist</b> [3] 61/10 64/19 68/13</p> <p><b>assume</b> [4] 24/16 25/13 38/3 73/6</p> <p><b>assumed</b> [1] 56/11</p> <p><b>assumes</b> [1] 88/25</p> <p><b>assumption</b> [1] 24/20</p> <p><b>assure</b> [1] 24/3</p> <p><b>assured</b> [1] 123/21</p> <p><b>asymptomatic</b> [1] 99/14</p> <p><b>attack</b> [1] 78/24</p> <p><b>attempts</b> [2] 65/14 78/12</p>	<p><b>attend</b> [1] 63/18</p> <p><b>attendance</b> [2] 15/10 64/21</p> <p><b>attended</b> [7] 6/2 17/25 22/6 30/18 38/11 101/5 103/12</p> <p><b>attending</b> [5] 17/22 32/20 35/22 49/12 62/6</p> <p><b>attention</b> [1] 41/23</p> <p><b>attributable</b> [1] 25/16</p> <p><b>August</b> [5] 43/15 43/17 48/3 111/9 115/13</p> <p><b>August 1983</b> [2] 43/17 111/9</p> <p><b>author</b> [1] 40/24</p> <p><b>authorities</b> [3] 80/16 80/17 80/25</p> <p><b>Authorities'</b> [1] 70/20</p> <p><b>authority's</b> [1] 71/10</p> <p><b>authors</b> [3] 33/15 41/15 43/19</p> <p><b>autopsies</b> [1] 32/15</p> <p><b>autopsy</b> [1] 33/4</p> <p><b>autumn</b> [1] 123/2</p> <p><b>availability</b> [2] 83/7 87/16</p> <p><b>available</b> [15] 2/17 5/2 10/16 11/4 14/21 14/25 15/6 16/14 18/6 26/2 27/14 29/13 29/25 35/7 52/5</p> <p><b>avoid</b> [1] 63/2</p> <p><b>aware</b> [7] 50/6 62/14 65/9 79/24 105/22 114/19 118/1</p> <p><b>awkward</b> [4] 69/16 69/17 69/21 71/1</p>	<p>58/24 59/9</p> <p><b>Banner's</b> [1] 55/14</p> <p><b>Barbara</b> [1] 71/15</p> <p><b>based</b> [2] 21/17 85/10</p> <p><b>baseline</b> [2] 14/1 105/8</p> <p><b>basic</b> [1] 101/3</p> <p><b>basically</b> [2] 53/5 85/1</p> <p><b>basis</b> [6] 3/14 5/4 6/13 8/15 8/22 41/9</p> <p><b>batch</b> [8] 90/17 97/18 97/23 98/1 98/8 98/9 98/24 99/2</p> <p><b>batches</b> [3] 53/23 55/17 66/17</p> <p><b>be</b> [226]</p> <p><b>be prescribed</b> [1] 29/16</p> <p><b>bearing</b> [2] 41/20 52/9</p> <p><b>became</b> [15] 11/4 14/21 18/6 20/8 23/19 26/2 26/13 32/19 43/25 50/4 61/24 62/7 94/10 100/16 110/12</p> <p><b>because</b> [78] 3/21 5/7 6/21 7/3 8/24 9/10 9/14 10/3 10/15 11/14 13/23 14/2 18/2 18/7 20/14 25/19 27/22 28/17 30/21 32/2 35/15 36/4 37/21 38/12 39/18 40/19 40/24 43/18 45/1 45/12 48/13 50/16 53/11 56/24 57/22 58/19 60/6 61/1 62/11 63/14 64/10 65/25 73/17 74/17 74/25 77/17 82/11 82/25 84/22 85/6 85/13 88/13 89/24 92/5 93/2 93/7 93/12 93/15 95/8 95/15 96/22 100/14 100/25 103/4 106/24 108/4 108/22 111/21 113/20 114/10 114/12 115/5 115/7 115/9 115/19 118/6 119/4 119/21</p> <p><b>become</b> [5] 23/5 40/21 43/10 73/13 95/19</p> <p><b>becomes</b> [2] 27/14 96/4</p> <p><b>becoming</b> [4] 2/23 29/13 83/18 109/2</p> <p><b>been</b> [97] 1/5 4/20 7/6 7/16 8/9 11/15 12/20 13/3 13/21 15/2 15/24 16/1 16/9 16/11 17/23 18/1 18/25 19/8 19/16</p>
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<p><b>B</b></p> <p><b>been...</b> [78] 20/17 20/19 20/21 25/2 25/14 25/16 32/3 32/23 36/18 36/22 45/25 46/5 47/4 47/17 48/15 51/10 53/6 53/9 53/23 55/4 56/9 57/11 58/22 59/5 60/8 62/2 66/25 67/5 67/15 68/2 69/1 69/2 69/19 74/19 76/4 76/12 82/22 82/25 83/9 85/6 85/9 86/15 88/2 88/18 89/15 91/11 91/14 91/17 94/3 94/8 94/14 95/18 98/9 106/10 108/2 108/9 108/15 109/1 110/16 110/18 111/4 111/15 112/15 113/7 114/3 114/15 114/19 115/10 117/17 118/16 119/17 120/19 120/23 120/23 121/4 121/8 121/18 123/15 <b>before</b> [28] 3/22 5/11 8/18 9/25 14/9 16/1 16/11 16/14 18/16 18/25 23/19 24/22 26/7 72/15 88/15 90/14 91/7 96/21 96/23 99/15 99/18 100/17 106/19 111/22 113/4 114/19 115/12 120/24 <b>beforehand</b> [1] 114/16 <b>began</b> [2] 99/25 120/23 <b>begin</b> [1] 123/9 <b>beginning</b> [1] 121/17 <b>begins</b> [1] 120/24 <b>behalf</b> [5] 6/3 54/22 68/2 69/12 76/8 <b>being</b> [45] 16/22 24/12 28/17 29/13 32/17 35/1 35/11 38/5 38/19 38/23 39/3 39/4 39/6 40/2 40/3 41/17 42/20 44/9 45/12 47/9 52/11 54/14 56/3 62/15 70/7 70/11 70/14 73/2 75/16 76/17 76/18 76/19 78/3 78/18 78/24 83/21 87/22 91/9 99/15 101/25 102/16 105/21 116/8 121/4 121/19 <b>Belfast</b> [2] 120/8 122/18</p>	<p><b>belong</b> [1] 6/8 <b>belonged</b> [1] 4/7 <b>beneath</b> [1] 43/14 <b>benefit</b> [2] 36/6 105/16 <b>benefits</b> [1] 81/11 <b>Benson</b> [1] 120/9 <b>best</b> [8] 21/16 50/14 54/24 69/1 109/4 119/10 122/25 124/6 <b>better</b> [3] 58/6 103/23 124/8 <b>between</b> [18] 2/13 8/7 8/14 22/17 27/24 30/12 38/19 55/7 56/20 58/16 74/14 86/4 89/2 90/5 91/10 104/24 105/5 120/12 <b>Bevan</b> [1] 119/23 <b>beyond</b> [1] 70/23 <b>big</b> [3] 8/16 106/22 121/23 <b>biochemistry</b> [1] 10/11 <b>biopsies</b> [5] 9/12 9/16 21/22 27/3 35/6 <b>biopsy</b> [5] 21/18 27/4 27/6 27/23 28/1 <b>Birmingham</b> [2] 61/16 62/12 <b>bit</b> [11] 27/9 27/10 34/7 89/6 99/15 109/21 113/7 113/19 115/25 117/15 119/17 <b>bleeding</b> [7] 27/4 32/11 83/20 99/24 100/13 107/7 107/9 <b>blood</b> [53] 10/11 13/21 14/4 15/4 18/3 25/14 25/22 34/23 39/15 39/15 40/15 43/2 55/3 56/3 60/22 61/20 62/3 62/16 64/20 85/22 90/18 91/2 91/6 91/12 92/1 96/6 97/1 97/2 97/8 97/11 98/3 98/3 98/11 98/19 99/8 100/3 103/18 104/10 104/19 104/24 105/13 105/19 106/6 106/6 106/7 107/12 107/12 107/25 108/1 108/5 117/4 123/3 123/5 <b>bloodstream</b> [1] 109/25 <b>Bloom</b> [3] 2/20 70/21 79/11 <b>Bloom's</b> [1] 7/16 <b>BMJ</b> [3] 43/16 43/17 111/9 <b>BMT</b> [1] 63/14</p>	<p><b>BMT Unit</b> [1] 63/14 <b>board</b> [3] 93/13 93/16 100/9 <b>boards</b> [1] 80/25 <b>bodies</b> [1] 123/19 <b>body</b> [1] 98/19 <b>body's</b> [2] 105/22 105/24 <b>bone</b> [2] 61/16 63/6 <b>booked</b> [1] 29/3 <b>borne</b> [1] 65/11 <b>borrowing</b> [1] 111/1 <b>boss</b> [1] 62/25 <b>both</b> [15] 12/16 12/17 13/6 20/18 24/12 25/3 30/20 57/14 57/25 63/17 84/12 104/23 107/22 111/17 120/21 <b>bottom</b> [11] 3/8 33/22 35/4 41/4 42/24 46/13 49/4 49/11 69/9 71/17 75/23 <b>Bowie</b> [1] 118/19 <b>BPL</b> [3] 55/20 56/9 56/21 <b>branch</b> [1] 77/24 <b>break</b> [3] 59/15 59/16 60/1 <b>breaking</b> [3] 108/15 109/2 109/3 <b>Brian</b> [9] 59/22 79/23 109/18 111/15 114/22 115/19 118/12 119/19 125/4 <b>brief</b> [1] 63/21 <b>briefing</b> [1] 58/11 <b>briefly</b> [4] 20/15 53/10 55/1 67/16 <b>bring</b> [2] 92/10 99/2 <b>British</b> [3] 12/7 42/5 44/23 <b>broad</b> [1] 121/16 <b>broadly</b> [1] 8/1 <b>brought</b> [1] 124/4 <b>Brownlee</b> [1] 31/22 <b>building</b> [2] 84/11 109/4 <b>built</b> [1] 22/17 <b>bulk</b> [1] 123/8 <b>burn</b> [1] 108/25 <b>busy</b> [1] 82/16 <b>but</b> [129] <b>by</b> [101] 1/20 3/6 3/19 10/6 12/3 12/3 12/7 13/6 19/19 20/2 20/6 22/5 22/24 25/21 25/25 27/15 27/17 28/12 29/14 29/16 30/6 30/7 32/19 33/12 34/17 35/15 36/13 36/14 37/14 42/2 42/2 42/8 43/17 43/23 48/3</p>	<p>48/10 52/11 52/21 52/21 55/3 56/9 60/8 60/12 60/20 60/25 65/14 67/2 68/16 68/20 73/11 75/17 77/13 77/21 78/4 78/18 81/2 83/22 84/9 85/22 85/22 86/3 86/6 87/23 88/7 89/9 90/6 91/17 91/22 92/1 92/19 92/19 92/23 94/3 94/14 95/10 97/3 97/13 97/24 98/2 98/4 99/5 101/20 101/22 103/24 104/20 104/24 106/11 106/20 107/8 107/12 108/9 109/4 109/18 109/23 109/25 110/10 111/8 120/1 123/5 125/3 125/4 <b>by 1983</b> [1] 95/10 <b>by two</b> [1] 109/25</p> <p><b>C</b></p> <p><b>cabinets</b> [1] 100/23 <b>call</b> [4] 19/13 99/14 102/1 102/2 <b>called</b> [6] 14/14 14/16 19/6 88/21 110/11 120/9 <b>came</b> [15] 9/19 14/23 16/12 17/20 19/17 27/19 28/6 28/23 32/13 91/22 93/4 95/20 110/17 114/16 114/20 <b>campaigned</b> [1] 28/14 <b>campaigners</b> [1] 122/22 <b>Campbell</b> [1] 82/17 <b>can</b> [67] 3/4 3/17 3/23 16/6 24/3 24/4 24/7 26/18 27/16 33/19 33/24 34/12 37/6 42/5 42/19 43/12 43/13 43/14 49/10 49/20 50/18 52/7 56/24 59/20 61/10 61/13 64/17 64/21 64/22 65/7 65/21 68/12 68/13 68/21 69/5 69/8 75/23 78/19 78/24 79/4 79/15 80/8 81/12 81/17 81/23 82/4 86/14 86/24 89/10 92/14 96/7 96/17 104/2 104/3 109/21 114/17 114/22 115/20 116/2 116/14 117/20 118/11 119/2 119/14 121/3 122/25 123/25 <b>can't</b> [5] 22/22 23/25</p>	<p>33/1 107/15 116/8 <b>cannot</b> [1] 32/18 <b>capacity</b> [2] 51/22 93/17 <b>care</b> [12] 30/12 60/16 60/24 61/7 62/17 64/9 69/1 85/19 85/20 92/2 119/12 120/6 <b>careful</b> [2] 20/2 107/8 <b>carefully</b> [4] 22/10 36/16 44/9 86/17 <b>carried</b> [2] 34/8 35/6 <b>carrier</b> [6] 8/25 11/13 19/18 19/25 23/5 104/22 <b>carriers</b> [4] 11/16 12/2 25/2 30/11 <b>carry</b> [1] 105/18 <b>case</b> [12] 1/4 12/24 38/3 50/13 66/16 80/18 83/3 91/8 93/7 96/5 100/25 111/13 <b>cases</b> [12] 15/24 16/9 16/9 70/6 70/8 70/9 70/11 70/11 72/21 75/12 75/16 108/11 <b>caught</b> [1] 41/23 <b>cause</b> [9] 19/6 19/15 19/23 25/21 26/1 47/8 51/1 111/23 114/8 <b>caused</b> [3] 42/8 54/21 97/23 <b>causes</b> [1] 35/8 <b>caution</b> [1] 2/24 <b>cell</b> [7] 43/7 49/5 49/21 50/18 102/7 111/10 115/12 <b>cells</b> [1] 104/19 <b>cent</b> [5] 21/21 24/1 104/24 104/25 105/3 <b>Central</b> [8] 58/19 65/18 71/8 72/19 74/9 79/2 81/2 88/10 <b>centrally</b> [1] 97/13 <b>centre</b> [42] 2/5 3/11 4/11 4/13 5/19 8/13 9/21 14/23 16/4 28/23 29/1 31/23 34/15 48/6 49/13 56/15 64/1 66/2 68/13 68/22 71/23 74/20 75/19 76/15 78/8 82/13 85/10 85/10 86/2 89/1 91/19 91/20 91/21 95/5 97/14 101/14 102/5 102/18 118/3 120/2 120/8 122/18 <b>centre's</b> [1] 76/23 <b>centres</b> [18] 8/3 19/10 22/18 30/8 56/1 62/15 71/14 74/25 74/25 75/4 75/9 80/8 88/5</p>	<p>88/18 89/3 101/11 122/20 123/18 <b>certain</b> [1] 83/21 <b>certainly</b> [9] 6/4 25/23 32/18 76/20 76/23 78/7 80/4 80/19 102/21 <b>cetera</b> [11] 20/20 21/4 32/17 38/20 47/2 49/16 51/4 62/6 86/20 102/11 108/17 <b>chair</b> [2] 51/22 75/10 <b>chaired</b> [2] 3/6 92/23 <b>chairman</b> [11] 8/5 46/24 69/6 71/6 71/16 72/14 72/16 72/19 73/25 93/22 94/7 <b>challenging</b> [1] 124/3 <b>chance</b> [1] 120/21 <b>change</b> [5] 47/22 48/4 48/25 87/9 116/24 <b>changed</b> [1] 92/3 <b>changes</b> [6] 23/4 38/18 50/10 81/18 113/2 113/15 <b>charged</b> [1] 123/1 <b>Charles</b> [1] 8/5 <b>chatty</b> [1] 119/6 <b>check</b> [6] 6/9 30/2 81/13 90/18 90/21 96/10 <b>chief</b> [11] 53/16 54/16 56/7 56/18 56/22 57/5 57/21 99/22 100/1 100/6 100/8 <b>child</b> [1] 81/12 <b>children</b> [4] 34/16 41/7 41/11 41/16 <b>choice</b> [1] 90/15 <b>choose</b> [1] 61/3 <b>choosing</b> [1] 62/22 <b>Christmas</b> [2] 123/12 123/24 <b>chronic</b> [3] 21/8 35/16 46/9 <b>circulate</b> [2] 54/6 88/20 <b>circulations</b> [1] 9/20 <b>circumstances</b> [3] 32/10 64/19 65/1 <b>cirrhosis</b> [9] 21/13 21/22 24/10 24/25 25/7 25/15 25/20 26/1 27/8 <b>cities</b> [1] 28/8 <b>civil</b> [1] 122/23 <b>claim</b> [3] 65/3 69/16 71/11 <b>clarification</b> [1] 80/2 <b>clarify</b> [4] 4/14 7/9 19/15 19/24 <b>clear</b> [12] 51/17 61/1</p>
--	--	---	--	---	--

<p><b>C</b></p> <p><b>clear...</b> [10] 76/14 77/17 79/6 79/8 79/9 80/7 82/15 98/22 114/22 117/6</p> <p><b>clearer</b> [1] 80/13</p> <p><b>clearly</b> [6] 55/24 57/3 61/3 73/4 77/2 92/15</p> <p><b>Cleveland</b> [1] 94/15</p> <p><b>clinic</b> [26] 10/9 12/2 12/11 14/13 14/20 15/1 15/3 17/21 20/12 20/18 22/6 23/23 28/25 29/1 29/2 29/24 30/19 37/10 39/11 45/15 45/20 46/23 50/5 86/17 92/1 100/15</p> <p><b>clinic:</b> [1] 35/22</p> <p><b>clinic: liver</b> [1] 35/22</p> <p><b>clinical</b> [24] 5/21 18/8 20/22 21/13 22/8 22/10 25/6 25/6 25/9 27/13 27/20 35/8 44/4 44/7 53/3 63/5 70/17 86/22 96/3 99/7 101/12 110/7 116/15 116/18</p> <p><b>clinically</b> [5] 20/22 36/3 43/11 49/12 109/2</p> <p><b>clinician</b> [6] 34/17 36/10 41/9 116/19 117/25 121/10</p> <p><b>clinicians</b> [2] 84/12 89/3</p> <p><b>clinics</b> [7] 36/12 37/21 37/22 38/11 38/13 40/8 87/6</p> <p><b>CLO</b> [4] 66/13 66/19 75/11 75/12</p> <p><b>close</b> [2] 87/25 94/13</p> <p><b>closely</b> [1] 85/23</p> <p><b>closer</b> [1] 34/7</p> <p><b>clotting</b> [4] 106/14 106/16 107/16 107/18</p> <p><b>clubbing</b> [2] 78/9 79/21</p> <p><b>co</b> [14] 33/15 67/2 73/13 74/21 75/8 79/17 81/4 83/18 84/23 85/2 85/9 85/13 92/4 93/23</p> <p><b>co-authors</b> [1] 33/15</p> <p><b>co-consultant</b> [1] 83/18</p> <p><b>co-consultants</b> [1] 85/9</p> <p><b>co-director</b> [2] 85/2 92/4</p> <p><b>co-operate</b> [1] 79/17</p>	<p><b>co-ordinate</b> [3] 73/13 74/21 75/8</p> <p><b>co-ordinated</b> [3] 67/2 81/4 84/23</p> <p><b>coagulation</b> [3] 53/24 55/10 93/20</p> <p><b>coalface</b> [1] 41/1</p> <p><b>coauthor</b> [1] 49/7</p> <p><b>cofactor</b> [1] 26/25</p> <p><b>cohort</b> [1] 17/13</p> <p><b>collaborated</b> [2] 84/18 85/23</p> <p><b>collaborations</b> [1] 94/12</p> <p><b>collate</b> [4] 80/8 88/11 89/12 101/17</p> <p><b>collated</b> [2] 78/18 102/9</p> <p><b>collating</b> [1] 86/19</p> <p><b>colleague</b> [2] 63/4 82/22</p> <p><b>colleagues</b> [30] 5/17 5/23 6/8 6/16 6/24 10/8 22/24 26/10 26/22 30/8 31/18 58/16 61/25 62/18 63/18 66/4 72/13 84/24 85/4 88/12 94/6 94/14 94/16 98/3 99/5 106/21 108/10 108/16 109/5 109/12</p> <p><b>collect</b> [5] 71/23 76/16 76/18 76/21 77/3</p> <p><b>collected</b> [5] 39/23 78/3 99/12 99/16 101/24</p> <p><b>collecting</b> [7] 37/16 71/25 73/20 76/17 76/24 77/10 78/17</p> <p><b>collection</b> [1] 90/5</p> <p><b>collective</b> [7] 76/6 87/14 87/21 88/24 90/3 90/6 121/24</p> <p><b>collectively</b> [5] 67/4 81/2 86/14 88/3 93/3</p> <p><b>college</b> [1] 103/12</p> <p><b>column</b> [3] 33/23 34/21 35/5</p> <p><b>combination</b> [4] 104/6 105/11 107/16 108/1</p> <p><b>combined</b> [1] 29/23</p> <p><b>come</b> [21] 2/7 12/13 14/22 16/19 18/2 28/21 29/10 59/17 80/22 94/23 107/7 113/6 113/23 114/4 115/4 116/2 119/16 122/10 123/5 123/17 123/21</p> <p><b>comes</b> [4] 15/3 37/5</p>	<p>78/8 115/9</p> <p><b>comfort</b> [1] 121/24</p> <p><b>coming</b> [6] 15/9 86/16 91/25 114/25 115/17 117/19</p> <p><b>commenced</b> [1] 44/14</p> <p><b>comment</b> [4] 44/11 51/3 54/3 111/21</p> <p><b>commented</b> [1] 89/4</p> <p><b>commenting</b> [1] 44/23</p> <p><b>commercial</b> [10] 48/11 90/25 93/5 93/8 93/24 95/4 95/13 103/18 103/24 111/13</p> <p><b>committee</b> [11] 3/11 40/11 53/21 54/3 55/13 55/14 55/23 57/13 59/9 75/8 83/11</p> <p><b>Committee's</b> [1] 58/24</p> <p><b>commonest</b> [1] 25/21</p> <p><b>communicate</b> [2] 80/10 117/2</p> <p><b>communication</b> [1] 74/8</p> <p><b>communications</b> [1] 74/14</p> <p><b>companies</b> [1] 61/8</p> <p><b>company</b> [2] 64/8 96/1</p> <p><b>comparison</b> [1] 8/14</p> <p><b>compensation</b> [1] 78/13</p> <p><b>complement</b> [1] 39/17</p> <p><b>completed</b> [1] 21/7</p> <p><b>completely</b> [1] 112/6</p> <p><b>complex</b> [2] 93/10 104/23</p> <p><b>components</b> [1] 104/18</p> <p><b>comprehensive</b> [2] 12/4 85/18</p> <p><b>concanavalin</b> [1] 43/7</p> <p><b>concanavalin A</b> [1] 43/7</p> <p><b>concentrate</b> [18] 42/9 48/16 49/23 50/20 67/19 89/8 90/17 93/9 95/13 95/23 97/13 97/18 106/15 111/12 111/13 112/7 112/11 116/25</p> <p><b>concentrates</b> [9] 42/13 48/11 48/13 53/24 55/6 93/10 95/19 112/17 113/1</p> <p><b>concern</b> [11] 5/9 45/19 48/13 52/1 53/1 54/15 58/20 61/11 62/18 64/6 72/6</p> <p><b>concerned</b> [4] 66/21</p>	<p>117/13 117/14 119/11</p> <p><b>concerns</b> [3] 56/8 57/7 72/12</p> <p><b>concluded</b> [1] 17/15</p> <p><b>concludes</b> [2] 118/25 119/21</p> <p><b>concluding</b> [1] 121/18</p> <p><b>conclusion</b> [3] 44/8 49/19 49/20</p> <p><b>condition</b> [1] 20/7</p> <p><b>conducted</b> [2] 16/24 102/16</p> <p><b>confined</b> [1] 50/11</p> <p><b>confirmatory</b> [1] 2/19</p> <p><b>confirmed</b> [1] 63/24</p> <p><b>conflict</b> [5] 61/1 61/5 62/19 63/2 64/10</p> <p><b>connection</b> [1] 22/16</p> <p><b>conscious</b> [3] 2/23 105/22 123/22</p> <p><b>consent</b> [15] 2/15 3/19 4/14 14/2 16/21 18/15 38/6 39/3 40/12 40/13 41/18 50/16 51/9 68/10 101/8</p> <p><b>consequence</b> [1] 69/3</p> <p><b>consequences</b> [3] 24/18 113/23 117/24</p> <p><b>consider</b> [5] 5/3 19/22 72/15 82/9 82/10</p> <p><b>consideration</b> [1] 56/4</p> <p><b>considerations</b> [1] 82/14</p> <p><b>considered</b> [2] 3/22 6/14</p> <p><b>considering</b> [3] 3/13 59/1 82/6</p> <p><b>consistent</b> [3] 43/5 46/17 47/15</p> <p><b>Consortium</b> [1] 71/7</p> <p><b>consultant</b> [15] 20/8 20/16 23/19 26/13 32/19 35/19 40/21 50/4 52/10 63/16 63/17 83/15 83/18 85/17 100/16</p> <p><b>consultants</b> [8] 20/11 29/15 29/18 29/18 37/11 52/21 85/5 85/9 83/17 83/15 83/18 85/17 100/16</p> <p><b>consulted</b> [1] 57/16</p> <p><b>consumption</b> [1] 24/17</p> <p><b>contact</b> [9] 6/5 16/7 16/17 31/20 65/9 67/7 83/3 92/11 96/13</p> <p><b>contacted</b> [3] 55/24 66/25 99/1</p> <p><b>contacts</b> [7] 51/19 51/25 52/17 53/2 53/2 53/8 98/20</p> <p><b>contained</b> [1] 90/19</p>	<p><b>contemplate</b> [1] 114/15</p> <p><b>contemplated</b> [1] 65/24</p> <p><b>content</b> [2] 82/11 112/10</p> <p><b>contents</b> [1] 87/18</p> <p><b>context</b> [1] 65/5</p> <p><b>continue</b> [6] 71/23 76/16 76/21 85/12 91/25 122/10</p> <p><b>continued</b> [6] 1/3 51/5 63/4 84/19 91/23 125/2</p> <p><b>continues</b> [1] 123/9</p> <p><b>contrast</b> [1] 83/14</p> <p><b>contributed</b> [1] 53/25</p> <p><b>contribution</b> [1] 9/14</p> <p><b>control</b> [4] 63/19 64/3 91/2 91/6</p> <p><b>controlling</b> [1] 31/7</p> <p><b>conversations</b> [2] 57/20 86/3</p> <p><b>conveyed</b> [1] 5/17</p> <p><b>copied</b> [1] 17/24</p> <p><b>copy</b> [1] 58/10</p> <p><b>core</b> [3] 60/8 102/4 106/11</p> <p><b>correct</b> [7] 14/15 14/24 54/19 54/20 64/11 70/5 118/12</p> <p><b>correlate</b> [1] 110/19</p> <p><b>cosignatory</b> [1] 83/3</p> <p><b>cost</b> [4] 93/9 93/11 93/16 93/25</p> <p><b>could</b> [47] 2/8 2/9 3/14 4/14 16/6 18/5 18/16 21/20 29/14 30/18 31/18 33/12 34/7 41/2 44/8 47/16 55/22 56/16 59/8 59/15 60/10 63/7 66/9 67/4 67/23 69/25 75/3 77/4 78/6 79/11 80/22 81/15 83/2 87/22 88/3 88/19 92/18 94/22 95/7 97/16 101/16 105/5 105/10 106/18 106/24 116/19 122/3</p> <p><b>couldn't</b> [6] 29/16 77/25 82/11 88/21 93/14 100/14</p> <p><b>counsel</b> [4] 1/6 1/14 1/15 122/19</p> <p><b>counselled</b> [1] 52/20</p> <p><b>counselling</b> [14] 3/15 5/11 5/13 6/13 7/25 8/12 8/18 8/20 9/25 17/5 58/4 83/16 85/8 113/25</p> <p><b>counsellor</b> [1] 118/3</p> <p><b>count</b> [1] 113/3</p>	<p><b>counterparts</b> [1] 42/16</p> <p><b>counts</b> [1] 50/10</p> <p><b>couple</b> [3] 62/8 85/25 109/19</p> <p><b>course</b> [15] 5/22 5/25 10/4 10/5 23/4 43/25 63/9 66/18 76/10 79/12 80/15 83/16 87/12 107/5 120/17</p> <p><b>court</b> [2] 65/12 66/9</p> <p><b>courtesy</b> [1] 66/10</p> <p><b>cover</b> [3] 62/4 62/10 64/1</p> <p><b>covered</b> [1] 33/5</p> <p><b>covering</b> [1] 62/5</p> <p><b>Craske</b> [1] 117/13</p> <p><b>critical</b> [3] 40/23 43/20 82/24</p> <p><b>critically</b> [3] 40/25 41/21 44/4</p> <p><b>cross</b> [1] 113/16</p> <p><b>crossed</b> [1] 107/23</p> <p><b>cryoprecipitate</b> [7] 38/20 48/16 67/19 87/11 97/10 97/17 106/15</p> <p><b>current</b> [7] 12/7 12/12 21/17 33/25 66/3 79/10 121/21</p> <p><b>currently</b> [1] 60/21</p> <p><b>cut</b> [1] 113/18</p>
<b>D</b>					
<p><b>data</b> [25] 21/17 44/7 56/2 71/24 71/25 72/5 76/16 76/17 76/19 76/21 76/24 77/3 77/4 77/10 77/13 77/15 78/1 78/2 78/4 78/17 78/20 80/9 101/24 102/3 102/4</p> <p><b>database</b> [2] 67/7 99/11</p> <p><b>date</b> [8] 24/3 38/21 39/5 43/13 53/20 79/12 81/23 103/7</p> <p><b>dated</b> [1] 53/15</p> <p><b>dates</b> [1] 99/18</p> <p><b>David</b> [1] 119/23</p> <p><b>Davidson</b> [12] 62/2 62/5 62/7 62/24 63/1 84/16 85/15 90/17 91/11 91/17 92/1 99/5</p> <p><b>Davidson's</b> [1] 64/2</p> <p><b>day</b> [9] 29/1 29/2 36/21 82/16 90/14 91/7 100/17 107/5 120/19</p> <p><b>days</b> [6] 1/6 85/25 119/17 119/17 119/18 123/12</p>					

<p><b>D</b></p> <p><b>DDAVP [1]</b> 104/6</p> <p><b>deal [2]</b> 53/10 114/5</p> <p><b>dealing [1]</b> 111/10</p> <p><b>dealt [1]</b> 30/6</p> <p><b>dear [1]</b> 11/2</p> <p><b>deaths [1]</b> 108/11</p> <p><b>decade [1]</b> 25/12</p> <p><b>deceased [1]</b> 32/23</p> <p><b>December [6]</b> 1/1 50/5 103/1 103/8 103/9 103/10</p> <p><b>December 1975 [2]</b> 103/1 103/8</p> <p><b>decided [3]</b> 77/15 91/17 92/4</p> <p><b>decision [9]</b> 5/20 22/15 60/19 72/16 77/13 87/4 91/9 92/19 118/12</p> <p><b>decision-making [1]</b> 87/4</p> <p><b>decisions [4]</b> 10/20 64/9 69/2 122/24</p> <p><b>declined [1]</b> 63/3</p> <p><b>decreased [2]</b> 49/22 50/19</p> <p><b>deeply [1]</b> 121/6</p> <p><b>default [2]</b> 40/5 93/2</p> <p><b>defeat [1]</b> 78/12</p> <p><b>defence [20]</b> 3/12 4/5 6/4 6/8 69/7 69/15 70/20 71/7 71/10 71/13 72/16 73/2 73/8 73/14 76/1 76/6 76/9 79/7 79/21 81/4</p> <p><b>defend [1]</b> 116/19</p> <p><b>defendant [2]</b> 74/22 78/25</p> <p><b>defendants [2]</b> 80/16 80/17</p> <p><b>defensive [1]</b> 80/5</p> <p><b>definite [2]</b> 21/21 25/25</p> <p><b>definitely [3]</b> 23/21 44/20 113/4</p> <p><b>definition [1]</b> 90/7</p> <p><b>degree [1]</b> 27/25</p> <p><b>delay [6]</b> 54/13 54/21 56/8 58/15 58/25 59/11</p> <p><b>delivery [2]</b> 60/15 60/24</p> <p><b>dental [3]</b> 4/5 106/7 106/19</p> <p><b>department [16]</b> 30/23 31/24 35/18 37/25 58/7 61/22 70/3 78/11 83/22 84/11 84/17 84/20 85/11 91/21 97/5 100/5</p>	<p><b>departments [3]</b> 30/12 59/8 61/1</p> <p><b>depending [2]</b> 13/4 59/2</p> <p><b>depends [1]</b> 27/9</p> <p><b>Deputy [1]</b> 57/21</p> <p><b>describe [2]</b> 106/2 119/6</p> <p><b>described [9]</b> 14/11 35/1 35/11 84/24 100/3 100/20 104/16 105/20 113/20</p> <p><b>describes [1]</b> 115/11</p> <p><b>descriptions [1]</b> 38/14</p> <p><b>deserve [1]</b> 119/4</p> <p><b>designated [1]</b> 29/14</p> <p><b>desirable [1]</b> 6/19</p> <p><b>desires [1]</b> 56/14</p> <p><b>desmopressin [12]</b> 104/14 104/15 105/9 105/10 105/11 105/15 105/18 107/22 109/22 109/23 110/4 110/22</p> <p><b>destroyed [1]</b> 102/25</p> <p><b>detail [5]</b> 33/19 42/21 45/9 119/13 119/14</p> <p><b>detailed [6]</b> 5/11 20/25 35/2 38/9 45/7 82/24</p> <p><b>details [7]</b> 30/16 33/8 34/22 42/17 70/17 99/7 101/3</p> <p><b>deter [1]</b> 65/22</p> <p><b>devastating [1]</b> 117/21</p> <p><b>developed [4]</b> 11/11 24/10 24/24 84/1</p> <p><b>developing [2]</b> 20/6 84/13</p> <p><b>development [2]</b> 23/8 86/18</p> <p><b>develops [1]</b> 27/13</p> <p><b>diagnosis [2]</b> 6/23 19/4</p> <p><b>diagnostics [1]</b> 117/25</p> <p><b>dictation [1]</b> 13/4</p> <p><b>did [40]</b> 4/9 6/1 6/7 6/16 8/3 9/25 10/21 13/12 13/18 19/2 20/4 26/5 31/15 35/14 37/19 38/16 44/7 51/15 66/22 66/23 67/23 76/22 79/15 82/9 82/13 87/21 88/8 89/1 89/24 90/20 94/23 98/7 103/1 112/1 112/7 114/15 114/17 114/18 114/20 115/15</p> <p><b>didn't [28]</b> 2/20 6/13</p>	<p>8/12 14/20 16/18 16/19 17/6 41/12 47/21 49/2 66/8 75/5 75/16 89/14 90/9 91/24 92/7 103/4 103/4 106/19 107/11 108/7 112/22 113/2 114/3 115/6 115/23 116/7</p> <p><b>died [2]</b> 35/8 53/25</p> <p><b>difference [4]</b> 2/13 39/13 39/22 90/4</p> <p><b>differences [1]</b> 89/2</p> <p><b>different [17]</b> 12/9 51/6 64/12 74/10 74/16 74/21 78/10 80/23 81/7 81/8 84/2 89/2 89/3 90/2 112/6 121/14 121/15</p> <p><b>difficult [3]</b> 77/8 117/18 123/25</p> <p><b>difficulties [2]</b> 74/5 124/2</p> <p><b>difficulty [1]</b> 117/7</p> <p><b>diminished [1]</b> 32/17</p> <p><b>direct [6]</b> 32/9 39/8 47/9 50/4 57/20 73/16</p> <p><b>directly [4]</b> 1/19 44/16 85/21 88/7</p> <p><b>director [8]</b> 4/11 57/17 61/17 61/19 85/2 85/13 91/1 92/4</p> <p><b>directors [39]</b> 2/5 3/5 3/11 4/7 4/13 5/19 7/2 8/14 9/21 51/24 53/22 54/4 54/17 55/9 55/18 56/5 56/6 56/10 56/15 57/15 58/2 65/14 66/1 66/4 66/12 67/3 68/13 69/23 70/16 71/23 71/25 73/10 74/20 75/20 76/16 78/9 80/6 87/24 88/20</p> <p><b>directors' [1]</b> 92/22</p> <p><b>discharge [1]</b> 107/6</p> <p><b>discovered [4]</b> 5/6 55/3 92/8 113/5</p> <p><b>discrete [1]</b> 60/8</p> <p><b>discuss [9]</b> 7/23 52/19 54/9 57/5 64/18 73/12 80/9 87/8 116/3</p> <p><b>discussed [13]</b> 12/25 51/1 57/11 62/25 67/16 70/14 70/16 76/11 77/1 78/18 88/9 103/17 116/11</p> <p><b>discussing [4]</b> 17/4 70/17 76/6 88/2</p> <p><b>discussion [26]</b> 4/10 4/16 5/25 6/17 7/1 8/7 23/21 44/6 46/24 47/23 68/9 69/8 70/24</p>	<p>71/6 71/9 71/12 72/3 72/8 72/24 73/7 74/7 79/24 83/11 92/24 93/6 111/17</p> <p><b>discussions [11]</b> 7/12 12/20 26/9 55/8 69/14 73/18 75/22 77/8 91/18 92/12 94/6</p> <p><b>disease [39]</b> 8/16 9/2 9/15 10/18 11/17 20/3 20/7 20/22 21/13 21/23 22/2 22/8 22/11 23/8 24/2 24/16 25/10 27/11 27/13 27/21 28/20 35/16 35/22 36/2 36/22 37/9 37/16 38/22 38/23 39/21 43/1 45/22 46/10 49/17 70/24 91/25 97/6 99/22 107/21</p> <p><b>diseases [5]</b> 29/17 31/23 52/22 96/13 98/16</p> <p><b>disorder [4]</b> 32/11 83/20 99/24 100/13</p> <p><b>distance [1]</b> 16/3</p> <p><b>distinct [1]</b> 40/12</p> <p><b>distorted [1]</b> 87/23</p> <p><b>disturbances [1]</b> 39/20</p> <p><b>DMCB [1]</b> 50/15</p> <p><b>do [88]</b> 2/19 4/1 4/17 4/17 4/18 4/22 5/12 6/19 7/1 7/18 9/24 10/11 10/24 12/13 14/1 15/1 15/4 17/12 18/13 23/3 23/12 24/3 26/15 26/18 27/4 27/16 31/10 32/9 32/22 33/3 38/2 39/1 39/7 39/18 40/13 40/15 42/2 44/12 44/14 45/24 46/8 46/10 46/21 46/23 47/12 48/1 48/21 50/9 50/14 50/22 52/2 52/8 52/12 54/21 56/24 65/19 66/22 67/4 67/12 72/1 75/12 75/18 78/14 79/18 80/8 82/9 85/4 85/6 86/14 89/15 90/20 97/21 99/6 99/20 100/11 100/18 107/20 108/9 109/16 110/4 110/8 114/16 114/20 115/17 116/11 116/14 116/21 117/16</p> <p><b>doctor [2]</b> 29/16 97/4</p> <p><b>doctors [5]</b> 23/23 78/8 80/20 92/25 122/11</p> <p><b>document [10]</b> 1/11</p>	<p>2/7 46/12 60/10 64/12 64/14 65/7 68/5 87/19 123/17</p> <p><b>documentary [2]</b> 103/2 103/2</p> <p><b>documentation [5]</b> 18/10 53/12 93/21 102/25 107/8</p> <p><b>documents [6]</b> 51/21 53/13 54/23 58/9 121/12 123/20</p> <p><b>does [12]</b> 1/9 15/23 45/4 82/13 102/14 104/13 104/13 105/20 108/13 110/3 110/3 117/10</p> <p><b>doesn't [4]</b> 10/3 100/10 105/15 118/21</p> <p><b>doing [19]</b> 4/20 4/24 4/25 5/8 5/11 23/23 26/15 27/2 36/15 37/21 37/22 38/12 38/12 45/1 45/8 45/21 50/5 50/25 101/12</p> <p><b>don't [42]</b> 3/21 5/12 7/18 10/20 10/21 10/22 15/18 16/8 23/17 23/21 24/20 25/18 26/19 26/19 27/16 46/3 48/24 51/12 52/6 56/23 56/25 59/9 66/11 66/18 67/12 68/4 72/9 72/23 73/24 77/6 77/8 77/20 77/22 80/24 82/4 89/20 90/11 99/20 110/23 113/17 115/19 118/15</p> <p><b>done [29]</b> 13/5 14/19 17/19 22/5 23/9 27/7 30/19 32/17 33/1 33/8 36/18 39/11 43/25 47/9 53/3 62/3 85/22 98/2 98/6 106/23 110/16 111/3 113/8 116/8 116/23 118/9 121/9 121/18 122/2</p> <p><b>donor [4]</b> 53/25 55/4 95/16 97/16</p> <p><b>donors [2]</b> 48/17 97/19</p> <p><b>dose [1]</b> 108/6</p> <p><b>dot [1]</b> 60/5</p> <p><b>double [4]</b> 29/21 31/4 105/16 108/21</p> <p><b>doubt [2]</b> 110/24 121/23</p> <p><b>Douglas [1]</b> 84/6</p> <p><b>down [5]</b> 2/12 20/10 34/21 69/5 83/11</p> <p><b>Dr [233]</b></p> <p><b>Dr Aileen Keel [1]</b></p>	<p>58/1</p> <p><b>Dr Armstrong [5]</b> 53/16 56/6 56/13 57/19 57/22</p> <p><b>Dr Armstrong's [1]</b> 57/4</p> <p><b>Dr Aronstam [8]</b> 69/18 70/9 70/15 72/11 72/14 72/18 74/16 78/10</p> <p><b>Dr Charles Hay [1]</b> 8/5</p> <p><b>Dr Craske [1]</b> 117/13</p> <p><b>Dr David Bevan [1]</b> 119/23</p> <p><b>Dr Davidson [8]</b> 62/5 62/7 62/24 63/1 90/17 91/11 91/17 92/1</p> <p><b>Dr Davidson's [1]</b> 64/2</p> <p><b>Dr Follett [7]</b> 13/7 13/9 14/25 33/17 49/8 116/17 117/8</p> <p><b>Dr Forbes [54]</b> 17/5 20/10 21/16 23/22 25/5 26/8 27/1 33/17 35/13 35/19 37/11 42/2 44/24 45/14 46/10 46/24 47/1 47/19 48/3 48/7 48/23 49/8 51/12 52/4 68/17 68/20 73/15 81/20 82/7 82/21 83/23 84/15 85/2 85/13 86/11 87/7 91/10 92/16 94/2 94/25 103/19 103/20 106/21 107/8 108/16 111/4 113/20 115/15 116/1 116/7 117/7 118/2 118/6 118/13</p> <p><b>Dr Forbes' [2]</b> 82/15 83/18</p> <p><b>Dr Franklin [2]</b> 61/25 64/5</p> <p><b>Dr Franklin's [1]</b> 63/3</p> <p><b>Dr Froebel [5]</b> 43/21 44/25 49/8 101/22 116/13</p> <p><b>Dr Gary Benson [1]</b> 120/9</p> <p><b>Dr Greer [1]</b> 37/14</p> <p><b>Dr Hay [3]</b> 8/9 9/10 9/17</p> <p><b>Dr Hay's [1]</b> 9/13</p> <p><b>Dr Hill [1]</b> 72/1</p> <p><b>Dr Ian [1]</b> 79/6</p> <p><b>Dr Ian Franklin [1]</b> 61/14</p> <p><b>Dr Janet Shirley [1]</b> 120/3</p> <p><b>Dr John [3]</b> 12/3 29/4</p>
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<b>D</b>	35/24 <b>Dr Sturrock [4]</b> 33/16 35/19 85/16 86/10 <b>Dr Tait [1]</b> 68/2 <b>Dr Tedder [1]</b> 117/10 <b>Dr Vivienne Nathanson [1]</b> 8/8 <b>Dr Walker [10]</b> 23/22 62/1 62/6 62/13 62/24 75/7 85/15 92/2 92/3 108/17 <b>Dr Wilkie [2]</b> 17/5 52/21 <b>Dr Willoughby [1]</b> 41/16 <b>Dr Willoughby's [1]</b> 41/13 <b>draft [2]</b> 83/10 113/25 <b>dramatic [1]</b> 107/10 <b>Drs [3]</b> 84/16 85/15 86/7 <b>Drs McDonald [1]</b> 85/15 <b>Drs Triger [1]</b> 86/7 <b>drug [3]</b> 28/9 28/12 28/19 <b>drugs [2]</b> 26/7 107/23 <b>due [6]</b> 23/4 24/17 83/16 111/16 112/3 120/16 <b>Dundee [2]</b> 85/3 93/13 <b>during [6]</b> 37/23 98/18 99/17 116/5 119/9 123/12 <b>dysfunction [2]</b> 33/14 34/11	<b>effective [2]</b> 26/21 106/5 <b>effectively [3]</b> 17/14 30/6 91/15 <b>effects [1]</b> 30/5 <b>efficacy [2]</b> 18/8 101/12 <b>effort [1]</b> 109/6 <b>efforts [2]</b> 95/8 119/10 <b>eight [2]</b> 53/21 58/15 <b>either [11]</b> 12/7 17/20 24/11 29/7 29/17 30/4 31/18 51/8 107/17 111/13 117/13 <b>elapsed [1]</b> 58/16 <b>elevated [1]</b> 19/12 <b>elevation [1]</b> 19/23 <b>else [2]</b> 27/16 29/10 83/24 84/2 <b>embarrassing [1]</b> 70/21 <b>emerge [1]</b> 121/17 <b>emergence [3]</b> 77/2 94/16 108/14 <b>emergencies [1]</b> 101/6 <b>emerging [6]</b> 9/1 46/9 76/25 86/12 92/6 108/17 <b>emphasise [1]</b> 123/14 <b>employee [3]</b> 61/2 64/7 64/8 <b>employees [4]</b> 60/14 60/20 61/6 61/7 <b>employer's [1]</b> 61/4 <b>empty [2]</b> 1/7 123/10 <b>enable [1]</b> 63/17 <b>encompass [1]</b> 98/7 <b>encourage [1]</b> 117/8 <b>end [7]</b> 12/11 20/8 35/13 40/20 50/5 58/19 122/11 <b>ended [1]</b> 35/15 <b>endothelial [2]</b> 104/19 104/21 <b>England [8]</b> 7/3 55/20 62/18 65/4 73/6 74/5 74/14 79/25 <b>English [5]</b> 8/13 56/10 62/15 74/10 77/22 <b>enhance [1]</b> 107/17 <b>enjoyable [1]</b> 123/24 <b>enlargement [2]</b> 20/23 37/3 <b>enlivened [1]</b> 119/7 <b>enormous [2]</b> 93/11 93/16 <b>enough [3]</b> 10/22 59/21 59/22 <b>enquiries [1]</b> 120/11 <b>enquiry [2]</b> 66/7 66/16	<b>enrolled [1]</b> 101/14 <b>ensure [2]</b> 18/22 69/1 <b>entered [1]</b> 95/15 <b>enthusiast [1]</b> 119/13 <b>entire [1]</b> 100/24 <b>entirely [3]</b> 10/8 85/12 92/9 <b>entitled [1]</b> 60/14 <b>envisages [1]</b> 122/8 <b>epidemic [1]</b> 108/21 <b>epidemiological [1]</b> 39/10 <b>episode [1]</b> 56/10 <b>episodes [1]</b> 67/10 <b>equivalent [1]</b> 6/19 <b>especially [1]</b> 124/2 <b>essentially [1]</b> 83/25 <b>establish [2]</b> 14/5 66/20 <b>established [3]</b> 28/25 32/4 73/11 <b>estimate [4]</b> 21/10 21/16 21/21 22/2 <b>estimating [1]</b> 27/11 <b>et [12]</b> 20/20 21/4 21/18 32/17 38/20 47/2 49/16 51/4 62/6 86/20 102/11 108/17 <b>et cetera [11]</b> 20/20 21/4 32/17 38/20 47/2 49/16 51/4 62/6 86/20 102/11 108/17 <b>ethical [4]</b> 52/1 82/14 116/12 118/12 <b>ethics [2]</b> 40/11 122/13 <b>ethos [1]</b> 39/25 <b>evaluation [1]</b> 110/13 <b>even [5]</b> 13/21 26/7 27/5 113/4 123/10 <b>event [1]</b> 96/4 <b>events [2]</b> 74/5 122/25 <b>eventually [2]</b> 28/6 102/24 <b>ever [7]</b> 24/20 62/22 66/18 77/9 91/3 108/1 114/18 <b>every [10]</b> 17/20 22/11 26/15 28/4 68/21 76/22 89/1 100/22 109/6 110/16 <b>everybody [2]</b> 37/25 117/9 <b>everyone's [1]</b> 79/12 <b>evidence [39]</b> 14/7 14/12 14/18 15/7 20/22 21/14 21/20 21/22 22/8 23/5 25/6 25/8 25/9 27/21 34/24 51/18 53/7 55/5 61/15 81/10 87/12 90/14	94/2 94/24 119/16 119/23 120/5 120/9 120/10 121/6 121/10 121/12 121/22 121/25 122/6 122/10 122/16 122/21 123/3 <b>evident [2]</b> 94/7 109/2 <b>evolution [2]</b> 18/11 23/18 <b>exactly [2]</b> 101/4 106/25 <b>examination [4]</b> 22/7 22/11 39/12 64/19 <b>examine [3]</b> 34/10 36/16 64/25 <b>examined [4]</b> 33/25 34/17 38/23 49/17 <b>examining [2]</b> 20/21 86/17 <b>example [8]</b> 4/2 38/4 74/17 82/2 87/10 101/20 102/6 102/17 <b>exception [1]</b> 17/2 <b>exceptions [1]</b> 83/22 <b>exchanges [1]</b> 109/20 <b>exclude [1]</b> 78/9 <b>excluded [2]</b> 25/18 79/19 <b>excluding [1]</b> 79/20 <b>Exclusion [1]</b> 60/14 <b>Executive [2]</b> 67/22 88/2 <b>exercise [5]</b> 54/19 65/23 67/14 88/11 89/11 <b>exist [1]</b> 102/14 <b>existence [1]</b> 87/20 <b>existing [1]</b> 17/13 <b>exists [1]</b> 102/17 <b>expect [4]</b> 45/15 46/7 113/9 114/3 <b>expected [1]</b> 111/7 <b>expensive [2]</b> 93/8 93/14 <b>experience [6]</b> 62/11 63/15 83/5 90/24 93/4 111/18 <b>experienced [1]</b> 118/3 <b>experiment [1]</b> 110/15 <b>expert [8]</b> 69/12 69/17 69/20 71/1 74/18 79/16 111/1 122/12 <b>explain [3]</b> 45/16 46/8 46/9 <b>explained [3]</b> 12/8 14/9 63/24 <b>explaining [2]</b> 41/16 50/9 <b>explanation [5]</b> 19/19 24/25 50/14 51/7 114/11 <b>explore [1]</b> 108/3	<b>exposed [4]</b> 11/9 11/15 13/21 65/3 <b>exposure [3]</b> 14/4 14/10 55/2 <b>express [2]</b> 40/13 54/15 <b>expressed [5]</b> 52/1 56/8 70/12 72/14 76/19 <b>expression [1]</b> 72/6 <b>expressly [1]</b> 60/25 <b>extended [1]</b> 41/21 <b>extending [1]</b> 5/7 <b>extensively [1]</b> 51/2 <b>extent [5]</b> 24/15 33/11 73/11 77/20 110/20 <b>extra [4]</b> 16/16 39/14 40/15 40/23 <b>extraction [3]</b> 106/7 106/19 106/24 <b>extremely [1]</b> 85/9 <b>eye [1]</b> 36/25												
	<b>E</b>				<b>F</b>												
<b>Dr John... [1]</b> 62/2 <b>Dr Jones [5]</b> 52/1 71/4 74/16 75/17 78/11 <b>Dr Jones' [1]</b> 75/11 <b>Dr Keel [1]</b> 57/22 <b>Dr Khair [1]</b> 67/2 <b>Dr Lowe [3]</b> 2/12 2/13 71/18 <b>Dr Ludlam [3]</b> 60/12 75/6 112/4 <b>Dr MacDonald [2]</b> 84/10 92/1 <b>Dr Mackenzie [5]</b> 26/11 27/2 28/5 28/14 30/6 <b>Dr Madhok [12]</b> 45/1 45/14 45/22 46/10 49/8 50/7 51/5 51/13 52/4 53/4 85/17 112/1 <b>Dr McDonald [4]</b> 66/2 85/2 92/23 96/8 <b>Dr Melbye [1]</b> 116/3 <b>Dr MLN Willoughby [1]</b> 41/6 <b>Dr Morris [5]</b> 12/4 29/4 30/6 30/22 31/18 <b>Dr Mortimer [1]</b> 2/16 <b>Dr Peter Jones' [1]</b> 72/20 <b>Dr Pettigrew [2]</b> 41/14 41/15 <b>Dr Prentice [5]</b> 37/11 85/1 87/7 103/19 108/16 <b>Dr Preston [3]</b> 9/11 9/17 27/22 <b>Dr Ratnoff [1]</b> 94/14 <b>Dr Rejman [3]</b> 70/2 70/4 78/11 <b>Dr Rizza [1]</b> 75/10 <b>Dr Russell [2]</b> 26/10 27/1 <b>Dr Savidge [2]</b> 2/22 69/11 <b>Dr Sherlock [1]</b> 26/22 <b>Dr Simpson [12]</b> 5/20 69/6 69/16 69/24 71/24 72/3 73/9 75/25 76/7 77/13 79/13 79/15 <b>Dr Simpson's [1]</b> 71/18 <b>Dr Small [1]</b> 37/13 <b>Dr Steven [13]</b> 20/16 22/5 33/16 36/10 36/14 37/7 37/14 38/11 39/13 40/20 45/21 46/7 86/16 <b>Dr Steven's [2]</b> 26/13	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 45/9 50/25 75/6 97/14 111/19 <b>educate [1]</b> 109/21 <b>education [1]</b> 29/11 <b>effect [10]</b> 47/24 91/5 104/1 107/10 107/17 109/23 109/24 110/6 110/21 110/24	<b>each [3]</b> 84/18 90/5 101/14 <b>earlier [13]</b> 14/12 14/15 14/16 59/18 59/20 68/8 72/9 86/16 86/21 94/20 101/21 110/10 111/25 <b>early [12]</b> 9/12 17/13 20/5 22/13 23/13 25/6 25/15 35/17 40/1 92/22 94/23 99/25 <b>early 90s [1]</b> 23/13 <b>earth [1]</b> 113/22 <b>Easter [1]</b> 122/21 <b>easy [2]</b> 30/17 121/11 <b>Edinburgh [6]</b> 33/6 4

<p><b>F</b></p> <p><b>families [1]</b> 109/11</p> <p><b>far [8]</b> 19/19 25/21 38/21 66/21 96/16 101/9 121/20 122/3</p> <p><b>fatal [1]</b> 8/16</p> <p><b>features [1]</b> 49/17</p> <p><b>February [10]</b> 2/5 3/2 3/5 3/17 54/7 55/10 55/18 64/18 117/11 122/15</p> <p><b>feedback [1]</b> 47/1</p> <p><b>feel [1]</b> 70/17</p> <p><b>feeling [1]</b> 7/5</p> <p><b>feelings [1]</b> 70/12</p> <p><b>felt [2]</b> 69/21 90/25</p> <p><b>few [8]</b> 1/6 25/24 30/21 32/13 33/24 51/5 63/10 117/22</p> <p><b>field [1]</b> 63/6</p> <p><b>fifth [1]</b> 2/8</p> <p><b>figures [1]</b> 23/24</p> <p><b>file [8]</b> 101/3 101/9 101/14 101/15 101/18 102/9 102/12 102/20</p> <p><b>files [5]</b> 101/10 101/19 102/1 102/2 102/23</p> <p><b>filing [1]</b> 100/23</p> <p><b>final [3]</b> 49/3 51/16 72/15</p> <p><b>finally [3]</b> 8/22 58/8 123/23</p> <p><b>financially [1]</b> 47/4</p> <p><b>find [5]</b> 50/23 50/25 71/16 91/3 105/10</p> <p><b>finding [2]</b> 50/17 113/11</p> <p><b>fine [4]</b> 6/11 38/25 89/13 89/14</p> <p><b>fingers [1]</b> 107/24</p> <p><b>finish [1]</b> 59/20</p> <p><b>first [35]</b> 1/24 2/2 2/10 3/19 11/1 11/7 12/16 13/16 14/3 14/10 15/6 15/17 18/17 20/14 24/13 25/5 25/6 25/8 28/21 40/1 43/18 53/14 60/13 65/25 68/14 73/1 73/3 88/15 90/16 94/20 108/20 109/21 115/25 119/2 119/3</p> <p><b>firsthand [1]</b> 37/19</p> <p><b>firstly [3]</b> 57/16 95/5 96/3</p> <p><b>five [5]</b> 22/7 24/1 34/3 35/25 107/5</p> <p><b>five years [1]</b> 22/7</p> <p><b>flag [1]</b> 115/10</p> <p><b>Fleetbank [2]</b> 1/7</p>	<p>121/25</p> <p><b>flooded [1]</b> 28/10</p> <p><b>fluids [1]</b> 98/19</p> <p><b>flying [1]</b> 115/10</p> <p><b>focus [2]</b> 73/4 118/4</p> <p><b>focusing [1]</b> 118/5</p> <p><b>folder [1]</b> 100/23</p> <p><b>Follett [7]</b> 13/7 13/9 14/25 33/17 49/8 116/17 117/8</p> <p><b>follow [8]</b> 11/10 20/2 23/7 65/17 66/13 70/7 88/11 97/24</p> <p><b>follow-up [3]</b> 20/2 23/7 97/24</p> <p><b>followed [4]</b> 36/7 43/11 71/12 98/20</p> <p><b>following [5]</b> 4/10 35/12 39/10 56/21 86/10</p> <p><b>Forbes [58]</b> 17/5 20/10 21/16 23/22 25/5 26/8 27/1 33/17 35/13 35/19 37/11 42/2 44/24 45/14 46/10 46/24 47/1 47/19 48/3 48/7 48/23 49/8 51/12 51/22 52/4 52/11 66/2 68/17 68/20 73/12 73/15 81/20 82/7 82/21 83/23 84/15 85/2 85/13 86/11 87/7 91/10 92/16 94/2 94/25 103/19 103/20 106/21 107/8 108/16 111/4 113/20 115/15 116/1 116/7 117/7 118/2 118/6 118/13</p> <p><b>Forbes' [2]</b> 82/15 83/18</p> <p><b>forbidden [1]</b> 60/25</p> <p><b>fore [1]</b> 123/6</p> <p><b>Forgive [1]</b> 98/22</p> <p><b>form [1]</b> 6/19</p> <p><b>format [1]</b> 83/13</p> <p><b>formerly [1]</b> 41/7</p> <p><b>forms [1]</b> 101/8</p> <p><b>formulate [1]</b> 113/24</p> <p><b>forward [1]</b> 120/21</p> <p><b>forwarded [1]</b> 56/3</p> <p><b>found [4]</b> 15/25 42/14 55/4 55/5</p> <p><b>foundation [1]</b> 121/18</p> <p><b>four [7]</b> 24/10 24/24 56/22 59/21 59/22 59/23 109/25</p> <p><b>four o'clock [3]</b> 59/21 59/22 59/23</p> <p><b>fourth [2]</b> 65/6 77/12</p> <p><b>Fractionation [1]</b> 97/14</p>	<p><b>Franklin [7]</b> 61/14 61/25 62/9 63/9 63/23 63/25 64/5</p> <p><b>Franklin's [1]</b> 63/3</p> <p><b>frequency [1]</b> 52/25</p> <p><b>frequent [1]</b> 91/18</p> <p><b>fresh [2]</b> 106/14 118/9</p> <p><b>Friday [2]</b> 1/1 59/19</p> <p><b>friend [1]</b> 82/21</p> <p><b>frightening [1]</b> 23/25</p> <p><b>Froebel [6]</b> 43/21 44/25 49/8 101/22 111/17 116/13</p> <p><b>from [108]</b> 3/23 4/5 7/17 9/19 12/5 13/13 13/23 14/25 16/3 17/9 18/18 21/17 22/4 22/13 23/21 25/10 26/24 31/24 32/18 32/23 33/19 36/6 37/18 38/2 38/12 39/1 39/23 40/8 40/12 44/19 47/1 47/5 48/24 49/10 50/5 50/8 50/24 51/17 53/16 53/20 53/20 54/3 54/12 55/4 55/20 55/23 57/12 58/1 58/5 58/7 60/6 60/15 63/11 64/4 64/20 64/22 65/2 65/23 67/17 72/13 72/19 73/16 74/10 75/6 75/7 75/11 79/19 81/11 81/19 81/23 83/5 83/25 84/2 88/3 88/12 90/23 91/22 93/13 93/19 93/21 94/11 94/25 96/7 96/19 98/14 99/10 99/24 100/12 100/19 101/1 101/17 102/4 108/17 111/1 115/3 115/11 119/8 119/16 119/23 120/3 120/9 122/5 122/10 122/12 122/21 123/17 123/19 123/23</p> <p><b>frozen [1]</b> 106/14</p> <p><b>frustrated [1]</b> 58/24</p> <p><b>frustration [1]</b> 59/7</p> <p><b>fully [2]</b> 23/7 38/21</p> <p><b>function [26]</b> 3/24 4/18 4/25 10/12 19/12 19/15 19/20 19/23 20/20 21/3 21/9 26/16 27/21 27/25 33/20 34/2 34/9 34/25 35/3 36/18 38/8 42/1 68/15 86/19 94/22 101/23</p> <p><b>functions [1]</b> 45/12</p> <p><b>further [19]</b> 1/20 50/22 51/7 53/19</p>	<p>66/13 68/3 68/11 69/5 70/16 71/5 71/16 72/3 72/15 78/21 90/12 117/1 120/10 123/2 125/3</p> <p><b>future [9]</b> 11/10 16/19 22/9 65/12 66/9 69/24 86/13 122/5 123/23</p> <p><b>G</b></p> <p><b>Gallo [1]</b> 94/25</p> <p><b>Gallo's [1]</b> 115/3</p> <p><b>Gary [1]</b> 120/9</p> <p><b>gastroenterology [1]</b> 26/10</p> <p><b>gather [1]</b> 88/4</p> <p><b>gave [8]</b> 12/6 14/18 29/23 45/6 57/6 90/14 114/11 118/2</p> <p><b>general [28]</b> 7/1 7/5 9/9 13/1 13/5 15/14 16/16 16/23 17/1 17/7 17/10 17/25 21/23 28/12 37/22 45/17 48/20 57/2 63/14 73/21 77/8 77/18 84/8 93/1 93/11 97/3 115/25 117/20</p> <p><b>generally [7]</b> 5/9 8/6 11/4 11/20 21/5 39/4 48/19</p> <p><b>generation [5]</b> 10/25 12/16 12/17 13/6 13/16</p> <p><b>generic [1]</b> 71/13</p> <p><b>get [19]</b> 4/1 15/22 18/12 23/6 24/2 24/6 27/14 28/15 56/15 59/11 62/16 67/22 72/17 73/25 96/11 105/8 107/7 116/21 117/9</p> <p><b>getting [9]</b> 25/9 27/18 28/10 57/9 94/11 111/14 116/1 118/3 118/9</p> <p><b>getting an [1]</b> 118/3</p> <p><b>GGCL0000152 [1]</b> 53/14</p> <p><b>give [37]</b> 15/14 16/21 18/14 18/17 21/15 21/16 21/20 21/24 22/1 23/2 36/19 40/22 50/16 59/21 59/22 77/4 77/25 79/16 79/17 82/13 89/7 89/18 104/10 105/8 105/13 105/15 106/18 107/3 107/4 107/12 107/21 108/7 110/22 115/15 117/20 121/22 122/19</p>	<p><b>given [27]</b> 6/6 15/8 18/12 19/8 23/10 42/17 52/23 61/15 61/21 72/4 77/14 77/19 82/16 86/25 88/6 88/23 89/9 94/19 94/19 98/9 106/18 114/8 114/10 115/12 119/5 119/12 121/6</p> <p><b>gives [1]</b> 79/13</p> <p><b>giving [6]</b> 22/16 22/25 48/9 91/4 107/23 116/19</p> <p><b>Glasgow [37]</b> 1/23 10/6 10/25 13/15 25/21 28/8 29/15 32/24 34/15 41/8 45/10 49/12 52/2 52/23 57/17 61/17 63/13 66/21 67/13 68/23 75/7 77/23 83/20 84/1 84/14 90/1 94/9 95/4 97/21 99/23 103/12 104/16 106/21 108/10 111/17 117/10 119/9</p> <p><b>go [33]</b> 2/3 2/8 3/3 3/7 10/9 11/2 31/1 33/22 34/6 36/12 41/3 42/18 42/23 45/9 46/13 49/14 54/8 58/22 65/6 68/5 71/3 71/17 72/9 75/5 75/23 77/11 101/1 104/4 104/4 105/25 105/25 106/3 116/22</p> <p><b>God [1]</b> 116/16</p> <p><b>goes [5]</b> 34/20 72/24 79/4 104/23 120/25</p> <p><b>going [37]</b> 2/25 7/21 10/10 15/19 18/13 22/22 22/24 25/23 26/17 33/10 33/18 39/6 45/1 50/6 51/21 53/10 58/18 59/10 59/14 60/5 60/7 70/10 73/6 73/15 74/5 75/15 79/25 80/3 80/11 81/24 83/11 83/15 87/10 96/10 114/9 116/4 119/2</p> <p><b>gone [1]</b> 6/21</p> <p><b>good [11]</b> 21/5 21/10 26/10 29/6 29/22 31/21 38/4 97/15 102/22 110/7 117/12</p> <p><b>GORDON [3]</b> 1/3 28/6 125/2</p> <p><b>GORDON LOWE [2]</b> 1/3 125/2</p> <p><b>got [32]</b> 8/22 10/1 16/15 28/13 28/20</p>	<p>31/6 32/2 37/23 38/13 56/22 58/22 59/4 61/25 66/19 68/3 75/12 90/10 91/16 94/25 95/17 97/1 98/11 103/8 103/11 108/24 108/25 111/5 112/6 113/21 116/2 116/10 116/17</p> <p><b>Government [7]</b> 55/15 58/19 79/2 79/22 122/22 122/25 123/19</p> <p><b>GP [6]</b> 15/23 15/24 16/5 16/10 16/13 29/17</p> <p><b>gradually [2]</b> 25/11 121/19</p> <p><b>grant [1]</b> 47/5</p> <p><b>great [5]</b> 33/19 95/20 106/24 120/23 123/8</p> <p><b>greater [1]</b> 94/9</p> <p><b>Greer [1]</b> 37/14</p> <p><b>group [20]</b> 2/4 7/14 51/23 68/12 68/15 68/16 68/25 69/12 69/21 72/13 73/3 73/11 73/18 75/13 76/5 78/23 79/19 94/8 94/10 122/12</p> <p><b>Group's [1]</b> 69/14</p> <p><b>guideline [2]</b> 9/22 10/3</p> <p><b>guidelines [4]</b> 9/18 9/23 11/22 27/23</p> <p><b>H</b></p> <p><b>had [169]</b></p> <p><b>hadn't [2]</b> 75/18 111/21</p> <p><b>haematologist [3]</b> 92/19 97/8 103/25</p> <p><b>haematologists [9]</b> 83/24 84/7 84/13 85/14 85/23 91/22 92/11 92/14 92/25</p> <p><b>haematology [8]</b> 63/1 63/14 84/9 84/9 84/11 84/17 85/3 98/3</p> <p><b>haemophilia [134]</b></p> <p><b>haemophilia A [1]</b> 42/20</p> <p><b>haemophilia B [1]</b> 112/18</p> <p><b>haemophilia care [1]</b> 85/19</p> <p><b>haemophilia: [1]</b> 42/8</p> <p><b>haemophilia: are [1]</b> 42/8</p> <p><b>haemophilic [4]</b> 27/4 34/1 34/19 44/19</p> <p><b>haemophiliacs [3]</b> 33/21 54/1 71/21</p>
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<p><b>H</b></p> <p><b>haemophilic [2]</b> 34/11 81/17</p> <p><b>haemostatic [1]</b> 105/12</p> <p><b>half [12]</b> 2/10 33/22 40/1 41/4 43/13 49/4 52/12 81/16 82/20 119/17 119/18 120/22</p> <p><b>half-an-hour [1]</b> 82/20</p> <p><b>halfway [1]</b> 34/21</p> <p><b>hand [4]</b> 33/23 35/5 42/24 52/6</p> <p><b>hang [1]</b> 102/23</p> <p><b>happen [2]</b> 55/16 115/7</p> <p><b>happened [6]</b> 56/20 73/9 90/1 119/9 121/14 121/16</p> <p><b>happening [1]</b> 56/12</p> <p><b>happy [6]</b> 66/4 78/2 82/18 83/17 85/12 91/25</p> <p><b>has [17]</b> 1/5 13/3 15/2 19/1 45/25 59/5 61/15 109/1 113/7 114/2 118/1 118/20 120/19 121/4 122/8 123/16 124/3</p> <p><b>have [181]</b></p> <p><b>haven't [4]</b> 89/21 89/23 90/3 108/24</p> <p><b>having [15]</b> 4/12 9/24 12/20 12/21 24/9 33/2 33/12 38/18 46/24 47/24 53/23 63/21 87/9 94/3 97/23</p> <p><b>Hay [5]</b> 8/5 8/9 9/10 9/17 21/18</p> <p><b>Hay's [1]</b> 9/13</p> <p><b>HCDO0000271 [2]</b> 2/2 68/5</p> <p><b>HCDO0000278 [1]</b> 60/11</p> <p><b>he [121]</b> 2/14 2/16 2/24 4/5 4/8 4/16 4/22 5/3 5/14 6/2 8/12 9/11 13/10 17/5 17/5 20/19 20/24 27/9 28/5 28/22 29/4 32/3 36/12 36/19 36/22 37/2 37/3 37/15 37/17 37/19 45/23 46/8 46/25 47/2 47/20 48/8 48/10 48/19 51/13 55/12 56/17 57/4 57/17 61/16 61/18 61/20 61/23 62/1 62/21 62/22 63/3 63/11 63/12 64/2 69/18 69/19 69/21 69/22 69/25 70/2 70/6</p>	<p>70/9 70/13 70/13 72/13 76/4 82/22 82/23 83/1 85/3 86/11 89/6 89/6 89/8 89/24 90/20 90/21 90/25 91/3 94/5 94/7 94/9 94/12 94/14 94/15 94/25 95/11 95/14 95/17 103/21 111/5 111/22 112/5 113/21 113/21 113/24 114/2 114/3 114/10 114/12 114/12 114/15 114/16 114/18 114/19 115/16 115/17 115/20 115/21 116/5 116/8 116/9 116/12 116/16 116/18 116/21 117/12 117/13 117/14 118/7 118/20</p> <p><b>he'd [5]</b> 20/21 36/14 62/11 76/4 114/5</p> <p><b>head [1]</b> 63/1</p> <p><b>heading [4]</b> 34/12 42/19 53/17 69/9</p> <p><b>health [21]</b> 58/7 59/9 60/25 70/3 70/19 70/22 71/10 78/11 80/15 80/16 80/24 80/25 81/18 93/13 93/16 96/13 97/5 100/5 100/9 116/24 117/5</p> <p><b>health department [1]</b> 97/5</p> <p><b>health/infectious [1]</b> 96/13</p> <p><b>healthcare [1]</b> 61/9</p> <p><b>hear [6]</b> 118/11 119/22 120/3 121/25 122/6 122/12</p> <p><b>heard [5]</b> 57/12 75/18 83/23 115/25 122/18</p> <p><b>hearing [1]</b> 72/7</p> <p><b>hearings [5]</b> 119/21 120/19 123/6 123/7 123/9</p> <p><b>heart [3]</b> 108/15 109/2 109/3</p> <p><b>heart-breaking [3]</b> 108/15 109/2 109/3</p> <p><b>heat [1]</b> 116/25</p> <p><b>heavy [4]</b> 24/11 24/14 25/2 25/21</p> <p><b>held [5]</b> 32/23 35/13 70/7 100/19 102/4</p> <p><b>help [8]</b> 26/18 66/5 67/10 79/15 82/24 83/8 105/17 114/17</p> <p><b>helpful [1]</b> 71/15</p> <p><b>helping [1]</b> 66/6</p> <p><b>hence [2]</b> 93/6 106/6</p> <p><b>Hep [2]</b> 13/13 13/14</p>	<p><b>Hep B [1]</b> 13/13</p> <p><b>Hep C [1]</b> 13/14</p> <p><b>hepatitis [133]</b></p> <p><b>hepatitis B [20]</b> 4/1 4/3 4/19 4/25 5/5 6/15 7/6 7/20 8/21 10/12 11/11 11/14 11/18 21/3 24/11 25/2 25/8 25/24 34/24 97/5</p> <p><b>hepatitis C [54]</b> 1/22 2/14 2/17 2/21 3/9 3/13 4/15 5/6 6/12 6/20 7/21 7/24 8/21 9/2 9/4 9/19 9/23 10/6 10/14 10/18 10/21 12/2 12/4 12/18 12/25 13/4 13/23 14/8 15/5 15/25 16/10 16/22 19/2 19/17 19/21 19/24 22/14 22/17 23/1 27/17 27/19 28/5 28/13 29/3 29/11 30/7 30/11 30/22 31/25 64/21 65/2 65/4 68/10 77/2</p> <p><b>hepatological [1]</b> 24/5</p> <p><b>hepatologist [4]</b> 20/2 22/15 23/6 29/18</p> <p><b>hepatologists [3]</b> 9/5 11/24 109/5</p> <p><b>hepatology [1]</b> 28/16</p> <p><b>her [3]</b> 58/1 71/16 121/9</p> <p><b>here [11]</b> 4/11 11/2 22/24 24/22 38/5 65/7 66/22 75/3 106/2 114/10 122/1</p> <p><b>high [7]</b> 18/9 18/18 19/10 21/7 27/3 101/13 112/11</p> <p><b>high purity [1]</b> 18/18</p> <p><b>highly [3]</b> 31/14 104/25 105/6</p> <p><b>Hill [1]</b> 72/1</p> <p><b>him [14]</b> 4/9 51/18 56/8 57/6 69/14 69/21 70/11 91/4 94/15 103/22 114/8 114/14 116/1 118/21</p> <p><b>himself [1]</b> 89/4</p> <p><b>his [26]</b> 6/4 27/22 27/23 35/24 41/8 48/18 51/22 62/14 63/4 63/10 63/11 70/10 72/12 72/14 76/8 89/25 90/1 91/1 94/5 94/7 94/10 94/16 94/17 95/2 95/17 95/18</p> <p><b>histology [1]</b> 35/7</p> <p><b>history [4]</b> 25/7 84/3 84/6 119/8</p>	<p><b>hit [2]</b> 27/9 27/10</p> <p><b>hitherto [1]</b> 66/25</p> <p><b>HIV [35]</b> 3/15 5/12 5/13 6/13 6/20 6/23 7/25 9/24 13/8 13/13 17/3 30/14 31/21 31/25 32/3 49/7 49/16 49/18 49/25 50/11 50/12 50/21 51/20 52/15 53/7 69/3 70/23 73/14 75/1 79/1 108/21 112/1 112/2 114/25 117/22</p> <p><b>HIV negative [2]</b> 112/1 117/22</p> <p><b>HIV testing [1]</b> 5/12</p> <p><b>HIV-type [4]</b> 3/15 5/13 6/13 9/24</p> <p><b>hold [1]</b> 68/18</p> <p><b>holiday [2]</b> 57/22 124/6</p> <p><b>holidays [1]</b> 115/24</p> <p><b>home [9]</b> 1/12 36/6 36/8 81/12 82/1 98/9 119/5 119/16 124/4</p> <p><b>home treatment [1]</b> 82/1</p> <p><b>honest [2]</b> 22/1 79/18</p> <p><b>hope [6]</b> 103/8 108/5 109/12 121/2 122/5 124/5</p> <p><b>hoped [1]</b> 107/24</p> <p><b>hopeful [1]</b> 95/14</p> <p><b>horror [1]</b> 115/4</p> <p><b>hospital [9]</b> 30/24 34/16 40/7 41/7 41/14 97/4 97/7 98/15 107/1</p> <p><b>hospitals [2]</b> 32/14 32/25</p> <p><b>hour [2]</b> 82/20 86/9</p> <p><b>hours [1]</b> 63/17</p> <p><b>House [1]</b> 1/7</p> <p><b>household [6]</b> 51/19 51/25 52/17 53/1 53/2 53/8</p> <p><b>how [23]</b> 13/18 15/18 17/12 22/17 22/25 33/9 59/2 67/12 67/14 71/12 81/25 83/19 86/14 90/20 92/6 100/11 104/13 106/4 110/3 110/8 113/21 113/22 113/24</p> <p><b>however [3]</b> 43/1 77/12 115/11</p> <p><b>HTLV [1]</b> 113/4</p> <p><b>HTLV-III [1]</b> 113/4</p> <p><b>huge [2]</b> 28/9 119/12</p> <p><b>hundred [1]</b> 28/10</p> <p><b>hypothesis [1]</b> 37/20</p>	<p><b>I</b></p> <p><b>I accept [1]</b> 89/16</p> <p><b>I agree [1]</b> 82/3</p> <p><b>I agreed [1]</b> 64/2</p> <p><b>I also [1]</b> 15/7</p> <p><b>I am [8]</b> 1/13 2/25 33/18 53/10 59/14 60/7 123/11 123/21</p> <p><b>I and [3]</b> 10/8 108/17 109/12</p> <p><b>I ask [1]</b> 118/18</p> <p><b>I asked [2]</b> 51/18 100/17</p> <p><b>I assume [1]</b> 73/6</p> <p><b>I attended [1]</b> 103/12</p> <p><b>I be [1]</b> 83/2</p> <p><b>I became [6]</b> 20/8 23/19 26/13 32/19 50/4 100/16</p> <p><b>I briefly [1]</b> 20/15</p> <p><b>I came [1]</b> 32/13</p> <p><b>I campaigned [1]</b> 28/14</p> <p><b>I can [7]</b> 61/13 78/19 86/24 89/10 96/7 118/11 119/2</p> <p><b>I can't [2]</b> 33/1 116/8</p> <p><b>I cannot [1]</b> 32/18</p> <p><b>I conveyed [1]</b> 5/17</p> <p><b>I couldn't [1]</b> 100/14</p> <p><b>I critically [1]</b> 40/25</p> <p><b>I did [5]</b> 4/9 6/1 6/7 35/14 51/15</p> <p><b>I didn't [6]</b> 49/2 66/8 75/16 103/4 115/23 116/7</p> <p><b>I do [2]</b> 46/23 48/21</p> <p><b>I don't [25]</b> 3/21 10/20 10/22 16/8 23/21 24/20 25/18 51/12 52/6 59/9 66/11 66/18 68/4 72/9 72/23 73/24 77/6 77/8 77/20 77/22 89/20 110/23 113/17 115/19 118/15</p> <p><b>I expect [1]</b> 46/7</p> <p><b>I firstly [1]</b> 57/16</p> <p><b>I got [1]</b> 61/25</p> <p><b>I had [9]</b> 26/8 40/19 62/2 63/13 63/19 73/15 82/25 116/6 120/23</p> <p><b>I hadn't [2]</b> 75/18 111/21</p> <p><b>I have [8]</b> 11/2 47/9 79/23 90/12 90/12 106/10 108/8 118/24</p> <p><b>I haven't [1]</b> 108/24</p> <p><b>I having [1]</b> 46/24</p> <p><b>I heard [1]</b> 115/25</p> <p><b>I hope [3]</b> 103/8 122/5</p>	<p>124/5</p> <p><b>I imagine [1]</b> 1/12</p> <p><b>I just [8]</b> 63/7 64/15 66/10 76/10 80/22 81/13 83/8 104/11</p> <p><b>I knew [4]</b> 83/5 83/6 83/7 115/24</p> <p><b>I know [2]</b> 101/9 116/9</p> <p><b>I made [1]</b> 82/15</p> <p><b>I may [2]</b> 53/9 119/6</p> <p><b>I mean [17]</b> 6/24 10/22 13/19 15/13 40/5 40/7 40/14 77/23 88/21 89/12 93/9 97/5 101/16 106/23 113/12 116/13 117/24</p> <p><b>I mentioned [2]</b> 20/25 35/12</p> <p><b>I met [1]</b> 85/3</p> <p><b>I need [1]</b> 72/23</p> <p><b>I never [2]</b> 38/11 40/14</p> <p><b>I noted [1]</b> 63/10</p> <p><b>I occasionally [1]</b> 63/15</p> <p><b>I often [1]</b> 110/8</p> <p><b>I or [1]</b> 23/22</p> <p><b>I presume [1]</b> 41/18</p> <p><b>I promised [1]</b> 121/1</p> <p><b>I put [1]</b> 96/22</p> <p><b>I raised [2]</b> 60/17 65/25</p> <p><b>I read [3]</b> 41/12 44/21 103/16</p> <p><b>I recall [2]</b> 68/16 101/11</p> <p><b>I recalled [1]</b> 35/17</p> <p><b>I recognise [1]</b> 6/7</p> <p><b>I remember [4]</b> 43/21 44/24 91/4 103/19</p> <p><b>I repeat [1]</b> 21/15</p> <p><b>I represented [1]</b> 68/23</p> <p><b>I said [17]</b> 4/10 4/18 4/23 5/12 28/3 44/1 63/8 82/17 83/10 86/9 86/21 91/20 95/2 100/24 103/11 117/5 117/10</p> <p><b>I said: what [1]</b> 7/1</p> <p><b>I sat [1]</b> 20/10</p> <p><b>I saw [2]</b> 25/5 116/16</p> <p><b>I say [4]</b> 18/5 25/24 51/12 110/16</p> <p><b>I see [2]</b> 9/24 41/14</p> <p><b>I seem [1]</b> 103/22</p> <p><b>I sent [2]</b> 57/19 63/21</p> <p><b>I should [4]</b> 74/13 80/15 85/12 118/19</p> <p><b>I spent [1]</b> 54/22</p> <p><b>I started [1]</b> 96/8</p> <p><b>I subscribed [1]</b> 44/22</p>
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I	43/23 54/24 55/8 58/10 78/20 84/24 85/20 86/15 100/3 103/8 108/2 111/22 112/5 114/15 116/17 121/23 i.e [1] 3/15 lan [3] 4/4 61/14 79/6 ID [1] 109/5 idea [1] 21/24 identification [1] 67/10 identified [4] 7/11 67/14 67/15 97/23 identify [5] 13/18 65/15 66/24 67/4 67/8 identifying [2] 7/14 102/4 if [126] ill [1] 113/4 ill [1] 62/7 illustrated [1] 119/7 imagine [1] 1/12 immediate [1] 8/16 immediately [4] 28/7 86/11 98/15 117/18 immune [7] 34/10 38/8 39/20 42/1 45/11 94/22 101/23 immunity [3] 49/6 49/21 50/18 immunodeficient [1] 43/8 immunoglobulin [2] 112/8 112/10 immunoglobulins [1] 112/20 immunological [7] 34/8 39/16 40/17 42/7 42/14 45/21 51/14 Impaired [1] 49/5 impending [2] 73/5 83/7 imperative [1] 117/5 implicated [1] 98/1 implication [1] 107/12 implications [4] 7/23 44/7 52/1 87/9 importance [3] 46/2 91/5 93/6 important [21] 8/23 9/14 10/14 14/1 18/2 26/1 74/19 76/21 77/3 85/10 92/16 93/2 93/11 93/17 96/12 97/3 97/15 105/6 106/17 117/1 121/1 impression [2] 67/21 95/2 impressive [1] 63/4 inactivated [1] 18/20 inappropriate [1]	89/25 inclined [1] 24/15 include [3] 13/2 14/8 16/25 including [12] 1/9 4/7 15/5 23/2 29/11 32/17 38/1 49/15 62/2 75/4 122/22 123/17 increased [2] 25/11 47/7 increasing [2] 30/21 36/23 increasingly [1] 92/7 indeed [11] 5/24 62/24 75/13 78/3 79/3 85/6 85/13 92/21 102/15 108/11 122/6 independent [1] 104/15 indicate [3] 26/20 115/21 119/2 indicated [1] 118/20 indicating [1] 58/16 indication [1] 115/16 indicator [1] 94/22 individual [10] 55/25 64/6 78/1 80/20 89/8 90/6 101/19 101/24 102/17 105/1 individuals [1] 123/19 ineffective [1] 26/23 infected [2] 69/3 121/12 infecting [1] 98/17 infection [10] 24/19 32/4 34/24 43/6 49/6 49/25 50/12 50/22 82/2 124/2 infections [5] 108/11 108/15 114/25 123/4 124/4 infectious [4] 29/17 31/23 96/13 98/16 Infirmary [34] 1/23 10/6 11/1 13/15 32/14 32/24 33/7 34/15 40/1 40/6 45/10 48/6 49/1 52/3 52/14 52/16 57/17 61/17 66/22 66/24 67/13 68/23 84/14 90/2 95/4 96/17 97/22 97/25 99/7 99/23 100/13 102/15 104/17 108/10 influenced [2] 8/17 87/23 inform [7] 10/13 13/5 15/19 16/12 55/22 58/3 66/11 information [69] 5/16 6/6 9/1 12/7 12/12 16/16 18/12 18/22	19/2 20/19 21/5 22/16 22/18 22/25 23/2 34/22 37/16 39/23 40/14 40/23 45/7 45/18 52/23 54/1 54/7 54/14 54/24 55/21 56/11 56/16 57/9 58/6 59/4 59/6 64/18 65/12 66/6 68/4 70/25 71/20 73/20 75/14 76/2 77/4 77/18 83/1 86/1 86/6 86/13 86/19 86/25 87/3 87/16 87/16 88/4 88/5 88/8 88/12 88/23 89/12 94/10 94/12 94/17 96/2 96/9 99/12 101/8 116/15 116/17 informed [7] 11/8 23/8 38/5 38/17 40/12 53/23 98/17 informing [1] 19/3 infused [1] 106/20 infusion [1] 106/13 inhibitor [4] 91/8 91/13 93/15 95/5 inhibitors [1] 93/8 initial [1] 15/12 initially [6] 12/3 13/10 17/4 92/17 92/23 107/6 initiated [2] 42/1 94/9 injection [1] 105/8 injury [16] 104/7 104/12 104/13 104/16 105/1 105/5 105/7 105/11 105/15 105/17 105/20 105/22 109/22 110/1 110/5 110/18 input [2] 64/16 92/18 inquiries [1] 89/15 inquiry [36] 1/9 8/7 14/19 21/14 21/15 22/21 29/24 47/20 48/8 48/23 63/12 67/25 68/3 85/25 87/15 88/2 88/9 88/14 88/22 88/23 89/5 89/6 89/13 89/17 90/2 103/21 109/13 109/13 117/17 120/22 121/3 121/4 121/7 123/1 123/10 124/7 Inquiry's [1] 123/8 insensitive [1] 26/19 insight [1] 119/9 instance [2] 55/1 86/17 instantly [1] 118/13 instead [1] 58/4 instructive [1] 110/18 intensive [1] 29/11 intensively [1] 118/4	interaction [1] 116/7 interest [12] 7/8 61/2 61/6 62/20 63/2 63/18 64/10 84/8 94/5 94/7 94/11 94/18 interested [6] 27/18 36/17 47/3 106/11 110/12 111/20 interests [3] 5/22 73/13 78/19 interferon [10] 23/11 26/3 26/4 26/7 29/12 29/20 30/4 30/5 31/12 31/16 intermediate [1] 18/20 intermittent [2] 19/11 21/8 international [1] 123/18 interpretation [1] 51/14 intervals [1] 78/4 intimated [1] 72/12 into [6] 45/9 92/10 101/9 101/15 119/9 119/16 intravenous [1] 28/9 introduced [1] 11/1 introduction [3] 32/16 83/17 115/15 invaded [1] 119/5 Inverness [1] 93/13 investigate [2] 55/15 96/5 investigated [1] 96/14 investigating [2] 66/17 123/1 investigation [6] 23/9 27/15 66/13 66/20 96/14 123/15 investigations [3] 9/3 30/19 68/1 investigator [2] 102/11 102/20 invite [2] 7/24 14/22 invited [4] 40/22 51/23 73/2 76/4 inviting [1] 41/24 involve [2] 60/20 60/23 involved [28] 9/11 9/18 32/3 40/9 40/25 41/13 44/16 45/11 46/5 47/13 50/25 51/8 52/22 55/11 61/6 62/17 66/5 74/1 75/1 75/21 82/25 83/15 85/6 92/18 93/5 94/6 100/15 124/7 involvement [17] 30/4 38/6 40/19 41/20	43/18 46/6 50/2 50/4 61/8 62/20 64/9 72/21 73/16 75/11 77/21 84/21 113/25 involving [3] 55/20 70/10 74/24 Ireland [5] 3/6 53/23 54/4 54/18 120/6 irrelevant [1] 66/14 irrespective [1] 6/17 is: [3] 21/6 39/1 115/15 is: did [1] 115/15 is: do [1] 39/1 is: we've [1] 21/6 isn't [5] 46/16 81/24 88/24 110/25 113/12 issue [5] 3/21 8/19 53/11 61/11 61/18 issued [2] 57/24 58/12 issues [5] 60/8 68/19 80/3 80/13 81/4 issuing [1] 45/18 it's [60] 3/18 3/24 3/25 5/7 7/7 7/11 8/23 10/4 10/14 18/1 18/1 19/7 22/20 23/12 24/8 24/8 27/10 36/23 39/9 39/10 43/20 43/20 46/18 47/6 49/11 53/15 57/11 59/10 60/14 61/13 62/19 65/8 66/14 68/12 68/21 76/13 79/17 81/17 89/14 92/13 92/15 104/15 104/17 104/25 105/24 106/1 109/1 110/7 111/2 111/15 112/10 112/21 113/18 116/9 117/21 117/23 119/17 120/10 120/20 120/22 item [1] 71/21 itis [1] 99/14 its [11] 26/25 28/16 39/21 47/8 49/25 81/7 82/11 87/19 99/10 110/13 120/24 its evaluation [1] 110/13 itself [1] 104/14 IX [3] 53/17 112/6 112/16
					J Janet [1] 120/3 January [10] 55/12 68/17 82/7 119/21 119/22 119/25 122/5 122/12 123/10 124/11 jaundice [10] 19/9

<p><b>J</b></p> <p><b>jaundice...</b> [9] 20/23 34/23 96/5 97/1 98/13 98/14 98/18 99/3 99/12</p> <p><b>jaundiced</b> [1] 96/4</p> <p><b>job</b> [2] 1/10 63/13</p> <p><b>John</b> [4] 12/3 28/22 29/4 62/2</p> <p><b>join</b> [2] 83/15 124/7</p> <p><b>joined</b> [3] 74/14 84/17 92/3</p> <p><b>joint</b> [7] 28/25 30/10 30/12 31/1 69/7 91/9 91/25</p> <p><b>joints</b> [5] 36/3 36/16 36/25 37/2 37/15</p> <p><b>Jones</b> [5] 52/1 71/4 74/16 75/17 78/11</p> <p><b>Jones'</b> [2] 72/20 75/11</p> <p><b>journal</b> [3] 33/14 42/6 44/23</p> <p><b>journey</b> [1] 22/22</p> <p><b>judged</b> [1] 107/14</p> <p><b>judging</b> [1] 22/15</p> <p><b>judgment</b> [2] 5/23 5/23</p> <p><b>June</b> [1] 56/4</p> <p><b>just</b> [73] 2/22 2/25 3/24 6/14 7/8 7/17 8/2 9/10 9/25 10/2 22/25 30/2 37/2 37/6 37/6 38/7 41/2 42/10 42/23 43/12 46/7 46/12 46/15 47/23 48/16 49/19 54/12 55/5 58/21 60/7 60/13 63/7 64/7 64/15 66/10 66/19 68/13 74/13 75/14 76/10 78/24 80/22 81/6 81/13 81/16 82/23 83/1 83/8 84/3 86/9 86/15 89/12 89/12 90/13 91/21 92/20 94/8 103/18 104/11 107/5 109/19 111/1 111/23 112/5 113/18 114/9 114/13 117/10 119/3 121/4 122/18 123/7 123/14</p> <p><b>just:</b> [1] 44/7</p> <p><b>just: did</b> [1] 44/7</p> <p><b>justify</b> [1] 107/15</p>	<p>22/12 23/7 24/3 36/25 100/24 101/14 102/12 102/20</p> <p><b>keeping</b> [2] 100/18 101/10</p> <p><b>kept</b> [9] 33/9 38/21 39/4 57/9 75/21 94/15 94/15 101/18 107/1</p> <p><b>Khair</b> [1] 67/2</p> <p><b>kind</b> [17] 7/12 14/13 19/2 39/22 44/2 54/13 57/23 62/3 62/14 63/3 63/23 80/1 83/17 101/3 102/7 103/25 110/14</p> <p><b>kindly</b> [2] 44/11 62/9</p> <p><b>Kingdom</b> [1] 109/10</p> <p><b>knew</b> [15] 25/13 25/19 37/12 47/10 47/22 50/11 51/13 70/9 83/5 83/6 83/7 84/18 101/4 115/24 118/6</p> <p><b>knobbly</b> [1] 27/8</p> <p><b>know</b> [91] 3/23 5/10 7/8 8/24 9/1 9/11 10/17 10/21 13/25 15/18 15/21 22/10 23/1 23/10 23/24 25/4 27/3 27/12 32/2 32/22 36/5 36/21 36/23 38/2 38/19 39/1 41/12 44/12 44/14 45/2 45/2 45/5 46/3 46/21 47/1 47/6 47/21 48/1 48/21 48/24 50/9 50/23 52/2 54/21 56/16 56/25 59/5 59/9 60/17 61/25 66/3 67/12 68/4 72/18 73/25 74/10 75/16 76/23 77/22 85/4 88/15 93/15 95/16 97/21 99/6 99/17 99/20 100/11 100/14 100/18 101/9 103/2 103/17 109/1 110/8 110/23 111/16 112/22 113/10 113/13 115/19 115/19 115/23 116/7 116/9 116/14 116/16 116/22 116/24 117/4 122/2</p> <p><b>knowledge</b> [13] 9/1 23/18 32/9 32/10 37/19 38/2 39/1 39/8 48/24 48/25 52/9 52/13 111/2</p> <p><b>known</b> [10] 20/6 25/25 34/14 36/20 45/16 48/3 49/15 50/1 82/1 114/12</p>	<p><b>L</b></p> <p><b>label</b> [1] 90/23</p> <p><b>laboratory</b> [13] 13/9 13/12 31/5 84/9 84/13 91/2 91/6 98/4 102/6 102/22 110/12 115/3 115/4</p> <p><b>laid</b> [1] 121/19</p> <p><b>Lancet</b> [3] 44/22 52/5 52/7</p> <p><b>LANGSTAFF</b> [2] 109/18 125/4</p> <p><b>large</b> [3] 1/7 13/15 95/19</p> <p><b>largely</b> [1] 1/7</p> <p><b>last</b> [20] 1/5 22/7 33/5 33/23 42/24 45/6 46/15 46/19 50/24 51/18 60/18 64/15 72/9 75/24 85/25 108/8 111/21 112/5 114/11 120/19</p> <p><b>late</b> [6] 5/10 8/15 52/10 94/4 108/18 122/17</p> <p><b>later</b> [4] 2/7 67/15 79/11 117/22</p> <p><b>law</b> [5] 74/10 74/11 81/6 85/22 92/19</p> <p><b>lawyers</b> [5] 70/20 71/7 71/12 72/17 73/25</p> <p><b>lead</b> [6] 32/1 51/6 70/7 70/10 76/18 87/22</p> <p><b>leaflets</b> [1] 12/7</p> <p><b>learned</b> [2] 30/16 108/9</p> <p><b>least</b> [13] 6/20 17/8 20/6 23/13 41/20 44/3 66/3 68/25 70/9 95/12 97/5 98/25 108/24</p> <p><b>leave</b> [5] 16/19 62/8 69/22 69/25 70/13</p> <p><b>leaving</b> [1] 64/5</p> <p><b>lecturer</b> [1] 61/23</p> <p><b>led</b> [3] 48/3 48/25 65/20</p> <p><b>left</b> [2] 35/5 70/15</p> <p><b>left-hand</b> [1] 35/5</p> <p><b>legal</b> [16] 1/8 1/16 6/17 60/9 65/18 71/8 72/19 74/7 74/9 75/15 75/20 81/3 81/4 81/8 88/10 97/6</p> <p><b>length</b> [1] 116/11</p> <p><b>less</b> [3] 69/17 107/18 108/6</p> <p><b>lessons</b> [1] 108/9</p> <p><b>let</b> [6] 11/5 15/21 16/14 72/18 119/3</p>	<p>123/23</p> <p><b>let's</b> [2] 96/9 96/10</p> <p><b>letter</b> [24] 13/1 16/13 17/1 17/7 17/24 52/4 52/25 53/4 53/15 53/19 57/19 58/9 58/11 58/21 60/12 62/19 69/5 71/15 82/7 82/10 82/16 83/12 83/14 113/25</p> <p><b>letters</b> [1] 88/3</p> <p><b>level</b> [7] 59/7 93/6 93/12 105/1 105/4 105/8 105/13</p> <p><b>levels</b> [7] 99/8 104/8 104/20 105/10 110/19 111/10 112/8</p> <p><b>LFT</b> [2] 2/22 7/20</p> <p><b>LFT's</b> [1] 3/14</p> <p><b>LFTs</b> [2] 2/14 7/6</p> <p><b>liable</b> [1] 61/3</p> <p><b>liaison</b> [1] 31/14</p> <p><b>liberates</b> [1] 110/2</p> <p><b>licensed</b> [2] 26/8 29/13</p> <p><b>life</b> [1] 81/18</p> <p><b>life-style</b> [1] 81/18</p> <p><b>lifestyle</b> [1] 23/3</p> <p><b>light</b> [4] 71/13 114/13 115/11 122/25</p> <p><b>like</b> [16] 7/20 8/21 27/22 28/7 28/8 32/14 39/16 41/6 92/16 93/13 96/4 99/3 113/10 114/17 120/20 121/13</p> <p><b>like:</b> [1] 22/22</p> <p><b>like: This</b> [1] 22/22</p> <p><b>likely</b> [3] 19/19 71/21 123/13</p> <p><b>limitations</b> [1] 118/1</p> <p><b>limited</b> [1] 93/16</p> <p><b>line</b> [2] 77/12 104/19</p> <p><b>lines</b> [2] 2/12 33/24</p> <p><b>list</b> [1] 57/6</p> <p><b>listened</b> [2] 51/17 73/24</p> <p><b>listening</b> [1] 63/9</p> <p><b>lists</b> [1] 10/10</p> <p><b>litigation</b> [10] 69/10 69/15 71/22 73/5 73/14 73/23 74/19 75/1 78/24 79/10</p> <p><b>little</b> [6] 33/10 48/10 59/17 82/16 113/19 121/23</p> <p><b>lived</b> [1] 16/3</p> <p><b>liver</b> [67] 3/24 4/18 4/24 9/12 9/15 10/12 10/18 11/17 12/2 12/8 19/12 19/15 19/20 19/23 20/3 20/7 20/20</p>	<p>20/22 20/23 21/2 21/2 21/9 21/13 21/18 21/23 22/2 22/8 22/11 24/2 24/16 25/10 26/16 26/18 27/4 27/6 27/8 27/13 27/15 27/21 27/21 27/25 29/24 33/14 33/20 34/1 34/2 34/9 34/11 34/25 35/2 35/6 35/16 35/22 36/2 36/18 36/21 37/1 37/3 37/9 37/16 38/22 38/23 39/21 45/22 46/10 70/24 86/19</p> <p><b>Liverpool</b> [2] 54/5 57/10</p> <p><b>livers</b> [1] 27/7</p> <p><b>load</b> [1] 30/21</p> <p><b>local</b> [6] 46/25 77/24 91/6 100/5 100/9 116/18</p> <p><b>locally</b> [1] 97/8</p> <p><b>logical</b> [1] 113/12</p> <p><b>London</b> [2] 26/22 106/22</p> <p><b>long</b> [8] 15/18 16/20 17/12 22/22 29/9 33/9 59/21 59/22</p> <p><b>longer</b> [2] 65/4 99/15</p> <p><b>look</b> [35] 1/24 2/25 3/8 24/7 33/18 34/20 35/4 41/4 42/10 46/15 49/4 49/19 50/13 53/13 57/7 57/11 57/23 60/13 66/23 68/10 69/5 75/24 81/16 82/17 82/19 82/20 83/2 91/23 92/20 96/23 99/2 104/5 106/2 120/21 120/21</p> <p><b>looked</b> [9] 48/9 64/14 68/8 68/8 72/8 83/21 94/19 101/21 102/8</p> <p><b>looking</b> [13] 8/2 36/4 36/17 37/2 37/3 41/21 51/6 57/15 58/22 108/13 121/14 122/4 123/2</p> <p><b>Lord</b> [2] 89/4 89/24</p> <p><b>Lord Penrose</b> [2] 89/4 89/24</p> <p><b>loss</b> [1] 106/6</p> <p><b>lost</b> [1] 124/1</p> <p><b>lot</b> [5] 8/20 28/11 31/3 67/8 86/24</p> <p><b>lots</b> [2] 32/16 47/24</p> <p><b>loved</b> [1] 124/1</p> <p><b>lovely</b> [1] 28/6</p> <p><b>low</b> [1] 111/24</p> <p><b>LOWE</b> [27] 1/3 1/21</p>	<p>21/2 21/3 31/17 10/2 30/1 32/7 37/17 41/5 58/14 59/17 60/5 61/10 64/15 65/19 68/8 71/18 72/18 73/1 78/6 81/9 109/17 118/20 118/22 119/4 125/2</p> <p><b>Ludlam</b> [16] 33/5 45/6 50/24 51/1 55/12 57/20 57/25 60/12 64/15 65/13 65/23 66/22 75/6 93/21 112/4 114/11</p> <p><b>Ludlam's</b> [4] 51/18 95/17 111/18 111/21</p> <p><b>lymphocyte</b> [4] 43/3 45/2 50/10 113/3</p> <p><b>lymphocytes</b> [2] 45/24 111/25</p>
<p><b>K</b></p> <p><b>Keel</b> [2] 57/22 58/1</p> <p><b>keen</b> [7] 18/6 18/11 18/21 28/2 47/8 62/16 67/22</p> <p><b>keep</b> [10] 10/17 18/2</p>					
<p>(42) jaundice... - manufacturer</p>					

<b>M</b>	15/13 15/24 20/1 40/5 40/7 40/14 45/4 77/23 88/21 89/12 93/9 95/8 97/5 101/16 102/14 106/23 113/12 113/17 116/13 117/13 117/24	20/9 20/15 20/25 33/17 35/12 36/10 103/16 111/4 111/25 <b>merging [1]</b> 68/19 <b>message [1]</b> 117/20 <b>met [2]</b> 54/4 85/3 <b>metabolic [2]</b> 104/17 104/18 <b>method [1]</b> 36/11 <b>methodology [1]</b> 51/4 <b>methods [3]</b> 34/13 42/19 49/10 <b>Michael [1]</b> 55/14 <b>mid [2]</b> 13/11 96/7 <b>mid-1970s [1]</b> 96/7 <b>mid-1990s [1]</b> 13/11 <b>might [51]</b> 6/18 6/18 7/4 7/10 15/10 15/13 15/16 16/9 23/24 25/15 32/23 36/6 38/3 46/2 46/9 51/6 51/10 59/2 60/23 65/12 69/23 70/20 70/25 76/17 78/7 78/10 81/25 91/8 91/11 95/14 102/1 102/14 105/17 105/17 111/10 111/13 113/9 113/9 113/15 114/4 114/8 114/9 114/14 114/16 114/19 115/7 115/10 115/17 115/21 118/15 121/18 <b>mild [6]</b> 92/7 105/3 105/7 106/8 107/20 110/17 <b>milder [2]</b> 91/24 92/8 <b>miles [1]</b> 16/3 <b>million [1]</b> 123/15 <b>mind [5]</b> 6/10 41/20 48/18 52/9 65/11 <b>minimise [1]</b> 26/24 <b>minimising [2]</b> 106/6 106/6 <b>minister [1]</b> 67/21 <b>minister's [2]</b> 64/23 64/25 <b>ministers [1]</b> 122/23 <b>minor [2]</b> 106/8 107/10 <b>minority [1]</b> 112/17 <b>minute [2]</b> 2/2 7/14 <b>minutes [12]</b> 1/24 2/4 3/23 5/18 7/13 7/17 68/7 76/13 76/13 77/7 92/20 117/12 <b>miss [1]</b> 27/10 <b>mistake [1]</b> 83/9 <b>MLN [1]</b> 41/6 <b>model [4]</b> 83/19 83/24 84/2 84/2 <b>moderate [2]</b> 92/9	106/9 <b>moment [7]</b> 2/18 14/21 74/3 111/2 113/6 116/16 120/15 <b>monitor [3]</b> 14/3 22/10 36/24 <b>monitored [1]</b> 107/1 <b>monitoring [8]</b> 4/20 5/7 20/2 24/4 30/5 31/3 31/12 36/2 <b>monthly [2]</b> 35/18 43/22 <b>months [7]</b> 15/10 18/1 28/23 53/21 57/12 117/22 121/10 <b>months' [1]</b> 58/15 <b>mooted [2]</b> 52/11 62/15 <b>more [22]</b> 2/23 2/23 7/25 8/9 23/1 23/2 24/23 27/14 35/2 38/9 51/13 69/23 83/24 106/17 114/8 115/8 115/9 119/18 122/6 123/15 123/21 124/3 <b>morning [1]</b> 111/8 <b>Morris [6]</b> 12/4 29/4 29/4 30/6 30/22 31/18 <b>mortem [5]</b> 27/8 32/8 32/15 32/20 35/7 <b>mortems [3]</b> 32/8 32/11 33/1 <b>Mortimer [1]</b> 2/16 <b>most [8]</b> 4/6 5/21 19/19 29/15 32/14 42/12 98/14 124/4 <b>mostly [1]</b> 74/4 <b>move [2]</b> 41/25 59/14 <b>moved [4]</b> 30/23 31/24 85/1 85/3 <b>moving [2]</b> 81/9 121/7 <b>Mr [1]</b> 118/19 <b>Mr Bowie [1]</b> 118/19 <b>Mrs [3]</b> 65/17 66/8 66/12 <b>Mrs Towers [1]</b> 65/17 <b>Mrs Towers' [2]</b> 66/8 66/12 <b>Ms [8]</b> 1/6 1/20 67/17 78/22 118/18 121/9 122/7 125/3 <b>Ms Richards [6]</b> 1/6 67/17 78/22 118/18 121/9 122/7 <b>much [17]</b> 1/16 19/24 26/17 26/19 44/20 44/22 51/13 52/22 61/5 62/13 73/19 84/6 93/5 118/17 120/18 120/20 122/4 <b>multiplicative [1]</b> 110/5	<b>multiplying [1]</b> 109/23 <b>must [6]</b> 28/21 60/25 79/17 96/11 108/15 113/12 <b>my [56]</b> 5/17 6/7 6/24 9/8 10/8 11/2 11/25 12/19 20/9 21/14 22/24 24/22 28/3 28/18 41/23 43/23 43/24 44/1 44/11 48/22 50/6 54/25 56/13 57/16 61/13 61/24 62/17 62/25 63/8 63/17 66/4 67/17 67/21 68/16 73/17 76/20 82/22 84/5 85/3 85/21 92/13 95/2 96/15 96/25 98/22 99/4 99/18 101/19 108/15 108/16 109/12 109/15 109/22 116/16 117/12 120/25 <b>myself [7]</b> 1/6 4/8 58/1 75/6 85/15 89/9 92/17 <b>mystified [1]</b> 79/23	80/1 116/9 <b>newspapers [3]</b> 103/5 103/17 117/16 <b>next [18]</b> 1/21 10/24 12/16 15/9 15/20 21/11 25/12 33/10 34/6 43/12 54/9 56/18 62/8 68/5 71/9 77/11 95/21 106/3 <b>NHBT0000094 [2]</b> 33/12 41/3 <b>NHS [4]</b> 5/2 28/20 75/21 81/7 <b>nine [1]</b> 58/15 <b>no [50]</b> 5/14 6/24 8/10 9/24 10/20 14/6 16/12 23/17 24/2 25/7 25/7 26/20 27/2 27/24 30/10 37/21 40/3 40/19 42/13 49/2 50/4 51/12 53/6 53/20 57/9 63/19 64/2 64/4 69/25 78/20 80/13 80/21 85/20 89/23 90/3 91/18 95/6 100/22 103/4 103/16 105/24 105/25 110/15 110/24 112/19 115/23 116/6 116/18 118/24 123/13 <b>no-one [1]</b> 123/13 <b>non [27]</b> 19/7 19/7 19/13 19/13 20/13 20/13 21/12 21/12 22/19 22/19 24/13 24/14 25/10 25/10 25/17 25/17 25/18 25/18 25/19 26/12 26/12 77/1 77/1 86/14 86/14 91/13 116/25 <b>non-A [13]</b> 19/7 19/13 20/13 21/12 22/19 24/13 25/10 25/17 25/18 25/19 26/12 77/1 86/14 <b>non-B [12]</b> 19/7 19/13 20/13 21/12 22/19 24/14 25/10 25/17 25/18 26/12 77/1 86/14 <b>non-heat-treated [1]</b> 116/25 <b>non-inhibitor [1]</b> 91/13 <b>none [1]</b> 22/7 <b>nonetheless [1]</b> 108/20 <b>nonsexual [1]</b> 53/2 <b>normal [2]</b> 13/2 17/10 <b>Northern [5]</b> 3/6 53/22 54/4 54/18 120/6 <b>not [91]</b> 1/5 3/15 3/25 6/20 7/2 7/16 9/8 10/3
				<b>N</b>	
				<b>name [3]</b> 44/11 82/10 100/20 <b>name's [1]</b> 81/3 <b>named [1]</b> 33/15 <b>names [1]</b> 82/8 <b>Nathanson [1]</b> 8/8 <b>national [2]</b> 55/14 58/6 <b>nations [1]</b> 56/22 <b>nature [2]</b> 86/6 87/3 <b>near [1]</b> 16/19 <b>nearly [1]</b> 104/2 <b>necessary [3]</b> 3/15 65/9 66/14 <b>need [13]</b> 5/12 6/13 7/18 8/12 8/17 9/1 24/5 40/3 72/9 72/23 82/5 90/11 91/8 <b>needed [8]</b> 2/21 5/10 11/10 20/1 23/16 31/8 50/13 50/22 <b>needle [1]</b> 27/10 <b>negative [5]</b> 19/22 50/12 112/1 116/20 117/22 <b>Neilson [2]</b> 29/5 30/23 <b>nervous [1]</b> 70/17 <b>never [8]</b> 27/11 37/4 38/11 40/14 59/3 108/19 112/8 112/20 <b>new [8]</b> 5/5 18/8 18/17 28/15 72/2 72/2 90/17 120/20 <b>news [4]</b> 70/11 75/17	

<p><b>N</b></p> <p>not... [83] 10/4 11/13 13/20 15/2 15/10 15/17 16/5 17/8 17/22 17/25 20/23 23/8 26/17 28/10 28/18 31/25 33/18 35/6 36/13 36/24 37/2 37/21 38/7 38/25 40/16 40/25 44/6 48/21 48/22 50/1 51/21 55/24 64/8 66/25 69/19 71/24 72/2 72/4 74/19 76/2 76/12 76/14 76/20 76/23 77/15 77/20 79/9 79/21 80/4 82/24 82/25 83/12 83/25 86/21 87/5 87/18 87/21 89/17 89/24 90/7 92/15 95/15 98/22 98/25 98/25 103/25 104/10 105/10 105/13 106/25 107/24 112/7 114/13 114/15 115/6 116/14 117/12 117/14 118/13 118/15 120/25 121/8 121/11 note [2] 59/14 64/17 noted [1] 63/10 notes [2] 67/7 80/7 nothing [5] 26/23 56/24 57/12 95/6 118/24 notifiable [2] 97/6 99/22 notification [5] 53/18 54/14 58/17 58/18 100/4 notified [2] 16/22 55/3 November [3] 54/10 58/10 58/13 now [44] 2/23 4/4 5/5 5/6 7/21 10/13 18/1 20/12 21/6 22/14 22/23 28/10 32/6 44/18 46/15 48/12 50/2 50/11 53/21 54/12 55/13 56/13 57/3 57/11 58/25 59/16 60/6 62/7 64/12 68/11 69/5 82/10 84/12 86/21 87/12 87/18 89/16 95/13 109/1 112/24 113/18 117/2 120/6 120/22 nuclear [1] 39/17 number [16] 13/15 13/20 21/11 25/1 25/11 28/4 28/16 48/17 60/6 87/13</p>	<p>90/22 95/19 100/14 102/10 102/10 115/1 numbers [4] 53/5 53/6 56/2 101/17 nurse [3] 29/8 30/15 31/5 nurses [2] 31/1 109/5</p> <p><b>O</b></p> <p>o'clock [3] 59/21 59/22 59/23 objective [1] 89/19 obligation [1] 97/6 obscures [1] 89/2 observation [1] 78/14 observations [1] 41/24 observer [1] 74/12 obtain [2] 52/7 78/12 obtained [2] 34/22 40/13 obtaining [3] 41/18 50/8 51/9 obvious [1] 72/12 obviously [10] 11/16 15/4 26/3 61/25 77/25 98/13 102/11 103/5 103/17 122/8 occasionally [2] 63/15 63/25 occur [2] 6/16 87/21 occurred [1] 37/4 October [6] 42/6 53/15 54/5 60/12 94/20 111/6 October 1983 [1] 94/20 October 1996 [1] 60/12 October/September [1] 111/6 odd [1] 1/17 off [9] 31/11 37/22 62/8 85/1 101/1 113/8 114/2 115/3 116/6 offer [5] 58/3 62/14 63/3 63/23 74/17 offered [3] 48/15 62/10 83/8 office [8] 65/18 71/8 72/20 74/9 75/20 81/3 88/7 88/10 officer [7] 53/16 54/16 56/7 57/21 99/23 100/1 100/8 Officers [3] 56/19 56/22 57/6 often [8] 44/2 62/8 80/24 104/9 107/3 110/8 121/6 121/7 oh [15] 5/24 11/2 26/9 32/18 44/20 46/7 47/2</p>	<p>52/25 96/21 98/10 103/18 103/20 103/23 116/16 117/12 okay [5] 10/23 20/8 65/25 82/18 117/21 once [5] 1/4 4/1 7/11 14/25 58/21 one [40] 2/25 6/5 7/15 15/3 20/25 23/25 24/7 28/16 30/25 33/2 33/15 36/2 36/24 37/12 39/19 40/15 41/14 43/19 44/4 49/3 50/13 61/2 62/3 63/13 67/18 67/19 69/11 73/7 79/3 79/4 81/25 87/22 93/14 104/18 112/21 114/13 115/11 121/10 123/12 123/13 ones [3] 75/4 101/11 124/1 ongoing [1] 79/1 only [31] 4/11 7/2 9/8 13/17 17/2 20/23 23/8 24/24 28/10 29/14 31/25 36/13 36/25 39/9 39/13 39/22 40/19 47/9 51/3 63/13 72/2 73/16 82/19 88/18 88/19 92/3 92/14 95/12 111/23 112/5 112/9 onto [1] 87/10 onwards [2] 96/20 100/12 open [2] 57/13 78/16 openly [1] 78/4 operate [1] 79/17 opinion [2] 79/16 79/18 opposed [1] 24/18 options [1] 29/12 or [148] orally [2] 106/18 121/6 order [2] 85/22 92/14 ordered [1] 103/24 ordinate [3] 73/13 74/21 75/8 ordinated [4] 67/2 81/4 84/23 93/23 organisation [3] 3/12 6/5 81/7 organisations [1] 6/8 organised [1] 31/14 orientated [1] 40/7 other [34] 1/15 1/15 2/8 2/25 3/14 6/8 14/6 19/7 19/9 19/22 21/1 22/4 22/18 28/8 30/24 32/22 32/24 36/21 40/22 45/5 49/9 57/5</p>	<p>69/22 72/24 84/18 89/9 97/25 98/18 98/24 101/1 102/25 106/7 106/21 112/16 others [4] 49/9 79/19 81/20 87/23 otherwise [1] 113/12 our [52] 4/16 5/25 13/24 19/10 21/1 21/7 21/16 21/16 22/5 24/23 29/7 30/10 30/15 30/25 31/5 32/3 32/19 35/22 36/17 43/1 45/3 52/24 53/19 56/8 56/17 57/7 57/13 58/12 59/7 60/20 64/4 66/11 67/7 68/2 76/23 77/5 78/2 78/16 78/16 80/5 80/10 83/5 84/20 84/24 93/4 98/2 108/20 109/4 109/5 110/12 118/3 119/4 ourselves [2] 30/16 108/19 out [32] 8/25 9/19 12/1 15/25 17/20 18/16 24/23 30/23 34/8 34/14 35/6 44/2 47/6 50/23 51/1 54/15 58/18 63/17 69/22 71/4 72/1 81/6 82/18 83/12 85/20 90/22 97/19 99/2 109/20 111/6 112/12 113/11 out-patient [2] 17/20 30/23 outbreak [2] 55/19 56/21 outcome [2] 48/2 61/11 outline [3] 8/6 64/22 84/5 outlined [3] 54/24 55/9 122/8 outside [1] 102/18 over [32] 10/18 11/17 17/14 20/19 21/11 21/25 22/1 22/7 23/18 25/11 29/20 31/1 34/6 36/19 42/14 42/23 49/14 61/4 63/19 64/3 71/3 72/9 80/5 82/23 85/6 85/25 86/20 88/4 96/15 96/16 121/9 123/17 over-defensive [1] 80/5 overall [1] 121/16 oversight [1] 63/16 Overspeaking [1] 100/7 own [10] 37/19 38/2</p>	<p>39/1 43/24 48/24 48/24 67/7 77/19 105/23 105/24 Oxford [2] 99/9 106/22</p> <p><b>P</b></p> <p>page [32] 2/3 2/8 2/10 3/7 24/9 33/23 34/6 34/7 41/3 41/4 42/23 42/24 43/12 43/13 46/13 46/14 49/5 49/11 49/14 49/20 65/6 68/6 69/9 71/3 72/10 75/23 75/24 77/11 81/16 104/4 106/1 106/3 page 14 [1] 106/1 page 2 [3] 42/23 42/24 46/13 page 48 [1] 104/4 page 5 [1] 41/3 page 69 [1] 24/9 pages [1] 123/15 pandemic [1] 121/21 panel [2] 55/25 56/3 paper [23] 21/18 21/19 35/11 36/1 40/19 40/21 40/24 40/24 40/25 41/2 41/12 41/22 43/16 43/21 44/11 81/10 81/13 81/17 81/20 91/4 111/17 111/25 116/3 papers [2] 20/24 107/2 paragraph [18] 2/10 3/8 3/8 24/7 24/9 42/24 46/16 60/13 64/22 65/7 69/6 71/10 71/17 72/10 75/24 104/5 104/5 106/1 paragraph 1 [2] 64/22 69/6 paragraph 16.2 [1] 104/5 paragraph 30.12 [1] 24/9 paragraph 6 [1] 3/8 paragraph 9 [1] 65/7 parallel [1] 111/18 parent [1] 41/10 parents [2] 41/17 88/16 part [11] 34/17 35/17 39/3 43/24 52/18 53/3 69/14 73/7 75/2 91/1 97/12 Participants [2] 60/9 106/12 participate [2] 51/24</p>	<p>62/10 participation [2] 18/15 51/9 particular [11] 26/3 26/20 36/6 41/22 62/5 64/6 65/2 76/10 84/3 84/20 88/14 particularly [17] 7/13 16/2 16/18 19/17 26/12 27/18 31/3 36/8 52/9 52/21 73/6 76/14 88/11 92/5 116/13 118/5 124/3 partner [1] 29/9 partners [5] 52/16 52/17 52/20 53/7 117/4 party [3] 55/10 72/8 93/20 passing [1] 123/22 past [8] 19/8 19/20 34/24 85/7 120/25 121/10 121/16 123/23 pathogenesis [1] 34/18 pathogenic [1] 14/7 pathological [1] 84/1 pathologist [2] 33/3 33/8 patience [1] 121/20 patient [71] 7/19 7/20 10/20 11/13 12/21 12/21 12/25 13/3 13/24 14/23 15/6 15/8 15/25 16/1 16/4 16/5 16/6 16/11 16/11 16/13 16/17 17/20 17/20 17/24 19/1 19/3 21/12 24/13 25/5 25/9 25/13 25/20 26/15 27/12 28/4 30/23 31/19 32/20 32/20 39/24 48/9 68/10 78/1 83/6 87/8 91/16 93/15 95/22 96/4 96/10 97/24 98/7 98/10 98/23 100/22 101/4 101/19 102/3 102/4 102/5 102/10 102/10 105/12 105/15 105/21 106/25 107/3 107/6 107/14 110/17 118/14 patient's [4] 2/15 12/22 81/17 100/24 patient-identifying [1] 102/4 patients [230] patients' [9] 14/2 27/24 36/3 39/3 51/9 78/12 78/19 87/4 99/8 pattern [1] 27/25 pausing [1] 54/12</p>
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<p><b>P</b></p> <p><b>pegylated [1]</b> 26/4</p> <p><b>Penrose [17]</b> 14/19 21/14 22/21 29/24 47/20 48/8 48/23 68/3 87/15 88/9 88/14 88/21 89/4 89/6 89/16 89/24 103/21</p> <p><b>people [13]</b> 1/17 3/24 27/7 28/19 37/10 62/20 78/23 84/15 96/13 98/18 117/16 121/13 124/5</p> <p><b>per [6]</b> 11/22 21/21 24/1 104/24 104/25 105/3</p> <p><b>percentage [5]</b> 11/14 19/9 19/11 21/7 21/11</p> <p><b>perception [1]</b> 81/18</p> <p><b>performed [5]</b> 13/1 18/25 41/17 44/5 50/7</p> <p><b>perhaps [3]</b> 42/2 119/7 119/17</p> <p><b>period [16]</b> 9/20 14/5 17/23 37/23 66/1 67/6 67/18 85/16 88/4 96/16 99/24 102/12 102/21 102/23 120/20 123/12</p> <p><b>permission [4]</b> 2/20 41/8 41/10 50/8</p> <p><b>permitted [1]</b> 67/24</p> <p><b>persistent [1]</b> 19/11</p> <p><b>person [4]</b> 69/19 121/22 122/1 122/6</p> <p><b>person's [1]</b> 87/22</p> <p><b>personal [1]</b> 119/8</p> <p><b>personally [1]</b> 115/6</p> <p><b>perspective [3]</b> 74/17 74/21 121/3</p> <p><b>Peter [1]</b> 72/20</p> <p><b>Pettigrew [2]</b> 41/14 41/15</p> <p><b>PFC [1]</b> 97/13</p> <p><b>pharmaceutical [4]</b> 61/8 64/8 96/1 123/4</p> <p><b>pharmacist [1]</b> 31/7</p> <p><b>Pharmacy [1]</b> 61/9</p> <p><b>phase [1]</b> 110/11</p> <p><b>phenomenon [3]</b> 77/22 104/16 112/2</p> <p><b>phrase [1]</b> 22/20</p> <p><b>physician [1]</b> 91/10</p> <p><b>physicians [9]</b> 83/22 84/7 84/8 84/12 84/16 85/21 92/15 92/16 93/1</p> <p><b>pick [1]</b> 2/11</p> <p><b>picked [1]</b> 119/11</p> <p><b>picking [1]</b> 90/13</p> <p><b>picture [1]</b> 121/16</p>	<p><b>piece [1]</b> 41/25</p> <p><b>place [3]</b> 3/1 17/14 73/3</p> <p><b>places [1]</b> 29/15</p> <p><b>plainly [1]</b> 79/9</p> <p><b>plaintiffs [6]</b> 69/13 69/20 70/6 70/18 71/2 71/5</p> <p><b>plan [1]</b> 122/21</p> <p><b>plasma [3]</b> 97/10 97/17 106/15</p> <p><b>please [27]</b> 2/9 3/3 3/7 33/13 33/23 42/4 42/23 46/12 49/3 49/5 49/20 53/14 57/7 60/10 60/11 64/13 64/16 65/7 67/12 68/5 79/4 79/4 81/15 82/4 99/20 104/4 113/18</p> <p><b>pm [4]</b> 1/2 59/25 60/3 124/10</p> <p><b>point [16]</b> 14/3 27/2 64/4 65/25 66/12 69/11 75/2 81/6 85/20 92/13 105/2 105/14 112/25 113/11 114/7 115/8</p> <p><b>pointed [3]</b> 69/22 71/4 72/1</p> <p><b>policies [4]</b> 20/11 48/5 93/1 93/12</p> <p><b>policy [6]</b> 48/21 78/16 91/19 93/18 93/23 94/10</p> <p><b>politely [1]</b> 63/3</p> <p><b>pool [1]</b> 95/16</p> <p><b>poorly [1]</b> 57/3</p> <p><b>population [3]</b> 34/1 35/21 45/3</p> <p><b>porcine [1]</b> 93/9</p> <p><b>posing [1]</b> 76/14</p> <p><b>position [10]</b> 57/4 62/22 64/5 69/16 69/23 70/21 96/19 101/7 108/18 120/24</p> <p><b>positive [22]</b> 11/9 11/22 11/23 15/25 16/15 19/1 19/17 19/25 29/3 30/14 51/20 95/1 95/20 114/5 114/25 115/5 115/18 116/20 117/23 118/6 118/14 118/15</p> <p><b>positivity [2]</b> 52/15 115/1</p> <p><b>possibilities [1]</b> 111/19</p> <p><b>possibility [6]</b> 20/5 46/19 60/25 64/10 94/21 111/11</p> <p><b>possible [13]</b> 2/19 23/12 29/19 31/9</p>	<p>34/10 45/13 55/2 69/1 98/1 100/25 117/9 120/10 122/6</p> <p><b>possibly [8]</b> 7/14 43/9 47/16 59/20 68/2 79/20 119/18 120/5</p> <p><b>post [11]</b> 27/8 28/16 32/8 32/8 32/11 32/15 32/20 33/1 35/7 52/10 105/9</p> <p><b>post-mortem [5]</b> 27/8 32/8 32/15 32/20 35/7</p> <p><b>post-mortems [3]</b> 32/8 32/11 33/1</p> <p><b>potential [3]</b> 54/2 63/2 123/16</p> <p><b>potentially [3]</b> 60/23 62/19 107/17</p> <p><b>practice [14]</b> 13/2 17/11 18/4 38/4 40/10 70/18 76/24 87/7 88/25 96/5 96/17 102/22 107/4 118/16</p> <p><b>practices [1]</b> 71/14</p> <p><b>practitioner [10]</b> 13/2 13/5 15/14 16/16 16/23 17/1 17/8 17/10 17/25 97/4</p> <p><b>practitioners [1]</b> 28/12</p> <p><b>pre [2]</b> 8/18 105/9</p> <p><b>pre-counselling [1]</b> 8/18</p> <p><b>precautions [1]</b> 117/4</p> <p><b>predecessor [2]</b> 68/17 85/21</p> <p><b>predecessors [2]</b> 66/11 108/16</p> <p><b>predict [2]</b> 22/9 23/25</p> <p><b>predictor [1]</b> 110/13</p> <p><b>preferred [2]</b> 89/8 122/2</p> <p><b>Prentice [7]</b> 37/11 84/16 85/1 87/7 92/17 103/19 108/16</p> <p><b>preparation [3]</b> 43/24 112/7 121/5</p> <p><b>preparations [1]</b> 112/19</p> <p><b>prepare [2]</b> 55/21 114/6</p> <p><b>prepared [3]</b> 54/1 54/7 97/13</p> <p><b>preparing [1]</b> 118/8</p> <p><b>prescribe [1]</b> 92/14</p> <p><b>prescribed [3]</b> 29/14 29/16 108/19</p> <p><b>prescribing [1]</b> 30/4</p> <p><b>present [12]</b> 2/6 2/11 2/24 34/24 37/18 45/3 45/19 69/21 71/2 86/21 120/24 123/24</p>	<p><b>presentation [5]</b> 91/5 120/1 120/5 120/8 122/19</p> <p><b>presented [1]</b> 44/8</p> <p><b>presenting [2]</b> 43/21 44/24</p> <p><b>press [2]</b> 55/21 58/11</p> <p><b>Preston [4]</b> 9/11 9/17 27/22 70/23</p> <p><b>presumably [2]</b> 91/14 110/1</p> <p><b>presume [1]</b> 41/18</p> <p><b>pretty [3]</b> 45/7 68/21 95/9</p> <p><b>prevalence [2]</b> 33/25 34/18</p> <p><b>prevent [2]</b> 36/7 116/25</p> <p><b>previous [10]</b> 21/3 22/18 34/22 55/4 55/19 62/11 75/23 75/24 88/13 88/20</p> <p><b>previously [6]</b> 13/21 13/24 19/6 30/13 68/9 120/4</p> <p><b>Primarily [1]</b> 79/2</p> <p><b>principle [6]</b> 46/5 47/12 47/14 47/18 64/7 87/2</p> <p><b>priority [1]</b> 28/17</p> <p><b>proactively [1]</b> 99/1</p> <p><b>probably [9]</b> 3/25 19/6 26/17 98/11 110/9 111/23 112/4 112/10 112/14</p> <p><b>problem [14]</b> 28/8 28/9 36/23 46/9 47/21 64/4 70/23 76/25 84/22 86/13 95/15 97/20 114/21 117/15</p> <p><b>problems [4]</b> 24/17 35/21 92/6 116/12</p> <p><b>procedure [5]</b> 8/6 33/3 33/6 98/21 107/2</p> <p><b>proceed [2]</b> 54/6 58/2</p> <p><b>process [13]</b> 2/1 4/15 7/3 7/25 17/12 17/17 51/8 54/14 67/1 78/2 89/7 95/24 100/3</p> <p><b>prodromal [3]</b> 43/9 46/20 47/16</p> <p><b>produced [1]</b> 99/13</p> <p><b>product [18]</b> 14/4 14/6 14/10 67/5 67/9 91/12 95/4 97/2 103/25 104/21 105/19 106/7 106/14 106/16 107/17 107/18 107/25 108/5</p> <p><b>production [2]</b> 9/18 62/21</p> <p><b>products [41]</b> 13/21</p>	<p>18/9 18/9 18/18 18/19 18/23 25/14 43/2 56/3 60/21 61/2 61/4 62/16 62/23 63/19 64/3 64/20 65/1 85/22 90/15 90/25 90/25 91/2 91/6 91/9 92/15 93/3 93/5 93/24 93/25 96/11 98/3 99/8 101/13 103/19 103/24 104/10 105/13 107/12 108/2 108/19</p> <p><b>professor [83]</b> 1/3 1/12 1/18 1/21 2/20 3/2 3/17 7/16 10/2 30/1 32/7 33/5 35/11 37/6 37/17 38/24 41/5 41/23 43/18 45/6 48/1 50/3 50/24 51/1 51/18 51/22 52/8 53/11 55/12 57/20 57/25 58/14 59/17 60/5 61/10 61/21 62/9 62/25 63/9 63/23 63/25 64/15 64/15 65/13 65/19 65/23 66/2 66/22 68/8 70/3 70/21 70/23 73/1 73/12 78/6 78/15 79/11 79/15 81/9 81/11 81/19 81/21 81/24 82/6 84/6 87/19 88/24 93/21 95/17 96/23 101/22 104/2 106/11 108/8 109/15 109/17 111/18 111/21 114/11 118/20 118/22 119/4 125/2</p> <p><b>Professor Bloom [2]</b> 70/21 79/11</p> <p><b>Professor Bloom's [1]</b> 7/16</p> <p><b>Professor Douglas [1]</b> 84/6</p> <p><b>Professor Forbes [3]</b> 51/22 66/2 73/12</p> <p><b>Professor Franklin [4]</b> 62/9 63/9 63/23 63/25</p> <p><b>Professor Lowe [21]</b> 1/21 3/17 10/2 30/1 32/7 37/17 41/5 58/14 59/17 60/5 61/10 64/15 65/19 68/8 73/1 78/6 81/9 109/17 118/20 118/22 119/4</p> <p><b>Professor Ludlam [13]</b> 33/5 45/6 50/24 51/1 55/12 57/20 57/25 64/15 65/13 65/23 66/22 93/21 114/11</p> <p><b>Professor Ludlam's [4]</b> 51/18 95/17</p>	<p>111/18 111/21</p> <p><b>Professor Markova [2]</b> 81/11 81/19</p> <p><b>Professor McKillop [1]</b> 62/25</p> <p><b>Professor Preston [1]</b> 70/23</p> <p><b>proficient [1]</b> 44/1</p> <p><b>prognosis [2]</b> 9/2 20/5</p> <p><b>programme [3]</b> 39/4 52/23 103/11</p> <p><b>progress [3]</b> 37/24 38/14 39/5</p> <p><b>progressed [1]</b> 29/21</p> <p><b>progressing [2]</b> 21/12 23/1</p> <p><b>progression [6]</b> 9/14 10/18 27/1 36/7 39/21 54/25</p> <p><b>progressive [2]</b> 11/17 20/7</p> <p><b>prolonged [1]</b> 69/8</p> <p><b>promised [1]</b> 121/1</p> <p><b>proper [1]</b> 10/4</p> <p><b>proposal [1]</b> 54/8</p> <p><b>proposals [1]</b> 54/17</p> <p><b>proposing [1]</b> 76/9</p> <p><b>prospective [1]</b> 46/6</p> <p><b>prospectively [1]</b> 34/3</p> <p><b>protein [5]</b> 97/14 104/22 110/2 110/12 110/19</p> <p><b>prothrombin [1]</b> 93/10</p> <p><b>prove [1]</b> 71/1</p> <p><b>provide [4]</b> 58/17 76/2 109/7 116/15</p> <p><b>provided [11]</b> 29/22 48/4 56/12 63/16 64/1 84/23 85/18 86/1 87/14 88/13 96/2</p> <p><b>provider's [1]</b> 61/9</p> <p><b>providers [3]</b> 57/14 62/16 123/17</p> <p><b>providing [2]</b> 74/18 109/8</p> <p><b>provision [1]</b> 87/15</p> <p><b>PRSE000999 [1]</b> 3/3</p> <p><b>PRSE0001121 [2]</b> 42/4 46/13</p> <p><b>PRSE0003671 [1]</b> 49/3</p> <p><b>psychological [3]</b> 31/16 31/19 31/22</p> <p><b>psychologists [2]</b> 32/1 109/6</p> <p><b>psychosocial [1]</b> 81/11</p> <p><b>public [6]</b> 57/24 96/13 97/4 100/5 116/23 117/5</p> <p><b>publication [3]</b> 33/13</p>
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<p><b>P</b></p> <p><b>publication...</b> [2] 94/21 102/21</p> <p><b>publicity</b> [1] 103/6</p> <p><b>publicly</b> [1] 56/17</p> <p><b>published</b> [7] 9/22 13/25 36/1 42/3 42/5 78/4 120/16</p> <p><b>purchase</b> [1] 93/24</p> <p><b>pure</b> [1] 113/1</p> <p><b>purity</b> [4] 18/9 18/18 18/20 101/13</p> <p><b>purpose</b> [5] 35/10 68/11 68/14 68/24 68/25</p> <p><b>purposes</b> [3] 2/11 74/18 101/25</p> <p><b>pursuing</b> [1] 8/10</p> <p><b>put</b> [15] 12/24 16/14 17/7 38/20 44/11 51/21 70/12 70/20 71/13 82/5 86/4 96/22 101/9 105/5 116/4</p> <p><b>putting</b> [2] 21/20 82/10</p> <p><b>puzzled</b> [4] 74/11 78/19 80/12 113/19</p> <p><b>puzzles</b> [1] 77/17</p> <p><b>puzzling</b> [2] 113/7 114/3</p>	<p>117/8</p> <p><b>quite</b> [25] 2/18 16/8 19/10 21/5 21/10 23/20 27/5 28/3 31/21 32/2 44/1 44/2 63/5 66/11 77/7 77/20 79/9 79/23 80/23 91/25 94/13 108/5 109/8 112/11 113/21</p> <p><b>quote</b> [1] 48/7</p> <p><b>quoted</b> [1] 3/13</p>	<p>79/24 80/2 82/24 83/12 87/19 92/3 94/10 111/1 113/22 115/2 115/5 119/11</p> <p><b>reason</b> [9] 58/15 59/10 60/19 69/25 81/5 89/7 89/18 97/16 112/19</p> <p><b>reasonable</b> [1] 10/9</p> <p><b>reasonably</b> [2] 105/12 121/1</p> <p><b>reasons</b> [3] 2/8 36/24 84/4</p>	<p><b>referral</b> [1] 32/5</p> <p><b>referred</b> [11] 9/5 11/24 12/1 15/23 26/16 28/12 69/19 81/10 87/12 94/2 103/7</p> <p><b>referring</b> [6] 27/20 28/4 81/14 81/21 94/4 103/3</p> <p><b>refers</b> [2] 35/1 49/9</p> <p><b>refine</b> [1] 21/25</p> <p><b>reflect</b> [1] 122/14</p> <p><b>reflection</b> [1] 65/19</p> <p><b>regard</b> [2] 74/2 120/11</p> <p><b>regarded</b> [1] 78/23</p> <p><b>regarding</b> [4] 68/1 71/19 72/20 75/11</p> <p><b>regardless</b> [2] 27/20 66/18</p> <p><b>regards</b> [3] 27/10 66/8 74/7</p> <p><b>region</b> [1] 70/7</p> <p><b>regional</b> [7] 3/10 13/9 13/11 34/14 60/18 61/19 97/11</p> <p><b>registrar</b> [2] 36/14 36/15</p> <p><b>registrars</b> [1] 37/12</p> <p><b>regret</b> [1] 72/14</p> <p><b>regular</b> [9] 31/4 37/23 38/13 68/18 77/23 78/4 78/5 88/1 99/13 15/9 26/11 46/25 80/10 86/23 87/8 91/23 100/15</p> <p><b>Rejman</b> [3] 70/2 70/4 78/11</p> <p><b>related</b> [5] 34/9 49/17 49/23 49/25 50/20</p> <p><b>relating</b> [4] 64/9 73/12 100/21 102/17</p> <p><b>relation</b> [9] 6/20 13/16 38/8 69/2 87/15 91/13 101/24 120/1 120/12</p> <p><b>relationship</b> [2] 27/24 36/4</p> <p><b>relationships</b> [1] 87/25</p> <p><b>release</b> [3] 56/9 56/16 58/6</p> <p><b>releases</b> [1] 55/21</p> <p><b>relevance</b> [2] 34/10 123/16</p> <p><b>relevant</b> [7] 39/21 53/23 54/23 56/3 59/8 66/9 101/8</p> <p><b>reliable</b> [7] 2/17 2/18 116/15 116/22 117/9 117/15 117/19</p> <p><b>religiously</b> [1] 81/6</p> <p><b>rely</b> [2] 89/25 105/21</p>	<p><b>remaining</b> [1] 92/2</p> <p><b>remember</b> [10] 32/18 33/1 43/21 44/24 46/23 91/4 96/7 103/19 115/20 119/14</p> <p><b>remembering</b> [1] 120/25</p> <p><b>remind</b> [1] 78/24</p> <p><b>remote</b> [1] 16/4</p> <p><b>render</b> [1] 43/8</p> <p><b>repeat</b> [1] 21/15</p> <p><b>repeated</b> [2] 9/15 89/15</p> <p><b>repeatedly</b> [2] 19/21 84/25</p> <p><b>replace</b> [1] 85/13</p> <p><b>replaced</b> [1] 73/15</p> <p><b>replacing</b> [1] 18/18</p> <p><b>reply</b> [5] 53/20 69/24 72/18 73/9 79/14</p> <p><b>report</b> [10] 52/25 67/24 89/25 96/18 97/7 97/10 97/15 100/1 100/2 120/24</p> <p><b>reported</b> [10] 46/1 55/12 86/23 94/23 96/1 97/3 97/8 98/25 111/8 111/9</p> <p><b>reporting</b> [4] 47/1 95/21 95/24 96/15</p> <p><b>reports</b> [9] 44/18 55/15 71/16 72/8 74/18 78/5 99/13 99/21 100/11</p> <p><b>representative</b> [9] 3/12 6/2 70/2 70/18 73/2 74/4 74/13 76/8 79/8</p> <p><b>representatives</b> [8] 1/16 60/9 60/18 72/7 73/8 74/7 75/5 78/1</p> <p><b>represented</b> [3] 68/22 68/23 81/2</p> <p><b>representing</b> [1] 8/13</p> <p><b>represents</b> [2] 75/21 118/20</p> <p><b>request</b> [2] 70/25 71/20</p> <p><b>requesting</b> [1] 66/15</p> <p><b>required</b> [4] 31/4 64/18 106/16 108/6</p> <p><b>requirement</b> [1] 100/9</p> <p><b>requirements</b> [1] 6/18</p> <p><b>requires</b> [1] 8/20</p> <p><b>requiring</b> [1] 91/15</p> <p><b>research</b> [25] 33/10 35/10 35/18 37/25 38/15 39/3 40/7 40/9 40/10 41/25 42/1 43/22 44/24 51/16 51/19 61/24 63/5 86/23 94/19 100/20</p>	<p>100/20 101/7 101/21 102/2 118/14</p> <p><b>research-orientated</b> [1] 40/7</p> <p><b>resign</b> [1] 72/13</p> <p><b>respect</b> [6] 1/23 76/14 79/1 99/23 100/13 107/14</p> <p><b>respects</b> [1] 110/3</p> <p><b>respond</b> [1] 104/20</p> <p><b>response</b> [32] 43/7 54/17 55/23 57/25 58/22 65/10 65/21 72/17 74/22 87/14 87/22 88/24 90/3 90/6 95/17 104/6 104/12 104/13 104/15 104/17 104/18 105/5 105/16 105/20 105/23 105/24 109/22 110/1 110/5 110/20 110/22 118/10</p> <p><b>responses</b> [1] 90/5</p> <p><b>responsibility</b> [2] 91/1 122/24</p> <p><b>responsible</b> [1] 112/12</p> <p><b>rest</b> [2] 15/15 72/23</p> <p><b>restrictions</b> [1] 122/3</p> <p><b>result</b> [16] 13/5 15/14 15/22 15/23 16/10 16/12 16/15 66/9 67/14 86/2 108/10 113/9 113/10 113/11 114/4 116/19</p> <p><b>resulted</b> [1] 94/20</p> <p><b>results</b> [34] 14/1 15/7 16/25 17/7 17/9 27/6 34/9 43/1 43/4 44/6 46/17 46/18 46/22 47/15 51/11 77/19 94/22 94/25 95/18 102/9 102/12 102/16 102/20 102/24 111/5 113/23 114/16 114/20 114/23 115/12 115/16 116/1 116/2 116/10</p> <p><b>resume</b> [3] 119/1 119/20 119/22</p> <p><b>retired</b> [1] 88/12</p> <p><b>retrospect</b> [1] 83/9</p> <p><b>retrospectroscope</b> [1] 112/22</p> <p><b>return</b> [1] 44/10</p> <p><b>returned</b> [2] 72/11 101/3</p> <p><b>revert</b> [1] 48/15</p> <p><b>review</b> [8] 17/22 18/3 35/22 40/23 43/20 44/4 87/6 91/23</p> <p><b>reviewed</b> [6] 20/10 26/14 34/2 40/25 101/16 123/16</p>
<p><b>Q</b></p> <p><b>quality</b> [2] 91/2 91/6</p> <p><b>quantitation</b> [1] 107/9</p> <p><b>quantitative</b> [1] 110/23</p> <p><b>query</b> [1] 78/10</p> <p><b>question</b> [33] 5/21 7/15 16/8 30/1 30/9 32/7 36/20 38/24 39/1 39/19 48/22 51/16 60/17 65/8 65/20 69/24 76/15 79/5 96/15 98/22 100/11 108/2 108/8 110/4 110/7 110/10 110/23 110/25 111/1 111/2 115/2 115/5 115/14</p> <p><b>question:</b> [1] 112/15</p> <p><b>question: suppose</b> [1] 112/15</p> <p><b>questioned</b> [4] 1/20 109/18 125/3 125/4</p> <p><b>questions</b> [17] 6/6 12/13 22/23 57/6 60/7 60/7 73/10 106/10 109/11 109/16 109/16 109/19 111/6 112/13 112/21 118/21 121/8</p> <p><b>quick</b> [1] 67/22</p> <p><b>quickly</b> [2] 109/9</p>	<p><b>rarely</b> [3] 63/16 63/25 95/13</p> <p><b>rather</b> [11] 25/17 30/7 38/2 39/4 41/10 48/16 74/21 96/23 105/18 121/22 122/1</p> <p><b>ratios</b> [2] 43/7 111/10</p> <p><b>Ratnoff</b> [1] 94/14</p> <p><b>reaction</b> [7] 95/23 96/18 97/24 98/24 98/25 110/11 113/20</p> <p><b>reactions</b> [3] 80/5 95/22 99/7</p> <p><b>reactive</b> [2] 110/11 110/19</p> <p><b>read</b> [11] 12/13 18/14 41/12 44/21 52/7 63/21 72/23 76/13 103/16 107/2 117/11</p> <p><b>reading</b> [2] 9/23 78/7</p> <p><b>reads</b> [2] 41/5 78/22</p> <p><b>ready</b> [1] 24/25</p> <p><b>realise</b> [3] 7/7 8/19 112/24</p> <p><b>realised</b> [3] 111/23 112/5 113/3</p> <p><b>realities</b> [1] 124/4</p> <p><b>really</b> [24] 3/25 17/6 23/15 23/20 39/10 45/2 47/21 52/8 59/6 73/16 74/11 75/14</p>	<p>12/19 24/23 52/13 56/13 87/22 88/22</p> <p><b>recommend</b> [1] 10/24</p> <p><b>recommendation</b> [1] 6/25</p> <p><b>recommended</b> [3] 11/23 27/12 67/6</p> <p><b>reconcile</b> [1] 121/11</p> <p><b>record</b> [2] 3/18 100/18</p> <p><b>record-keeping</b> [1] 100/18</p> <p><b>recorded</b> [1] 12/22</p> <p><b>records</b> [8] 12/23 12/24 100/18 100/19 100/21 100/25 102/5 102/18</p> <p><b>recurrent</b> [1] 74/23</p> <p><b>recurring</b> [1] 111/16</p> <p><b>red</b> [2] 114/13 115/10</p> <p><b>reduce</b> [2] 48/16 106/15</p> <p><b>reduced</b> [1] 107/13</p> <p><b>refer</b> [5] 22/15 24/9 24/12 31/19 87/13</p> <p><b>reference</b> [4] 42/2 52/6 65/2 101/20</p> <p><b>referenced</b> [1] 79/10</p> <p><b>references</b> [1] 43/14</p>	<p><b>recalled</b> [1] 35/17</p> <p><b>recalling</b> [1] 121/15</p> <p><b>receive</b> [1] 26/5</p> <p><b>received</b> [9] 42/13 55/17 57/1 59/3 59/3 97/25 98/8 98/8 98/24</p> <p><b>recent</b> [5] 3/10 60/19 83/5 88/18 97/1</p> <p><b>recently</b> [1] 9/24</p> <p><b>recipients</b> [1] 54/2</p> <p><b>recognise</b> [2] 6/7 109/10</p> <p><b>recognised</b> [4] 1/15 9/13 62/1 94/21</p> <p><b>recognising</b> [2] 46/18 74/9</p> <p><b>recollection</b> [7] 12/15 12/19 24/23 52/13 56/13 87/22 88/22</p> <p><b>recommend</b> [1] 10/24</p> <p><b>recommendation</b> [1] 6/25</p> <p><b>recommended</b> [3] 11/23 27/12 67/6</p> <p><b>reconcile</b> [1] 121/11</p> <p><b>record</b> [2] 3/18 100/18</p> <p><b>record-keeping</b> [1] 100/18</p> <p><b>recorded</b> [1] 12/22</p> <p><b>records</b> [8] 12/23 12/24 100/18 100/19 100/21 100/25 102/5 102/18</p> <p><b>recurrent</b> [1] 74/23</p> <p><b>recurring</b> [1] 111/16</p> <p><b>red</b> [2] 114/13 115/10</p> <p><b>reduce</b> [2] 48/16 106/15</p> <p><b>reduced</b> [1] 107/13</p> <p><b>refer</b> [5] 22/15 24/9 24/12 31/19 87/13</p> <p><b>reference</b> [4] 42/2 52/6 65/2 101/20</p> <p><b>referenced</b> [1] 79/10</p> <p><b>references</b> [1] 43/14</p>	<p><b>regularly</b> [9] 12/10 15/9 26/11 46/25 80/10 86/23 87/8 91/23 100/15</p> <p><b>Rejman</b> [3] 70/2 70/4 78/11</p> <p><b>related</b> [5] 34/9 49/17 49/23 49/25 50/20</p> <p><b>relating</b> [4] 64/9 73/12 100/21 102/17</p> <p><b>relation</b> [9] 6/20 13/16 38/8 69/2 87/15 91/13 101/24 120/1 120/12</p> <p><b>relationship</b> [2] 27/24 36/4</p> <p><b>relationships</b> [1] 87/25</p> <p><b>release</b> [3] 56/9 56/16 58/6</p> <p><b>releases</b> [1] 55/21</p> <p><b>relevance</b> [2] 34/10 123/16</p> <p><b>relevant</b> [7] 39/21 53/23 54/23 56/3 59/8 66/9 101/8</p> <p><b>reliable</b> [7] 2/17 2/18 116/15 116/22 117/9 117/15 117/19</p> <p><b>religiously</b> [1] 81/6</p> <p><b>rely</b> [2] 89/25 105/21</p>	<p><b>representative</b> [9] 3/12 6/2 70/2 70/18 73/2 74/4 74/13 76/8 79/8</p> <p><b>representatives</b> [8] 1/16 60/9 60/18 72/7 73/8 74/7 75/5 78/1</p> <p><b>represented</b> [3] 68/22 68/23 81/2</p> <p><b>representing</b> [1] 8/13</p> <p><b>represents</b> [2] 75/21 118/20</p> <p><b>request</b> [2] 70/25 71/20</p> <p><b>requesting</b> [1] 66/15</p> <p><b>required</b> [4] 31/4 64/18 106/16 108/6</p> <p><b>requirement</b> [1] 100/9</p> <p><b>requirements</b> [1] 6/18</p> <p><b>requires</b> [1] 8/20</p> <p><b>requiring</b> [1] 91/15</p> <p><b>research</b> [25] 33/10 35/10 35/18 37/25 38/15 39/3 40/7 40/9 40/10 41/25 42/1 43/22 44/24 51/16 51/19 61/24 63/5 86/23 94/19 100/20</p>

<p><b>R</b></p> <p><b>reviewing [2]</b> 20/17 40/19</p> <p><b>reviews [4]</b> 4/23 10/9 86/22 100/15</p> <p><b>rheumatoid [1]</b> 39/17</p> <p><b>rheumatologist [3]</b> 20/16 35/20 37/7</p> <p><b>rheumatologists [2]</b> 39/18 84/21</p> <p><b>rheumatology [5]</b> 36/15 84/24 85/9 85/16 101/23</p> <p><b>ribavirin [1]</b> 26/3</p> <p><b>Richards [8]</b> 1/6 1/20 67/17 78/22 118/18 121/9 122/7 125/3</p> <p><b>right [24]</b> 1/11 1/11 4/10 6/18 7/12 13/8 15/11 16/25 26/9 33/23 36/14 42/24 58/14 70/4 77/7 79/12 86/12 96/9 103/8 103/15 108/5 111/15 116/2 116/5</p> <p><b>right-hand [2]</b> 33/23 42/24</p> <p><b>rigid [1]</b> 98/5</p> <p><b>ring [3]</b> 15/22 97/9 118/13</p> <p><b>rise [1]</b> 82/13</p> <p><b>rises [1]</b> 104/23</p> <p><b>risk [18]</b> 11/16 21/11 21/24 22/2 27/3 47/7 49/25 56/25 59/1 59/1 82/2 88/6 88/17 98/17 107/13 108/23 110/13 117/2</p> <p><b>risks [4]</b> 37/9 45/12 45/13 55/25</p> <p><b>Rizza [1]</b> 75/10</p> <p><b>RLIT0000305 [1]</b> 81/15</p> <p><b>robustly [1]</b> 8/10</p> <p><b>Roger [1]</b> 32/2</p> <p><b>role [2]</b> 26/4 40/18</p> <p><b>room [4]</b> 1/7 70/15 70/19 123/10</p> <p><b>round [1]</b> 112/16</p> <p><b>route [2]</b> 31/20 32/4</p> <p><b>routine [19]</b> 4/19 5/14 10/9 10/11 14/13 14/20 15/4 17/19 22/11 29/1 32/15 38/17 39/12 39/23 40/16 45/20 50/17 83/7 99/6</p> <p><b>routinely [10]</b> 4/17 4/19 4/23 15/1 15/13 32/18 39/11 76/22 98/2 99/11</p>	<p><b>Royal [36]</b> 1/23 10/6 10/25 13/15 32/14 32/24 33/7 34/15 34/16 40/1 40/6 41/7 45/10 48/6 49/1 52/2 52/14 52/16 57/17 61/17 66/21 66/24 67/13 68/23 84/14 90/2 95/4 96/17 97/21 97/25 99/7 99/23 100/13 102/15 104/16 108/10</p> <p><b>Royal Infirmary [17]</b> 32/14 32/24 33/7 34/15 40/1 40/6 48/6 49/1 52/14 52/16 57/17 66/24 96/17 97/25 99/7 100/13 102/15</p> <p><b>Ruchill [4]</b> 13/7 31/24 98/15 102/15</p> <p><b>Ruchill Hospital [1]</b> 98/15</p> <p><b>rude [1]</b> 113/17</p> <p><b>rule [1]</b> 102/19</p> <p><b>run [3]</b> 12/3 91/2 92/1</p> <p><b>running [2]</b> 63/13 85/10</p> <p><b>Russell [2]</b> 26/10 27/1</p> <p><b>S</b></p> <p><b>sad [1]</b> 109/9</p> <p><b>safe [3]</b> 14/6 100/25 109/8</p> <p><b>safer [1]</b> 109/7</p> <p><b>safety [5]</b> 18/8 18/23 64/20 65/1 101/13</p> <p><b>said [83]</b> 2/16 2/22 3/18 4/10 4/17 4/18 4/22 4/23 5/3 5/12 5/14 8/3 8/10 8/14 10/15 11/25 15/17 15/18 16/24 17/6 19/14 21/15 22/4 24/21 25/11 26/14 26/17 27/2 27/7 27/9 27/12 28/3 43/23 44/1 46/3 47/2 47/20 48/7 48/8 48/10 48/23 56/9 56/23 57/4 57/17 57/23 63/8 69/16 69/18 69/24 70/9 70/16 71/24 73/19 76/17 78/6 82/17 83/10 85/5 86/9 86/12 86/21 88/16 89/6 89/24 90/12 90/23 91/20 95/2 100/24 103/11 103/21 115/21 116/5 116/9 116/14 116/21 117/5 117/10 117/14 118/19 118/24</p>	<p>122/1</p> <p><b>said: [3]</b> 7/1 111/22 112/5</p> <p><b>said: I think [1]</b> 111/22</p> <p><b>said: I've [1]</b> 112/5</p> <p><b>same [18]</b> 3/14 4/1 5/4 6/10 6/12 8/10 21/19 31/12 33/6 36/1 43/20 46/11 53/1 57/19 61/20 68/7 86/18 89/1</p> <p><b>sample [3]</b> 39/15 40/15 113/8</p> <p><b>samples [9]</b> 32/8 32/23 33/4 33/9 34/23 114/2 115/2 116/6 118/9</p> <p><b>sat [1]</b> 20/10</p> <p><b>Savidge [2]</b> 2/22 69/11</p> <p><b>saw [7]</b> 15/6 24/13 25/5 25/9 25/24 40/14 116/16</p> <p><b>say [59]</b> 4/2 4/22 4/24 5/1 6/1 6/7 7/18 10/12 10/22 10/23 12/12 13/3 13/22 16/5 18/5 19/5 21/6 23/19 23/23 25/24 36/14 36/22 37/15 37/17 37/17 37/19 40/15 45/23 51/12 54/8 60/13 63/19 64/3 67/12 68/24 78/2 79/15 79/23 80/15 82/25 83/2 84/5 85/4 86/24 90/12 97/9 98/10 99/20 104/11 105/3 105/7 107/6 110/16 112/22 116/23 117/16 118/14 119/3 120/14</p> <p><b>say: [2]</b> 5/4 18/22</p> <p><b>say: to [1]</b> 18/22</p> <p><b>say: we're [1]</b> 5/4</p> <p><b>saying [24]</b> 3/19 8/18 9/8 10/20 15/2 20/12 35/15 37/8 39/25 44/25 45/22 46/16 47/6 47/10 57/7 58/22 77/9 86/15 96/8 103/20 103/23 112/1 116/1 118/11</p> <p><b>saying: [3]</b> 17/25 63/22 88/20</p> <p><b>saying: have [1]</b> 88/20</p> <p><b>saying: I agree [1]</b> 63/22</p> <p><b>saying: you [1]</b> 17/25</p> <p><b>says [9]</b> 2/12 27/22 33/24 34/4 42/25</p>	<p>47/22 65/17 107/2 117/12</p> <p><b>scale [1]</b> 123/14</p> <p><b>scans [2]</b> 26/18 32/17</p> <p><b>sceptical [1]</b> 27/6</p> <p><b>scheduled [1]</b> 120/4</p> <p><b>schemes [1]</b> 122/17</p> <p><b>school [1]</b> 122/17</p> <p><b>scientist [1]</b> 110/7</p> <p><b>Scotland [43]</b> 3/6 4/6 4/7 6/4 6/10 7/2 9/8 34/2 48/12 53/22 54/2 54/4 54/18 56/1 56/7 57/21 61/19 71/5 71/8 72/20 72/21 74/8 74/9 74/15 75/16 75/21 80/9 80/10 80/24 80/25 81/5 81/8 87/25 92/25 93/1 93/23 94/1 95/7 95/9 97/12 101/12 109/7 117/3</p> <p><b>Scottish [37]</b> 4/6 4/11 4/12 5/18 6/1 33/14 42/12 43/3 46/16 47/5 56/5 58/6 58/7 58/20 65/3 67/3 67/22 74/3 74/10 74/12 75/4 75/12 75/19 79/7 80/5 80/8 80/11 81/6 88/1 88/7 92/21 93/6 93/12 93/17 95/12 95/16 111/12</p> <p><b>screen [5]</b> 46/12 60/11 74/2 82/5 121/23</p> <p><b>scrutinising [1]</b> 123/3</p> <p><b>searchingly [1]</b> 121/9</p> <p><b>season [1]</b> 124/6</p> <p><b>second [7]</b> 2/3 3/7 7/19 41/25 52/12 68/6 110/25</p> <p><b>secondly [1]</b> 95/8</p> <p><b>secretary [3]</b> 67/2 69/7 76/1</p> <p><b>section [1]</b> 36/11</p> <p><b>see [54]</b> 1/11 2/3 2/20 3/4 3/23 9/24 16/5 18/6 28/1 28/2 28/4 28/6 28/7 29/6 33/19 33/24 34/12 36/5 41/14 42/5 42/19 43/12 43/14 43/19 45/25 49/10 49/20 50/18 62/19 64/17 64/21 64/22 65/7 68/12 68/21 69/5 69/8 77/20 78/6 79/4 81/17 81/23 88/19 90/18 101/15 103/1 106/24 108/17 113/10 113/14 113/15 121/3 121/21 122/7</p>	<p><b>seeing [4]</b> 19/16 45/14 59/19 85/7</p> <p><b>seek [3]</b> 71/22 75/10 80/2</p> <p><b>seeking [3]</b> 39/2 65/22 75/25</p> <p><b>seem [1]</b> 103/22</p> <p><b>seemed [5]</b> 73/22 74/3 74/4 85/24 92/9</p> <p><b>seen [14]</b> 7/13 18/12 30/25 34/16 36/13 37/14 43/5 46/18 47/15 50/12 67/24 112/20 113/2 114/13</p> <p><b>select [1]</b> 33/4</p> <p><b>selected [1]</b> 42/21</p> <p><b>self [4]</b> 48/12 81/18 81/19 95/9</p> <p><b>self-perception [1]</b> 81/18</p> <p><b>self-sufficient [2]</b> 48/12 95/9</p> <p><b>self-treatment [1]</b> 81/19</p> <p><b>send [7]</b> 17/1 31/11 54/10 58/11 82/18 99/7 116/6</p> <p><b>senior [2]</b> 36/15 61/23</p> <p><b>sense [2]</b> 83/20 108/4</p> <p><b>sensitive [2]</b> 8/19 110/11</p> <p><b>sent [11]</b> 18/10 54/15 57/19 58/9 58/10 63/21 77/16 83/12 113/8 114/2 115/2</p> <p><b>sentence [1]</b> 46/19</p> <p><b>separate [6]</b> 32/6 36/1 63/5 81/9 102/1 102/3</p> <p><b>separately [2]</b> 100/19 102/4</p> <p><b>September [7]</b> 53/19 54/23 60/19 63/8 103/14 103/15 111/6</p> <p><b>sequelae [1]</b> 50/1</p> <p><b>sera [1]</b> 115/3</p> <p><b>serial [1]</b> 110/19</p> <p><b>series [2]</b> 18/7 106/10</p> <p><b>serious [4]</b> 20/7 21/23 24/2 25/9</p> <p><b>seriousness [1]</b> 23/15</p> <p><b>sero [1]</b> 115/1</p> <p><b>sero-positivity [1]</b> 115/1</p> <p><b>seroconversion [1]</b> 14/7</p> <p><b>seropositive [1]</b> 49/16</p> <p><b>servants [1]</b> 122/23</p> <p><b>service [11]</b> 12/5 28/24 29/22 31/14 61/20 62/4 70/22 84/23 85/18 92/5 97/11</p>	<p><b>services [3]</b> 61/9 100/4 123/4</p> <p><b>session [2]</b> 20/16 35/15</p> <p><b>set [5]</b> 12/4 28/24 30/13 31/22 68/16</p> <p><b>setting [1]</b> 94/12</p> <p><b>seven [1]</b> 107/5</p> <p><b>seven-day [1]</b> 107/5</p> <p><b>several [6]</b> 17/6 55/6 55/8 57/12 60/21 70/16</p> <p><b>severe [5]</b> 42/20 49/12 49/22 50/19 91/22</p> <p><b>severity [2]</b> 34/18 86/13</p> <p><b>sexual [8]</b> 51/19 51/24 52/15 52/17 52/19 53/7 98/20 117/4</p> <p><b>sexually [1]</b> 52/22</p> <p><b>shall [1]</b> 122/15</p> <p><b>share [4]</b> 10/19 10/19 57/8 93/3</p> <p><b>shared [2]</b> 17/9 86/8</p> <p><b>sharing [1]</b> 59/6</p> <p><b>she [1]</b> 44/25</p> <p><b>shed [1]</b> 122/25</p> <p><b>sheer [1]</b> 123/14</p> <p><b>sheet [1]</b> 40/14</p> <p><b>sheets [7]</b> 18/13 18/22 54/1 54/7 54/14 55/21 101/8</p> <p><b>shelf [2]</b> 91/16 91/17</p> <p><b>Sherlock [1]</b> 26/22</p> <p><b>Shirley [1]</b> 120/3</p> <p><b>shock [3]</b> 94/24 95/20 115/4</p> <p><b>shocking [1]</b> 103/22</p> <p><b>short [3]</b> 60/1 85/16 109/19</p> <p><b>shortly [1]</b> 4/12</p> <p><b>should [69]</b> 2/16 3/20 4/14 5/1 6/5 6/9 7/3 8/9 11/24 20/12 23/3 23/9 23/10 26/15 27/20 33/4 40/13 46/5 47/17 55/16 55/21 55/24 56/12 56/23 57/1 57/13 57/24 58/2 59/6 59/11 64/7 65/11 65/14 65/17 66/5 66/12 66/16 67/6 70/13 70/22 71/19 72/4 73/20 74/8 74/13 74/24 75/21 76/5 76/16 76/21 76/24 77/3 77/9 77/15 77/19 79/17 79/18 80/8 80/15 85/12 91/19 92/4 92/13 92/17</p>
--	---	---	--	--	---

<p><b>S</b></p> <p><b>should... [5]</b> 110/16 110/16 116/6 117/17 118/19</p> <p><b>shouldn't [4]</b> 57/2 58/20 76/18 79/19</p> <p><b>show [2]</b> 11/13 114/20</p> <p><b>showed [4]</b> 9/14 21/22 46/22 114/4</p> <p><b>showing [2]</b> 46/17 114/25</p> <p><b>shown [3]</b> 26/22 106/5 106/20</p> <p><b>sick [3]</b> 34/16 41/7 62/8</p> <p><b>side [3]</b> 30/5 30/24 42/25</p> <p><b>sign [3]</b> 83/10 83/17 86/2</p> <p><b>signatures [1]</b> 82/8</p> <p><b>signed [3]</b> 18/14 18/14 18/21</p> <p><b>significance [3]</b> 21/9 50/23 51/4</p> <p><b>significant [2]</b> 15/21 53/12</p> <p><b>signs [2]</b> 25/15 99/3</p> <p><b>similar [5]</b> 42/15 45/8 50/25 69/23 104/14</p> <p><b>similarity [1]</b> 45/25</p> <p><b>simple [2]</b> 31/9 66/7</p> <p><b>simply [1]</b> 74/21</p> <p><b>Simpson [14]</b> 4/5 5/20 69/6 69/16 69/24 71/24 72/3 73/9 75/25 76/7 77/13 79/7 79/13 79/15</p> <p><b>Simpson's [2]</b> 71/15 71/18</p> <p><b>since [4]</b> 4/20 7/6 53/21 120/22</p> <p><b>single [2]</b> 34/17 97/17</p> <p><b>sir [18]</b> 1/13 55/14 59/14 59/22 59/24 79/23 103/10 109/16 109/18 111/15 114/22 115/19 118/12 118/19 118/25 119/19 119/20 125/4</p> <p><b>Sir Brian [7]</b> 59/22 79/23 111/15 114/22 115/19 118/12 119/19</p> <p><b>Sir Michael Banner's [1]</b> 55/14</p> <p><b>sister [8]</b> 29/5 29/5 29/7 30/7 30/15 30/23 31/5 82/17</p> <p><b>Sister Campbell [1]</b> 82/17</p> <p><b>Sister Neilson [1]</b> 30/23</p>	<p><b>sitting [1]</b> 22/24</p> <p><b>situation [8]</b> 61/14 63/24 70/15 72/17 73/24 84/19 108/20 117/19</p> <p><b>situation's [1]</b> 80/23</p> <p><b>six [1]</b> 2/12</p> <p><b>skin [2]</b> 49/9 50/15</p> <p><b>slightly [2]</b> 19/12 74/11</p> <p><b>slow [1]</b> 108/25</p> <p><b>slowly [1]</b> 121/17</p> <p><b>small [5]</b> 13/20 25/1 37/13 93/12 93/16</p> <p><b>smaller [1]</b> 122/20</p> <p><b>SNBTS [27]</b> 14/4 18/8 18/18 53/17 53/24 55/3 55/6 55/11 55/19 56/6 56/14 57/14 58/7 60/20 64/7 64/20 65/1 67/19 90/25 93/2 95/8 95/19 95/25 96/12 98/4 101/13 101/16</p> <p><b>so [193]</b></p> <p><b>social [2]</b> 8/17 109/5</p> <p><b>societies [2]</b> 6/4 76/9</p> <p><b>Society [15]</b> 12/8 45/18 46/25 47/5 54/10 64/24 72/4 72/7 76/3 77/14 77/16 77/21 77/25 80/11 122/16</p> <p><b>Society's [3]</b> 65/3 70/25 71/19</p> <p><b>solicitor [1]</b> 1/14</p> <p><b>Solicitor's [1]</b> 70/22</p> <p><b>solidly [1]</b> 94/3</p> <p><b>solved [1]</b> 95/14</p> <p><b>some [47]</b> 3/23 6/7 6/19 8/7 9/15 13/17 14/5 15/16 16/6 17/4 19/22 21/24 23/13 33/11 38/19 44/21 48/13 48/14 54/13 54/22 56/15 62/15 62/18 63/14 69/22 70/19 74/8 80/16 82/6 82/23 83/25 87/10 90/13 92/8 95/3 99/17 101/20 103/6 109/20 110/3 110/22 113/21 114/4 116/2 120/11 120/13 122/7</p> <p><b>somebody [6]</b> 11/21 15/2 96/6 97/1 105/2 105/7</p> <p><b>someone [3]</b> 76/12 79/20 111/11</p> <p><b>something [14]</b> 7/4 17/14 17/15 22/21 83/6 86/15 89/14 104/3 114/9 114/14</p>	<p>114/17 119/3 120/14 122/13</p> <p><b>something's [1]</b> 10/3</p> <p><b>sometime [1]</b> 44/15</p> <p><b>sometimes [2]</b> 16/13 19/7</p> <p><b>somewhere [1]</b> 104/24</p> <p><b>soon [4]</b> 2/19 3/1 24/4 117/9</p> <p><b>sophisticated [1]</b> 27/14</p> <p><b>sorry [19]</b> 11/3 14/16 15/13 17/17 37/6 44/13 48/14 55/5 63/11 78/20 90/9 90/9 92/20 94/5 103/7 108/4 113/16 113/17 117/23</p> <p><b>sorted [1]</b> 18/16</p> <p><b>sought [6]</b> 2/16 3/20 44/2 65/13 70/22 71/19</p> <p><b>Soumik [23]</b> 1/10 2/2 2/9 3/3 24/8 33/13 33/23 41/2 42/4 42/18 42/23 43/14 46/13 49/3 49/5 49/20 53/14 60/11 65/7 68/5 75/23 79/4 81/15</p> <p><b>source [1]</b> 97/19</p> <p><b>speaking [1]</b> 118/4</p> <p><b>special [1]</b> 14/14</p> <p><b>specialist [2]</b> 23/7 28/23</p> <p><b>specific [8]</b> 10/16 28/16 29/2 43/2 48/19 79/5 91/9 102/16</p> <p><b>specifically [1]</b> 68/18</p> <p><b>speed [1]</b> 120/25</p> <p><b>spent [4]</b> 54/22 67/8 82/6 113/21</p> <p><b>spleen [2]</b> 20/23 37/4</p> <p><b>spoke [3]</b> 12/17 26/11 48/19</p> <p><b>spoken [1]</b> 86/6</p> <p><b>spread [1]</b> 93/25</p> <p><b>staff [5]</b> 1/9 29/8 30/15 31/5 79/8</p> <p><b>stage [5]</b> 43/9 46/20 59/4 94/23 114/10</p> <p><b>standard [7]</b> 17/23 18/3 40/10 87/7 96/5 98/21 107/4</p> <p><b>stands [1]</b> 123/10</p> <p><b>start [13]</b> 15/18 18/25 20/15 23/11 27/20 29/10 33/12 35/14 60/10 73/19 91/20 99/10 118/7</p> <p><b>started [9]</b> 11/3 11/7 28/4 31/21 72/1 84/6</p>	<p>86/16 92/22 96/8</p> <p><b>starting [4]</b> 13/24 18/7 24/2 29/20</p> <p><b>starts [1]</b> 69/8</p> <p><b>state [1]</b> 47/16</p> <p><b>stated [2]</b> 55/24 63/12</p> <p><b>statement [20]</b> 11/2 11/25 20/10 24/8 28/3 43/23 44/2 57/23 58/12 61/13 63/8 63/10 63/11 63/22 69/15 71/11 87/13 104/3 105/21 106/1</p> <p><b>statements [5]</b> 29/23 30/3 54/25 58/4 89/9</p> <p><b>States [2]</b> 44/19 94/17</p> <p><b>statistical [3]</b> 44/4 44/10 51/4</p> <p><b>statistician [1]</b> 44/3</p> <p><b>statistics [1]</b> 43/25</p> <p><b>status [2]</b> 16/22 65/16</p> <p><b>stayed [1]</b> 84/16</p> <p><b>steamie [1]</b> 86/5</p> <p><b>steroids [1]</b> 26/23</p> <p><b>Steven [13]</b> 20/16 22/5 33/16 36/10 36/14 37/7 37/14 38/11 39/13 40/20 45/21 46/7 86/16</p> <p><b>Steven's [2]</b> 26/13 35/24</p> <p><b>stigma [1]</b> 8/17</p> <p><b>still [7]</b> 1/12 59/10 85/4 117/19 120/11 120/13 123/2</p> <p><b>stop [4]</b> 37/6 71/25 76/24 77/9</p> <p><b>stopping [1]</b> 113/17</p> <p><b>stored [2]</b> 33/5 115/3</p> <p><b>story [1]</b> 78/20</p> <p><b>straight [1]</b> 23/6</p> <p><b>strategy [1]</b> 53/18</p> <p><b>stretch [1]</b> 123/20</p> <p><b>strict [1]</b> 98/19</p> <p><b>struggle [1]</b> 116/10</p> <p><b>struggling [1]</b> 124/1</p> <p><b>student [1]</b> 96/25</p> <p><b>studied [5]</b> 33/20 38/5 40/4 45/12 46/17</p> <p><b>studies [31]</b> 9/12 14/3 18/11 18/13 18/15 18/25 27/7 27/23 27/24 33/8 37/24 38/6 38/8 40/9 40/22 45/1 45/8 47/3 47/4 50/22 50/25 82/22 83/1 101/10 101/15 101/22 102/1 102/6 102/8 102/24 106/22</p> <p><b>study [51]</b> 9/13 13/24 20/14 21/7 22/5 26/13 34/17 35/8 35/20</p>	<p>35/25 36/16 38/14 39/7 39/10 40/11 40/17 40/18 41/8 41/10 41/13 41/17 44/14 44/18 45/11 48/2 49/3 49/11 50/3 50/6 50/8 50/9 52/3 52/11 52/14 52/15 101/15 101/18 101/23 101/23 102/2 102/11 102/13 102/16 102/19 102/20 107/8 110/15 111/7 114/7 115/12 116/23</p> <p><b>Sturrock [4]</b> 33/16 35/19 85/16 86/10</p> <p><b>style [1]</b> 81/18</p> <p><b>subject [5]</b> 35/2 38/9 39/7 94/5 118/7</p> <p><b>submit [1]</b> 40/10</p> <p><b>submitted [1]</b> 43/16</p> <p><b>subscribed [1]</b> 44/22</p> <p><b>subsequent [2]</b> 26/7 68/1</p> <p><b>subsequently [2]</b> 53/25 67/15</p> <p><b>subset [1]</b> 45/23</p> <p><b>subsets [1]</b> 102/7</p> <p><b>succeeded [3]</b> 13/10 68/20 109/8</p> <p><b>successor [1]</b> 68/2</p> <p><b>such [10]</b> 24/20 52/3 52/13 53/5 61/6 78/2 83/23 87/9 97/23 119/14</p> <p><b>sue [1]</b> 79/12</p> <p><b>sued [3]</b> 76/18 79/9 79/11</p> <p><b>suffered [1]</b> 108/23</p> <p><b>sufficient [3]</b> 43/8 48/12 95/9</p> <p><b>sufficiently [1]</b> 98/22</p> <p><b>suggested [5]</b> 51/23 58/5 60/24 70/19 71/18</p> <p><b>suggesting [1]</b> 77/9</p> <p><b>suggests [1]</b> 49/21</p> <p><b>summarise [1]</b> 4/16</p> <p><b>summarised [1]</b> 8/4</p> <p><b>summary [2]</b> 21/2 33/19</p> <p><b>summer [1]</b> 115/24</p> <p><b>supervising [1]</b> 82/22</p> <p><b>supplementary [1]</b> 63/22</p> <p><b>supplier [1]</b> 93/3</p> <p><b>suppliers [1]</b> 123/4</p> <p><b>support [4]</b> 31/17 31/20 31/22 47/8</p> <p><b>supported [1]</b> 84/9</p> <p><b>supporting [1]</b> 47/4</p> <p><b>supportive [1]</b> 47/11</p>	<p><b>supports [1]</b> 57/18</p> <p><b>suppose [4]</b> 111/11 112/15 112/16 112/25</p> <p><b>supposing [1]</b> 15/2</p> <p><b>sure [17]</b> 1/10 15/17 18/23 24/6 29/24 74/13 75/3 75/19 77/20 80/6 83/12 89/24 95/16 103/2 103/23 123/11 124/6</p> <p><b>surgeons [1]</b> 101/1</p> <p><b>surgery [1]</b> 106/8</p> <p><b>surprise [1]</b> 94/24</p> <p><b>surprised [2]</b> 73/22 111/5</p> <p><b>surrounding [2]</b> 64/20 65/1</p> <p><b>survey [3]</b> 20/25 51/24 52/13</p> <p><b>swearing [1]</b> 1/10</p> <p><b>swiftly [1]</b> 17/16</p> <p><b>symposium [4]</b> 35/13 36/23 86/7 103/12</p> <p><b>symptomatic [1]</b> 19/8</p> <p><b>symptoms [3]</b> 19/9 24/2 98/13</p> <p><b>synthetic [1]</b> 107/23</p> <p><b>system [6]</b> 17/21 39/20 91/15 92/10 98/5 98/7</p> <p><b>systematically [1]</b> 99/16</p> <p><b>systems [1]</b> 100/18</p> <hr/> <p><b>T</b></p> <p><b>T cell [3]</b> 43/7 102/7 111/10</p> <p><b>T cell study [1]</b> 115/12</p> <p><b>T lymphocytes [1]</b> 111/25</p> <p><b>Tait [1]</b> 68/2</p> <p><b>take [15]</b> 5/22 15/16 15/19 39/14 40/15 59/15 59/16 69/14 72/19 90/11 93/7 112/12 119/16 122/15 122/21</p> <p><b>taken [7]</b> 9/9 69/2 85/20 91/9 112/23 121/5 122/24</p> <p><b>talk [8]</b> 10/23 34/20 72/24 83/4 86/5 104/1 104/5 106/3</p> <p><b>talked [1]</b> 91/7</p> <p><b>talking [17]</b> 1/18 6/11 6/14 9/10 9/20 15/8 17/3 23/17 47/10 63/9 86/1 94/8 98/23 102/7 109/21 114/22 114/24</p> <p><b>talks [2]</b> 42/20 70/6</p> <p><b>teaching [1]</b> 61/24</p>
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<p><b>T</b></p> <p><b>team [6]</b> 1/8 29/6 85/14 109/4 121/9 122/19</p> <p><b>teaspoon [1]</b> 39/15</p> <p><b>Tedder [1]</b> 117/10</p> <p><b>television [1]</b> 103/4</p> <p><b>tell [15]</b> 1/25 3/17 7/7 7/20 19/3 20/4 26/19 37/18 39/14 40/3 59/11 81/24 100/14 116/8 119/10</p> <p><b>telling [5]</b> 8/11 15/23 23/14 98/7 98/12</p> <p><b>tells [1]</b> 116/17</p> <p><b>ten [2]</b> 24/1 30/13</p> <p><b>terms [13]</b> 6/22 10/6 14/17 21/2 23/3 39/2 39/25 43/3 44/6 94/11 95/24 119/1 119/20</p> <p><b>test [52]</b> 3/25 4/2 4/19 5/1 5/6 7/20 7/21 7/22 8/23 9/25 10/13 10/15 10/23 11/3 11/8 11/22 12/25 13/18 13/22 14/21 14/25 15/6 15/16 15/22 15/23 16/14 17/19 18/6 19/18 20/1 27/19 40/17 50/15 50/15 50/17 72/2 77/2 94/25 102/16 113/8 113/9 113/11 113/13 113/21 114/2 116/14 116/22 117/9 117/19 118/1 118/8 118/14</p> <p><b>test's [1]</b> 117/12</p> <p><b>tested [12]</b> 6/22 12/16 13/3 13/17 13/19 18/24 19/1 34/23 52/24 53/6 66/25 98/21</p> <p><b>testing [44]</b> 1/22 2/14 2/14 2/15 3/13 4/3 4/24 5/4 5/11 5/12 5/15 6/12 6/15 6/20 7/6 7/9 7/23 7/24 8/18 9/18 10/7 11/1 12/18 13/6 13/6 13/8 13/12 13/17 14/2 14/11 14/17 14/23 17/12 17/17 19/24 22/12 32/16 42/21 51/11 68/9 83/16 111/3 113/14 115/8</p> <p><b>tests [64]</b> 2/17 2/18 2/20 2/21 2/23 3/9 4/18 4/25 7/17 7/18 10/10 10/11 10/12 10/25 11/11 11/12 11/19 11/24 12/9</p>	<p>12/17 12/17 15/4 15/12 15/12 15/15 15/19 16/24 16/25 17/3 18/3 18/24 19/12 19/16 19/20 20/20 21/3 21/3 21/9 26/16 27/22 27/25 29/3 31/5 31/8 31/11 34/8 34/25 36/18 39/11 39/12 39/13 39/16 39/16 44/5 45/22 45/24 46/8 49/9 83/7 86/19 96/10 114/24 117/14 118/5</p> <p><b>tests' [1]</b> 19/23</p> <p><b>text [3]</b> 41/22 42/10 42/18</p> <p><b>than [17]</b> 25/17 30/7 38/2 39/4 41/10 48/16 51/14 59/18 65/4 74/21 96/23 105/18 108/6 119/18 121/22 123/15 124/3</p> <p><b>thank [17]</b> 1/16 34/7 41/6 59/13 59/24 80/14 82/4 103/10 109/15 118/17 118/24 119/15 119/18 119/19 120/18 121/20 124/9</p> <p><b>thanks [1]</b> 119/4</p> <p><b>that [576]</b></p> <p><b>that's [33]</b> 1/6 1/18 4/20 5/24 6/10 12/19 13/8 19/12 28/6 32/7 35/10 35/25 36/24 47/9 54/20 70/5 76/19 79/3 79/9 84/22 90/2 90/10 90/11 96/22 104/21 106/14 110/4 111/15 115/7 117/5 117/18 118/17 119/23</p> <p><b>that: [3]</b> 19/5 19/14 22/5</p> <p><b>that: the [1]</b> 22/5</p> <p><b>that: this [2]</b> 19/5 19/14</p> <p><b>their [51]</b> 6/23 7/8 14/10 15/4 15/9 16/21 16/22 16/22 18/17 19/3 20/18 25/15 28/20 29/23 31/15 37/12 38/6 38/7 38/22 38/22 39/5 39/5 39/7 41/17 41/18 42/15 45/11 46/6 46/22 48/20 52/19 54/6 55/25 57/15 58/3 60/9 61/4 62/21 69/3 70/17 72/17 76/6 77/19 77/25 78/5 92/2 105/4 109/11 109/11 111/14 121/22</p> <p><b>them [49]</b> 4/3 4/22 6/9</p>	<p>7/23 7/24 8/15 9/25 11/21 12/14 12/17 13/22 14/3 14/22 18/14 18/14 18/17 19/3 21/24 22/1 22/8 22/16 23/14 23/15 26/11 26/14 28/7 31/11 31/13 36/19 39/14 45/15 45/24 55/22 57/8 60/23 65/9 78/17 85/8 92/10 99/1 101/5 102/2 102/2 107/6 109/13 116/11 117/3 118/7 118/8</p> <p><b>theme [2]</b> 74/23 111/16</p> <p><b>themselves [3]</b> 46/21 78/23 79/21</p> <p><b>then [106]</b> 1/25 3/1 3/3 5/25 7/22 8/24 9/21 10/12 11/5 11/23 12/1 12/3 13/1 13/10 13/13 13/13 14/4 14/24 15/3 15/7 16/15 17/21 19/9 19/22 20/6 22/13 24/12 25/4 25/20 25/23 26/3 28/23 29/20 30/20 31/3 32/15 33/4 33/22 34/4 34/12 34/20 34/25 34/25 35/1 35/4 37/4 37/12 37/13 37/14 42/17 42/21 43/12 49/3 49/19 52/20 54/8 54/10 55/11 56/4 57/9 57/25 61/18 64/12 65/6 65/17 67/24 68/19 69/7 71/9 71/17 72/6 72/8 72/23 78/25 82/4 84/10 85/2 85/14 88/8 88/9 90/13 92/17 93/3 93/19 97/12 98/20 102/22 103/16 104/2 105/3 105/8 105/9 105/25 107/5 107/6 108/21 108/24 108/25 110/20 112/23 117/7 117/22 118/8 122/11 122/22 123/2</p> <p><b>theory [1]</b> 45/5</p> <p><b>therapy [2]</b> 29/22 31/4</p> <p><b>there [107]</b> 1/4 2/13 6/16 8/7 8/8 8/14 10/15 13/19 13/19 14/6 14/13 15/20 15/24 16/9 16/9 17/6 17/23 22/8 24/21 24/25 25/7 26/23 30/25 31/1 32/1 32/13 37/6 38/18 39/20 40/2 40/5 41/22 42/21</p>	<p>45/19 45/25 47/7 47/22 47/23 48/10 49/7 53/1 53/6 53/13 54/12 54/13 56/9 59/15 64/3 64/22 65/14 65/23 74/6 74/8 74/11 76/4 76/19 77/8 77/12 79/5 84/3 87/1 88/25 90/24 91/18 92/12 92/23 93/23 95/6 96/3 97/22 97/22 97/24 98/5 98/16 98/18 99/15 99/25 101/9 102/1 102/9 102/14 103/5 104/1 104/2 104/6 104/12 108/12 109/1 109/24 110/3 114/9 114/14 114/25 115/4 115/10 116/13 116/23 117/24 118/22 119/16 119/25 120/7 120/9 120/10 120/12 123/11 123/20</p> <p><b>there's [23]</b> 5/1 5/5 7/22 9/4 10/13 26/20 27/2 27/3 27/16 27/24 28/9 32/4 54/8 56/24 65/10 69/8 71/9 72/6 90/4 95/6 110/24 116/18 117/2</p> <p><b>therefore [5]</b> 43/9 61/5 62/17 76/18 81/24</p> <p><b>these [79]</b> 2/3 9/23 11/12 12/1 12/10 16/25 18/11 18/15 18/22 18/23 18/25 19/15 21/9 23/24 24/25 27/2 27/6 28/18 28/19 29/25 31/7 31/11 35/20 37/21 38/6 38/11 38/13 39/15 43/6 45/1 45/2 45/15 45/23 45/24 46/19 47/3 47/4 47/21 48/14 50/10 52/18 53/3 55/17 57/1 57/7 58/8 75/14 75/15 75/22 84/15 86/22 86/22 87/6 88/2 92/8 93/7 93/25 95/5 95/7 98/14 101/15 101/17 102/24 103/18 104/23 106/20 107/2 107/10 108/19 108/22 111/24 111/24 112/8 112/13 112/20 112/21 113/2 116/10 117/14</p> <p><b>thesis [2]</b> 35/24 43/24</p> <p><b>they [117]</b> 6/22 7/7 8/3 10/21 11/9 11/13 11/15 12/10 13/22</p>	<p>15/16 16/6 16/18 18/16 23/6 23/7 23/16 23/24 26/18 26/19 27/5 27/5 27/7 27/11 27/12 27/17 27/19 28/2 28/20 28/21 28/21 29/5 29/6 29/8 29/10 29/18 29/22 29/22 30/18 30/19 32/1 32/15 33/9 35/20 36/7 37/14 38/18 38/23 39/6 39/14 39/19 40/3 40/11 40/13 42/8 44/11 45/8 47/3 47/10 47/11 50/11 50/12 50/22 50/24 52/19 52/20 52/24 55/3 56/1 58/25 59/1 61/24 66/5 70/16 71/25 73/7 74/17 74/24 79/11 79/13 79/20 81/3 82/1 84/17 84/18 85/5 85/11 88/12 92/25 93/14 93/15 97/9 97/10 97/16 97/18 98/17 99/1 100/22 101/4 101/5 101/5 105/3 108/24 110/5 110/6 110/24 112/8 114/3 114/17 114/20 115/4 115/5 115/17 120/16 121/13 121/13 122/1 122/13</p> <p><b>thing [11]</b> 6/19 6/19 22/4 43/20 46/11 72/2 89/1 106/17 110/14 113/7 117/1</p> <p><b>things [6]</b> 39/18 57/1 101/1 101/17 104/23 117/1</p> <p><b>think [206]</b></p> <p><b>think we [1]</b> 89/20</p> <p><b>thinking [6]</b> 16/2 113/18 113/22 114/9 114/19 116/8</p> <p><b>third [3]</b> 7/22 49/20 77/11</p> <p><b>this [174]</b></p> <p><b>Thomas [1]</b> 86/7</p> <p><b>thorough [1]</b> 121/2</p> <p><b>those [31]</b> 3/16 12/20 26/6 30/3 32/17 34/9 38/16 42/15 43/5 46/18 47/14 47/15 61/4 78/9 81/2 88/17 91/24 101/1 101/2 101/18 102/1 102/23 106/22 109/15 113/1 118/5 119/8 121/12 122/23 123/6 123/25</p> <p><b>though [5]</b> 27/5 76/13</p>	<p>76/17 78/22 123/11</p> <p><b>thought [38]</b> 2/12 2/13 2/16 3/24 3/25 8/15 9/7 10/8 22/2 47/19 55/19 57/3 57/11 58/4 59/5 59/11 65/21 66/3 66/10 70/13 70/21 70/23 74/6 74/12 75/7 76/4 76/5 79/3 79/6 80/18 86/24 88/19 89/14 95/11 103/22 111/22 115/17 115/21</p> <p><b>thought: [1]</b> 116/16</p> <p><b>thought: oh [1]</b> 116/16</p> <p><b>thoughts [4]</b> 45/7 66/8 78/21 95/3</p> <p><b>three [15]</b> 1/8 1/8 6/3 7/15 17/15 24/10 24/24 28/22 62/3 62/4 69/7 85/14 119/17 119/17 121/10</p> <p><b>thrombosis [3]</b> 37/22 82/23 110/14</p> <p><b>through [9]</b> 10/10 26/9 28/20 60/9 93/19 98/11 100/2 113/23 121/20</p> <p><b>throughout [1]</b> 123/21</p> <p><b>Thursday [1]</b> 120/2</p> <p><b>thus [1]</b> 89/1</p> <p><b>time [100]</b> 1/11 5/9 9/20 10/24 11/21 15/5 15/16 16/6 16/18 16/20 17/8 17/23 18/5 24/1 25/8 25/25 26/12 27/17 29/12 31/11 31/12 31/15 32/19 35/17 36/1 36/5 36/9 36/20 37/13 37/23 38/19 43/23 45/8 47/17 48/11 50/17 51/13 53/1 53/6 54/22 56/6 57/7 57/20 59/14 61/18 61/20 62/7 62/9 66/1 67/6 67/8 67/10 67/18 67/20 67/23 68/21 68/22 70/13 73/9 73/17 75/17 76/8 76/25 77/21 79/25 80/12 82/1 82/6 82/9 82/12 82/16 84/7 84/11 85/17 85/21 86/18 88/5 88/16 92/5 95/3 95/11 96/16 97/22 99/17 99/18 101/2 101/2 102/21 102/23 103/5 106/23 113/22 116/5 116/9 119/9 121/5 122/24 123/22 123/24 123/25</p>
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<p><b>T</b></p> <p><b>timely [1]</b> 56/9</p> <p><b>times [4]</b> 87/14 109/25 113/1 119/11</p> <p><b>timescale [1]</b> 24/22</p> <p><b>timetable [3]</b> 119/1 120/12 122/7</p> <p><b>tin [1]</b> 81/3</p> <p><b>tip [1]</b> 123/8</p> <p><b>tissue [3]</b> 32/8 32/22 33/4</p> <p><b>to [746]</b></p> <p><b>today [2]</b> 118/25 119/21</p> <p><b>together [11]</b> 21/20 29/7 31/6 56/23 71/13 78/9 79/21 84/15 85/24 88/4 116/4</p> <p><b>told [31]</b> 6/22 15/15 16/1 16/10 16/11 23/15 35/16 39/6 44/5 44/21 45/11 46/6 46/22 47/17 51/10 56/24 57/2 58/21 78/16 78/17 83/14 83/19 85/25 90/16 99/2 111/8 112/4 113/24 117/17 117/21 117/23</p> <p><b>too [1]</b> 121/25</p> <p><b>took [6]</b> 3/1 17/13 17/14 52/10 66/19 99/15</p> <p><b>tooth [1]</b> 106/24</p> <p><b>top [8]</b> 2/9 34/6 43/13 77/11 81/16 104/5 106/3 110/21</p> <p><b>topic [8]</b> 32/6 35/24 51/16 59/15 60/6 60/6 64/12 81/9</p> <p><b>touch [3]</b> 94/13 94/15 94/16</p> <p><b>touched [1]</b> 33/11</p> <p><b>towards [2]</b> 58/18 122/11</p> <p><b>Towers [1]</b> 65/17</p> <p><b>Towers' [2]</b> 66/8 66/12</p> <p><b>trace [2]</b> 97/16 97/18</p> <p><b>track [1]</b> 101/10</p> <p><b>tradition [1]</b> 91/23</p> <p><b>tragic [2]</b> 108/14 108/22</p> <p><b>trained [4]</b> 4/6 28/22 84/15 94/14</p> <p><b>training [1]</b> 84/12</p> <p><b>tranexamic [9]</b> 106/2 106/5 106/13 106/17 107/3 107/15 107/16 107/22 108/7</p> <p><b>tranexamic acid [1]</b></p>	<p>108/7</p> <p><b>transaminase [1]</b> 99/14</p> <p><b>transaminase-itis [1]</b> 99/14</p> <p><b>transcript [1]</b> 22/21</p> <p><b>transcripts [1]</b> 89/5</p> <p><b>transferred [1]</b> 98/15</p> <p><b>transfusion [13]</b> 24/19 25/22 55/16 60/22 61/20 61/22 96/6 97/2 97/2 97/11 98/11 100/3 108/14</p> <p><b>transfusion-transmitted [1]</b> 108/14</p> <p><b>transfusions [1]</b> 123/5</p> <p><b>transmission [2]</b> 53/7 98/1</p> <p><b>transmitted [4]</b> 24/19 52/22 108/14 123/5</p> <p><b>transplant [1]</b> 61/17</p> <p><b>transplantation [1]</b> 63/6</p> <p><b>treat [4]</b> 7/19 95/7 98/13 101/5</p> <p><b>treated [11]</b> 25/14 49/22 50/19 67/5 67/9 67/18 88/15 95/18 108/12 111/12 116/25</p> <p><b>treating [1]</b> 31/13</p> <p><b>treatment [47]</b> 8/11 8/24 9/4 9/6 10/16 14/5 15/3 18/17 23/10 24/5 24/16 26/8 26/20 26/21 27/5 27/13 28/20 29/12 29/20 30/17 31/16 36/4 36/6 38/18 39/5 46/2 48/4 48/5 48/9 48/15 55/7 60/22 61/3 69/3 81/12 81/19 82/1 83/19 87/5 87/8 90/15 91/15 92/13 98/9 109/7 109/8 120/6</p> <p><b>treatments [10]</b> 7/10 26/2 26/6 31/8 36/8 38/22 48/20 60/15 62/21 109/12</p> <p><b>Treloars [1]</b> 122/17</p> <p><b>trials [5]</b> 18/8 101/12 101/17 106/20 106/23</p> <p><b>tried [6]</b> 30/17 31/9 84/5 100/24 109/4 110/8</p> <p><b>Triger [1]</b> 86/7</p> <p><b>trigger [1]</b> 44/18</p> <p><b>triple [2]</b> 29/21 31/4</p> <p><b>troubling [1]</b> 121/7</p> <p><b>trust [5]</b> 12/8 57/18 58/5 60/20 60/23</p> <p><b>trusts [2]</b> 122/16</p>	<p>123/18</p> <p><b>try [10]</b> 12/14 31/10 65/15 66/24 69/1 78/12 88/11 92/4 97/19 110/21</p> <p><b>trying [8]</b> 7/8 24/21 47/6 54/22 67/8 80/2 91/3 116/10</p> <p><b>Tuesday [2]</b> 119/23 124/11</p> <p><b>turn [2]</b> 8/25 123/23</p> <p><b>turned [2]</b> 12/1 73/24</p> <p><b>turns [23]</b> 1/24 3/16 17/14 20/11 20/24 25/12 26/9 30/12 35/20 42/14 53/13 67/17 70/9 85/7 86/9 94/3 106/22 107/23 109/25 110/4 111/6 120/22 123/12</p> <p><b>two minutes [1]</b> 1/24</p> <p><b>two years [1]</b> 94/3</p> <p><b>type [9]</b> 3/15 5/13 6/13 7/9 8/9 8/12 9/24 26/25 100/19</p> <p><b>types [2]</b> 12/9 106/8</p> <p><b>typically [3]</b> 19/1 20/4 83/24</p> <p><b>U</b></p> <p><b>UK [15]</b> 6/3 8/13 9/9 9/21 11/5 55/2 55/14 56/18 56/21 57/5 60/25 55/9 81/5 95/7 113/14</p> <p><b>UKHCDO [25]</b> 3/22 5/25 6/2 7/14 8/5 9/18 10/3 11/22 27/23 51/23 52/12 54/5 60/18 67/7 73/21 74/23 78/5 78/18 80/19 92/21 94/6 94/9 99/8 99/10 99/19</p> <p><b>uncertain [3]</b> 23/20 47/25 89/6</p> <p><b>under [7]</b> 18/3 34/12 42/19 69/9 78/24 92/2 100/20</p> <p><b>underestimate [1]</b> 23/23</p> <p><b>undergoing [1]</b> 31/15</p> <p><b>underplayed [1]</b> 23/14</p> <p><b>understand [11]</b> 7/12 14/11 14/18 15/7 38/21 66/11 74/20 89/10 90/21 99/10 123/11</p> <p><b>understanding [10]</b> 9/8 44/17 44/17 50/7 56/14 58/14 90/1 96/25 99/4 109/22</p>	<p><b>understood [2]</b> 58/25 86/12</p> <p><b>undertake [3]</b> 6/12 54/18 66/23</p> <p><b>undertaken [10]</b> 3/14 10/5 13/6 14/12 14/24 32/11 40/2 42/22 52/3 52/14</p> <p><b>undertaking [2]</b> 64/25 65/23</p> <p><b>Underwood [1]</b> 86/7</p> <p><b>unfortunate [1]</b> 83/6</p> <p><b>unified [1]</b> 74/22</p> <p><b>unify [1]</b> 92/5</p> <p><b>union [3]</b> 4/6 73/8 79/7</p> <p><b>unions [4]</b> 69/7 73/2 76/1 76/7</p> <p><b>unit [12]</b> 18/12 20/17 31/6 37/24 43/22 44/3 62/11 63/14 85/11 86/23 97/17 115/24</p> <p><b>United [1]</b> 109/10</p> <p><b>United Kingdom [1]</b> 109/10</p> <p><b>units [1]</b> 90/22</p> <p><b>universal [1]</b> 88/25</p> <p><b>university [1]</b> 61/21</p> <p><b>unknown [1]</b> 65/16</p> <p><b>unrelated [1]</b> 35/8</p> <p><b>unreliable [1]</b> 116/19</p> <p><b>unsolved [1]</b> 35/21</p> <p><b>until [9]</b> 25/4 41/12 55/25 57/9 59/16 100/16 102/21 123/9 124/11</p> <p><b>untreated [1]</b> 13/24</p> <p><b>unusual [1]</b> 73/17</p> <p><b>up [41]</b> 2/11 11/10 12/4 17/20 18/21 20/2 20/24 23/7 24/3 28/24 30/13 31/22 36/7 38/21 39/5 39/9 41/2 43/11 43/24 51/22 52/10 68/16 73/24 74/2 74/14 83/4 84/11 90/13 90/21 91/3 94/12 97/9 97/24 98/20 102/21 104/24 105/5 109/4 114/14 118/13 119/11</p> <p><b>up-to-date [3]</b> 24/3 38/21 39/5</p> <p><b>update [1]</b> 36/19</p> <p><b>updated [2]</b> 10/17 12/11</p> <p><b>updates [1]</b> 37/24</p> <p><b>upon [4]</b> 22/17 89/25 105/21 118/4</p> <p><b>us [23]</b> 1/19 1/25 3/17 16/7 37/18 62/3 62/5 68/13 76/18 83/19</p>	<p>88/17 90/16 93/24 104/9 105/13 108/13 111/8 112/23 119/5 119/10 119/12 119/15 121/13</p> <p><b>use [19]</b> 23/3 24/12 24/14 25/3 25/7 25/16 25/22 28/9 48/10 62/23 91/12 93/4 95/3 95/13 105/18 106/2 106/7 107/18 107/25</p> <p><b>used [12]</b> 10/25 22/20 49/24 50/21 55/7 63/20 64/3 65/12 67/1 99/14 107/20 108/1</p> <p><b>useful [3]</b> 4/13 88/10 89/11</p> <p><b>users [2]</b> 28/13 28/19</p> <p><b>using [2]</b> 11/21 95/12</p> <p><b>usual [1]</b> 73/18</p> <p><b>usually [2]</b> 84/8 106/18</p> <p><b>V</b></p> <p><b>valid [1]</b> 66/16</p> <p><b>validated [1]</b> 118/9</p> <p><b>valuable [1]</b> 121/7</p> <p><b>variable [2]</b> 104/25 105/6</p> <p><b>variation [1]</b> 90/24</p> <p><b>variations [1]</b> 89/2</p> <p><b>varied [2]</b> 59/2 71/14</p> <p><b>various [4]</b> 4/8 34/25 42/17 43/14</p> <p><b>vCJD [6]</b> 53/11 53/18 53/25 55/2 55/5 55/5</p> <p><b>vector [1]</b> 43/2</p> <p><b>verbal [1]</b> 40/12</p> <p><b>verify [1]</b> 82/11</p> <p><b>versa [1]</b> 117/23</p> <p><b>very [91]</b> 1/16 3/1 8/4 8/16 8/19 9/11 9/17 10/14 12/4 14/1 15/22 18/6 18/11 18/21 19/24 25/25 26/10 27/18 28/2 28/15 29/6 29/9 29/10 29/22 32/13 32/15 35/4 40/6 44/11 44/20 44/22 45/8 47/2 47/8 47/11 47/24 48/10 50/24 53/10 55/1 56/9 56/14 62/1 62/13 63/4 63/23 66/4 66/16 67/22 71/1 73/19 74/24 76/21 77/3 77/17 77/23 78/1 78/16 80/7 82/16 84/6 84/23 85/6 87/25 89/7 89/18 93/5 93/8 93/17 96/11 97/2 97/15 97/15 98/5 107/8 107/10 108/22 109/9</p>	<p>110/7 110/10 110/12 110/18 111/20 113/1 117/6 117/8 117/12 118/1 118/17 120/18 123/25</p> <p><b>vessels [1]</b> 104/19</p> <p><b>vial [2]</b> 90/21 90/22</p> <p><b>vials [2]</b> 56/2 59/2</p> <p><b>vice [1]</b> 117/23</p> <p><b>view [10]</b> 7/16 58/20 64/4 70/12 70/24 72/12 76/19 76/20 78/10 82/13</p> <p><b>viewed [1]</b> 81/25</p> <p><b>views [1]</b> 76/8</p> <p><b>vigorously [1]</b> 28/15</p> <p><b>VIII [18]</b> 42/8 42/13 47/24 48/12 49/23 49/24 50/20 50/21 53/17 90/19 104/9 104/22 105/4 109/24 110/2 110/20 112/9 112/19</p> <p><b>viral [4]</b> 26/25 43/6 99/21 100/12</p> <p><b>virally [1]</b> 18/19</p> <p><b>virologist [1]</b> 116/18</p> <p><b>virus [15]</b> 5/5 7/10 8/23 11/10 11/14 13/9 19/5 19/25 39/19 45/5 47/23 108/25 109/8 113/4 122/9</p> <p><b>virus-safe [1]</b> 109/8</p> <p><b>viruses [1]</b> 14/8</p> <p><b>visible [1]</b> 123/8</p> <p><b>visit [2]</b> 15/20 22/11</p> <p><b>Vivienne [1]</b> 8/8</p> <p><b>von [4]</b> 104/9 104/20 105/4 107/21</p> <p><b>von Willebrand [1]</b> 104/20</p> <p><b>von Willebrand's [1]</b> 107/21</p> <p><b>W</b></p> <p><b>Walker [11]</b> 23/22 62/1 62/6 62/13 62/24 75/7 84/17 85/15 92/2 92/3 108/17</p> <p><b>want [31]</b> 1/21 1/24 4/2 5/6 10/13 10/16 10/21 10/22 13/22 15/4 17/7 18/2 18/23 26/15 32/6 36/16 36/24 36/25 40/15 45/2 45/24 57/5 59/20 64/16 68/10 73/7 82/18 85/4 89/17 95/21 99/18</p> <p><b>wanted [22]</b> 3/21 15/17 29/10 35/20 39/14 46/8 50/9 52/24</p>
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<b>W</b>	117/22	117/16 117/18 119/1	24/13 24/24 25/1	<b>window [1]</b> 118/2	<b>years [30]</b> 5/5 10/19
<b>wanted... [14]</b> 53/13	<b>welcome [1]</b> 15/22	119/11 119/14 119/20	25/13 25/20 28/12	<b>wish [2]</b> 79/13 109/13	11/17 17/15 20/20
58/17 58/25 75/18	<b>welcomed [2]</b> 69/6	119/22 120/7 121/15	28/13 28/19 30/11	<b>wishing [1]</b> 124/7	21/11 21/25 22/1 22/7
76/10 82/23 83/1 83/4	121/24	123/12	30/13 31/7 33/16 35/7	<b>with [169]</b>	25/2 25/14 29/21
89/13 101/16 104/11	<b>well [82]</b> 1/19 3/24	<b>whenever [1]</b> 15/5	36/8 37/10 37/11	<b>within [8]</b> 32/24 49/1	30/13 30/21 34/3
118/7 118/23 121/21	3/25 4/17 4/18 4/22	<b>where [8]</b> 2/11 4/1	37/13 38/4 38/9 41/16	52/11 60/22 85/16	36/19 42/14 51/5 55/4
<b>ward [2]</b> 91/21 98/16	4/23 5/3 7/5 7/21 8/4	23/19 31/23 46/21	45/10 45/14 47/16	97/7 100/23 122/24	62/9 80/13 82/23
<b>wards [1]</b> 40/8	8/22 10/8 10/15 16/24	95/5 115/9 117/19	50/7 50/11 52/22	<b>without [4]</b> 24/14	86/20 88/13 88/19
<b>warning [2]</b> 114/14	17/19 25/18 26/7	<b>whereabouts [1]</b>	53/25 54/2 55/17 56/6	105/15 120/25 121/5	94/3 109/1 112/12
115/10	26/14 26/17 29/25	65/15	57/1 57/15 61/14	<b>WITN3469013 [1]</b>	112/23 120/22
<b>was [427]</b>	32/2 36/22 37/10	<b>Whereas [1]</b> 8/21	61/15 62/2 62/20	104/4	<b>years' [1]</b> 2/1
<b>was English [1]</b> 77/22	37/15 38/11 39/9 40/5	<b>whereby [2]</b> 14/14	66/24 67/2 69/2 78/9	<b>WITN3496013 [1]</b> 24/8	<b>yes [40]</b> 3/21 5/24 8/2
<b>was issuing [1]</b> 45/18	41/12 45/14 45/16	93/22	78/23 78/25 79/7	<b>witness [3]</b> 24/7 69/20	10/2 11/7 12/19 12/24
<b>was: [2]</b> 88/15 111/19	45/23 46/23 47/6	<b>wherever [1]</b> 102/15	79/19 84/7 88/17 91/8	71/1	13/8 14/25 15/12
<b>was: before [1]</b> 88/15	52/18 55/11 55/19	<b>whether [27]</b> 2/15	91/13 91/24 92/14	<b>witnesses [4]</b> 89/10	17/18 30/1 31/18 48/8
<b>was: what [1]</b> 111/19	57/4 57/11 58/11	11/13 38/4 43/6 47/23	93/21 94/15 95/18	121/22 121/25 122/22	52/17 52/25 57/18
<b>wasn't [24]</b> 5/21 6/24	58/22 58/24 62/1	48/2 48/19 48/25	95/22 96/6 98/7 98/23	<b>won't [2]</b> 45/9 77/14	58/2 60/4 61/13 67/1
8/14 14/13 23/15 25/4	62/15 68/21 73/15	49/24 50/10 52/2	98/24 101/4 108/23	<b>wondered [4]</b> 2/15	69/4 70/5 74/23 80/18
29/1 38/12 38/13	77/17 79/16 79/23	52/13 65/8 65/13	110/17 112/17 112/18	3/19 66/5 69/13	81/1 81/22 85/5 86/9
44/15 45/19 46/23	82/15 84/18 85/4	66/13 69/13 75/1 76/1	118/19 122/23 122/25	<b>wondering [2]</b> 8/8	87/6 90/8 90/9 98/2
50/16 76/9 79/24	85/24 86/10 87/24	76/15 87/4 90/24	124/1	114/15	99/4 103/9 103/15
80/19 80/19 86/25	89/4 92/18 95/3 95/9	92/25 95/25 97/21	<b>who'd [2]</b> 97/25 98/8	<b>Wong [1]</b> 32/2	103/20 103/21 108/4
91/20 98/23 100/15	95/12 95/16 96/3 97/7	99/6 100/18 106/14	<b>whoever [4]</b> 29/10	<b>words [3]</b> 14/6 19/7	111/15
112/2 115/6 117/10	97/9 98/12 98/21	<b>which [102]</b> 2/6 3/6	91/10 97/3 124/5	103/25	<b>yes --in [1]</b> 103/20
<b>watch [4]</b> 107/3 107/5	100/2 101/18 102/8	4/6 5/17 6/22 7/16	<b>whole [6]</b> 14/2 93/25	<b>work [15]</b> 40/2 47/6	<b>yesterday [14]</b> 17/3
109/3 109/9	102/19 103/23 107/20	7/24 9/13 10/25 12/2	104/22 109/10 113/10	47/8 51/5 63/14 85/24	20/25 23/18 35/12
<b>watching [4]</b> 1/5 1/5	108/13 108/24 109/14	12/8 13/18 13/25	115/8	94/4 94/5 97/19	67/16 82/6 90/14 91/7
1/17 108/20	110/15 112/22 113/14	15/10 15/24 18/18	<b>whom [5]</b> 24/11 32/2	104/13 104/14 112/12	94/2 94/24 95/2
<b>way [10]</b> 6/22 13/12	114/9 117/18 122/5	18/19 19/5 20/24	42/13 83/25 107/14	123/8 123/9 123/13	100/17 116/12 117/6
16/14 50/14 104/14	123/19	26/24 27/9 31/23	<b>whose [4]</b> 1/10 47/15	<b>worked [3]</b> 61/15	<b>yesterday's [2]</b> 20/15
111/14 112/16 116/18	<b>went [2]</b> 28/22 70/23	32/10 36/5 36/20 37/4	65/15 75/5	61/23 107/4	35/14
119/6 124/8	<b>were [172]</b>	38/25 39/13 39/20	<b>why [20]</b> 2/20 5/20	<b>workers [1]</b> 109/6	<b>yet [4]</b> 50/1 95/15
<b>ways [1]</b> 121/14	<b>weren't [3]</b> 47/13	40/6 40/16 42/1 44/23	5/24 25/13 45/8 46/8	<b>working [9]</b> 55/10	98/25 123/21
<b>we [367]</b>	82/12 119/11	46/2 48/2 48/22 50/13	73/1 73/25 75/10	55/10 72/8 82/12	<b>yield [1]</b> 43/4
<b>we'll [4]</b> 2/7 12/14	<b>Wessex [2]</b> 70/6	50/15 53/5 53/24 55/8	75/25 76/24 77/15	88/18 93/20 94/3	<b>Yorkhill [2]</b> 41/14
23/2 105/25	70/11	55/11 55/14 58/5 59/1	81/5 84/1 94/23	106/25 115/23	41/19
<b>we're [25]</b> 4/12 4/24	<b>west [2]</b> 34/2 61/19	60/21 60/23 61/23	113/12 114/3 115/5	<b>works [1]</b> 109/23	<b>you [419]</b>
4/24 4/25 5/4 5/7 6/11	<b>whammy [1]</b> 108/21	62/21 65/10 65/21	115/6 121/17	<b>world [2]</b> 90/4 103/1	<b>you'd [1]</b> 99/18
7/9 7/21 9/20 10/10	<b>what [172]</b>	67/1 67/4 69/8 70/10	<b>widely [1]</b> 94/6	<b>worry [1]</b> 23/16	<b>you'll [2]</b> 10/2 67/24
15/17 23/17 26/17	<b>what's [3]</b> 52/7 74/2	71/21 72/9 72/24 73/5	<b>Wilkie [2]</b> 17/5 52/21	<b>would [209]</b>	<b>you're [13]</b> 15/2 15/21
36/17 47/2 47/8 60/5	113/19	75/20 76/7 78/25 79/5	<b>will [44]</b> 2/3 7/7 8/25	<b>wouldn't [4]</b> 103/15	19/16 49/7 66/21 77/7
82/18 95/12 96/10	<b>whatever [8]</b> 25/15	80/6 81/13 81/20 82/7	9/4 10/16 15/19 15/21	113/2 114/10 114/12	79/16 113/14 114/22
98/12 113/16 116/4	47/7 99/11 102/2	85/18 88/5 90/5 90/6	16/25 19/14 22/14	<b>write [5]</b> 14/21 15/13	117/11 117/21 118/11
120/11	109/24 112/19 121/2	90/19 92/7 92/22 93/2	23/6 23/6 23/7 23/25	16/15 71/6 72/16	119/13
<b>we've [23]</b> 4/19 7/6	124/8	93/20 94/8 94/20	24/3 24/5 41/25 42/2	<b>writing [5]</b> 14/19 39/9	<b>you've [9]</b> 33/16 85/6
7/13 8/22 18/10 19/16	<b>whatsoever [1]</b> 39/8	94/21 97/23 103/2	43/10 47/7 47/23	43/24 54/15 121/6	93/20 98/11 100/19
21/6 22/5 23/20 36/22	<b>when [67]</b> 4/3 5/1 6/11	104/8 104/19 104/21	51/25 59/16 82/5 89/5	<b>written [16]</b> 11/2	105/20 107/14 108/25
53/20 57/12 58/21	6/14 8/4 9/3 11/1	106/18 109/1 110/2	102/3 109/13 119/22	11/25 14/12 17/24	119/12
83/23 88/2 89/15 94/8	11/19 13/4 14/23 15/6	111/3 111/7 111/8	119/25 120/3 120/6	18/14 20/9 29/23	<b>your [81]</b> 1/14 5/23
102/8 116/2 116/10	16/10 16/12 17/3 17/5	112/7 112/11 112/11	120/9 120/14 120/16	40/12 41/22 43/23	5/23 6/16 12/15 13/1
116/23 119/5 122/2	18/5 19/17 20/8 24/13	113/1 113/7 113/23	121/21 122/5 122/7	54/25 55/12 60/12	14/11 14/17 14/22
<b>website [1]</b> 120/16	26/13 27/19 28/14	114/4 114/11 115/21	122/10 122/12 122/19	61/13 63/11 87/13	15/7 15/20 15/22 17/1
<b>Wednesday [2]</b> 81/10	30/18 31/9 32/13 37/4	117/7 122/7 124/3	123/3 123/5 123/11	<b>wrong [2]</b> 6/21 53/9	17/12 18/3 20/3 22/23
119/25	40/2 40/20 44/14	<b>whichever [1]</b> 97/11	124/7	<b>wrote [6]</b> 20/24 40/20	23/13 24/7 24/15 26/5
<b>week [13]</b> 33/6 45/6	45/20 55/3 56/16	<b>while [4]</b> 66/3 70/14	<b>Willebrand [3]</b> 104/9	52/4 53/4 58/21 91/3	28/10 30/8 31/15
50/24 51/18 64/15	57/16 59/4 62/5 82/10	77/25 123/10	104/20 105/4	<b>Y</b>	36/16 36/25 36/25
111/21 112/5 114/12	83/14 84/7 84/11 85/1	<b>whim [1]</b> 122/9	<b>Willebrand's [1]</b>	<b>year [14]</b> 2/18 21/19	37/16 37/18 37/20
119/2 119/24 120/4	85/3 86/1 86/16 90/17	<b>who [86]</b> 1/5 1/5 1/9	107/21	22/24 22/25 35/25	38/2 39/1 40/18 41/20
120/7 120/25	92/3 93/4 95/11 95/17	1/18 8/8 8/10 9/15	<b>Willoughby [2]</b> 41/6	55/20 56/10 59/5 85/7	41/24 43/17 44/17
<b>weekends [1]</b> 63/16	96/7 96/22 99/24	12/1 12/4 12/15 13/20	41/16	115/11 120/20 120/20	44/17 45/24 46/2
<b>weeks [2]</b> 63/10	101/11 111/5 113/21	16/3 17/6 17/20 17/21	<b>Willoughby's [1]</b>	123/24 124/3	48/24 48/24 50/2
	116/5 116/13 116/16	19/1 21/22 24/1 24/10	41/13		51/17 52/10 54/22

**Y**

**your... [35]** 58/14  
58/16 58/17 61/10  
64/16 79/16 79/18  
81/10 82/8 82/10  
82/13 85/8 87/12  
87/13 94/2 94/24  
96/24 104/3 105/21  
106/1 107/23 108/9  
109/12 110/23 111/1  
119/5 119/6 119/6  
119/8 119/9 119/10  
119/16 119/16 121/2  
121/20  
**yourself [3]** 32/9  
32/10 53/20  
**yourselves [2]** 29/25  
121/3

**Z**

**Z8 [1]** 18/19  
**Z8 products [1]** 18/19  
**zoom [3]** 2/9 34/7  
43/13