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R V ANDRE CHAD PARENZEE

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RESUMING 10.22 A.M.

MS MCDONALD: Just an update in terms of the logistical matters. Overnight, I managed to reschedule Professor Cooper.

HIS HONOUR: Yes.

MS MCDONALD: For Friday, the 3rd I think it is. That's the second Friday in that two week block. He is no longer slotted in for tomorrow so that gets rid of that problem.

The second matter relates to the cross-examination of the two defence witnesses. Overnight we have endeavoured to try and locate as many of the studies that have been referred to, and apparently cited from, during the course of PowerPoint yesterday. We haven't been particularly successful. It's very difficult to locate a lot of them and I've asked my learned friend this morning that the witnesses produce copies of the tests that they rely on for the purpose of their evidence.

For example, your Honour will recall yesterday there was reference to two studies in 2006. One of those we can obtain but it will involve a physical trip to the Flinders Library which we obviously haven't been able to do overnight, so we are facing some fairly significant logistical problems in the absence of those studies.

What I'm really foreshadowing, it will be my application, when the expert has finished today, not to commence cross-examination until tomorrow morning. Even then it is far from desirable but I would have thought by tomorrow morning we would have cobbled something together so that we can do the respondent's case some

justice. I raise it at this stage so that your Honour knows what the application will be at the end of the evidence today.

HIS HONOUR: Thank you.

MR BORICK: I spoke to my friend about this this morning and it's my view that she has no possible hope of being ready to cross-examine tomorrow morning. It is not necessarily her fault. You've already made the observation of ships passing in the night, between what our experts were saying and the expert reports that were handed in.

I know how long it's taken me to get an understanding of this and your Honour has seen it for the first time yesterday. You would appreciate it's not going to be something that will happen overnight to get this cross-examination ready.

Ms McDonald is going to need to look at some of the background material she has just referred to. That's against the background that both of the defence experts are busy people. I've given them a sort of undertaking, as best I could, that the case would be starting Monday, all Monday, Tuesday and they should be ready to get back to Perth today.

It's a little bit unusual for the defence to be saying that the prosecution are going to need more time. From a practical point of view, both Ms Eleopoulos and

Dr Turner would very much like to return to Perth today and then I envisage that we will have to fix then, sometime in the future - November/December - for the cross-examination to take place. That could be done by a video link-up back in Perth.

My client's mother is not happy about that. The other important point your Honour raised yesterday, we have got the job of making sure that this is in a proper order for the Full Court, if your Honour gives leave to appeal. By the way, I don't see any reason why you shouldn't sit in that court when you have undertaken this exercise.

So, given the desire and necessity of having it right for the Full Court and the fact that my friend will need more time, it would be my application that we adjourn to a convenient date that we fix to do the job properly. I don't know what your Honour thinks about that. Perhaps we could wait until the evidence is finished. I certainly don't expect her to start cross-examining today.

HIS HONOUR: Can I say this, and I don't say this with any criticism of any individual or any of the witnesses: it's just a bit unfortunate that the material upon which the witnesses are relying - the underlying material, that is, the papers etc. - were not provided but anyway, that's water under the bridge.

MR BORICK: May I just respond to that? It's important that I do.

HIS HONOUR: Yes.

MR BORICK: It was very clear in the affidavits provided and from the annexures, the outline of argument, what our basic propositions were. I don't expect your Honour or my learned friend to fully appreciate the underlying evidence, all about which you heard yesterday but it was absolutely clear to the five expert witnesses employed by the prosecution.

One of the reasons for that is that in 1993 I think it was, every single bit of information which you've

heard yesterday was published in an international scientific journal. They must have known about it. We worked on the assumption that the five experts must have known about this debate which has been raging in the scientific world, not the public world.

They knew about it and elected to give advice on the issue of: does HIV cause AIDS, which we never raised, so we worked on an assumption that the experts would have been giving the prosecution the proper advice. At the same time, we were working on our presentation, mainly to get it into my head and to get it in the proper order for your Honour and so it is not fair, in those

circumstances, to suggest that we should have done something earlier.

HIS HONOUR: I didn't say that. I just said it was unfortunate that the information wasn't provided. I prefaced my remarks by saying 'I don't make any criticism of you or of your witnesses or of the experts'. It's just unfortunate we have just got to this stage of affairs. It's water under the bridge.

MR BORICK: I agree.

HIS HONOUR: And we have to get on with it as best we can.

MR BORICK: The overarching thing is to make this right for the Full Court. I think you agree with that.

HIS HONOUR: Absolutely. We will certainly continue with your evidence and complete all of that and Ms McDonald, once that's completed, perhaps we will revisit the question of where we go from there.

MS MCDONALD: Yes.

HIS HONOUR: I gather that the material that the doctor is referring to, which was supposed to have been supplied to you this morning or overnight, hasn't been supplied to you for one reason or another.

MS MCDONALD: No.

HIS HONOUR: Do you need it at this stage?

MS MCDONALD: No, particularly if I'm not cross-examining today.

+VALENDAR FRANCIS TURNER CONTINUING

HIS HONOUR

Q. Dr Turner, can those notes to which you're referring and those documents to which you're referring that we spoke about yesterday, where copies were going to be provided to defence, can that be done when you've completed your evidence obviously.

A. Certainly I didn't do it because I hadn't finished.

Q. In the system - again I don't say this as any criticism of you - in the system that we work under, normally all the material upon which a witness relies is provided to the other side so that they can study it before you give

your evidence, rather than after you've given your evidence, but anyway, be that as it may, if it can be supplied as soon as possible.

A. Certainly.

MR BORICK: I've been trying to explain our system to the experts.

HIS HONOUR: Put in very plain terms, we don't have trial by ambush. We have trial by disclosure, so everything is disclosed beforehand, particularly when it's expert evidence. Cross-examiners - you're talking to a lawyer who has to ask you questions. That lawyer has to get information from some of her experts so she can ask you some questions. If she hasn't got the material which you're relying on, it is very difficult.

A. I apologise -

HIS HONOUR: I don't ask you to apologise. I'm just explaining that that's how it works. So be it. Let's get on with the presentation and then we will cross the next bridge when we come to it.

+EXAMINATION BY MR BORICK

Q. You're up to slide 19, I think.

A. I'm actually up to slide 20. With your permission, I'd just like to start with slide 19, just to remind the court what I was actually talking about yesterday. The actual bit we stopped at, that was the notion that, as on the slide, that the immunologists were quite shocked

to find that antibodies that they thought reacted specifically, in fact reacted with many different antigens ostensibly unrelated to one another. The word 'promiscuous' is not the word. It is the word used by John Marcionus who wrote the paper at the bottom of the slide. Slide 20. This is some evidence to support the statements that these people have made. This slide is two antibodies, E7 and D23. The M stands for monoclonal. What monoclonal means is that the antibody is all one molecule. I said yesterday in my opening that antibodies are made by B cells. Each B cell and its clones only made one unique antibody molecule so

these reactions which you can see are in fact multiple. They are not caused by a mixture of antibodies. E7 is just the one molecule and so is D23. You can tell from this slide, unlike a three-pointed star which I showed yesterday, there was no one-to-one relationship between either of the antibodies and the antigens which are listed down the side which are all chemically dissimilar. So, for example, E7 reacts with Actin and also reacts with Myosin and other named antigens here.

Q. Before you go on, you've used the expression 'binding' at the top. I'm not sure if you've explained what that meant.

A. It just means Actin chemically combines. This is what I did yesterday with the fist and the open hand. It's that metaphorically. In this slide I just want to illustrate - slide 21 - I just want to illustrate. Imagine that you're a person doing serology for a living and you come to work one day and you're looking for an antibody to Actin and so you add some serum to Actin in a test tube and you see a reaction and you say 'I found an antibody to Actin' but someone else might come to work the next day and find that the antibody also reacts with Renin. Then you find another serum here that reacts with Renin as well, so you can't identify the antibody from what it reacts with. If all this sounds complicated, let me illustrate what I'm talking about

with some kitchen chemistry. This is something people could do with their children or grandchildren if they are interested in science. If you add a teaspoon of lemon juice to milk, it curdles and if you add a teaspoon of vinegar to milk, it curdles and it occurs because there is a chemical reaction with those substances. But when you look at curdle, you can't tell which one you added if all you get is curdle. If you turn around and hide and do it without the child seeing and say 'What did I add?', they can't tell you because it reacts with both. That's the point I'm trying to make. This means that just because you find an antibody

in blood that reacts with a particular antigen in testing, does not prove the antigen caused the antibody. There is always room for doubt. Although it does not mean that, sometimes antibodies don't react specifically. They may and if you're setting up an antibody test for something that's highly propitious, the problem is: how do you prove it in any particular case? How do you find out? How do you know? Slide 22, please. I'm going to talk about the problem of proving antibody test specificity. It doesn't have to be an antibody test. It could be any test you dream up. I'm going to talk about the pregnancy test, just to talk about the general problem of how you approach this problem. The pregnancy test happens, coincidentally, to be an antibody test. In the old test it was injecting urine into frogs to see if they ovulated 50 years ago but the same principles apply. Everyone knows it might have been more than 50 years ago. I'm not sure. Every doctor knows and probably every patient knows that pregnancy tests can be misleading. Women who are into advanced pregnancy can have a negative pregnancy test and women who are not pregnant could have a positive pregnancy test and there are situations when a man could have a positive pregnancy test. When you test a woman, there are only four possibilities. She can be pregnant and have a positive test and that's called a true

positive and she can be pregnant and have a negative test which is a false negative. She can be not pregnant and have a positive test which is a false positive or she can be not pregnant and have a negative test which is called a true negative and these names on the right-hand side are called the test parameters. There are two factors to appreciate here. In an ideal pregnancy test, all the numbers would fall into 1 and 4. All women who are pregnant would have a positive test and all women who are not pregnant would have a negative test. In the real world, it is different. Sometimes you get two and three which make it less specific. If

you get a false positive you know the test can't be specific. The question is: how do you determine these parameters and thus work out how much trust you can place in a test? So that brings us to a second factor. Before we have evaluated the test, we have to have some method of knowing for sure whether the woman is pregnant or not and this method must be an independent test and you can't use a test to test itself. That's cheating, so we call that independent method the gold standard because it's going to tell us whether it's true or false that the woman is pregnant. And it is against this certain knowledge that we compare our test results and obtain our numbers, and whatever numbers arise, they can only be as good as the gold standard and they can only relate to the gold standards. So we want the most accurate, unambiguous standards for gold standard as possible, so we think: what could that be? First up, we might consider using the woman's clinical state. We all know that women who are pregnant stop having periods. They get urinary frequency. They get nausea. They gain some weight and we might think that is a gold standard for pregnancy but, sooner or later, that won't work because these symptoms, even when they occur together, have multiple causes. Slide 24.

HIS HONOUR

Q. 24 talks about the gold standard.

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A. Let's go back one slide. Eventually becomes the realisation that the gold standard for a pregnancy test is having a baby or not having a baby. That's what it is, and it is against that that you use - we check our results, basically. That's how we check. So we find out the weight, we find out how many women have babies and who don't have babies and we apply those results and we apply our test results in light of that knowledge. It is independent and unambiguous. Now, the same principle applies to the evaluation of any diagnostic test. You must compare your test with a gold standard that best represents the energy you are testing for. We know the aim in HIV infection is to prove the person is infected with HIV. In this instance we can think of HIV as the baby. So we want a gold standard for HIV infection against which we can find out whether the antibody infection we can see really is caused by HIV and not caused by something else. Now, what can that be, and I put it to your Honour, it can only be HIV. Diagnosing HIV is the reason for doing the test and the only answer for HIV is it is HIV as determined by HIV isolation. However, when we search the literature, it is apparent that experiments comparing HIV antibody tests with HIV isolation have never been reported, and in our view, as was explained yesterday by my colleague Eleni Papadopulos-Eleopulos, it cannot be performed

because of all the problems which she raised. Next slide please, which is 24. AIDS HIV experts themselves report and acknowledge there is no gold standard for the HIV antibody tests. Dr William Blattner was a retrovirologist in viral infections of humans. According to him, one difficulty in assaying the specificity and sinsitivity of human retroviruses, including HIV, is the absence of a final gold standard. Slide 25, manufacturers of antibody tests admit there is no gold standard. Here one manufacturer repeatedly includes in the kit packet insert, and they write, 'At present there is no recognised standard for establishing

the presence or absence of HIV-1 antibody in human blood'. I have a copy of the packet insert. I'm not sure whether I should present it to the court or whether it should go in as evidence or what, so please advise me.

MR BORICK: Unless there is any objection, I will tender it.

MS MCDONALD: No objection.

HIS HONOUR: Just give it to my associate. What happens now is it gets a number and it becomes an exhibit in the case.

A. Right. Your Honour, it is difficult to find the spot but it is there.

HIS HONOUR: The document that is being tendered, do you want to have a look at it, Ms McDonald, at this stage?

MS MCDONALD: Not really.

EXHIBIT #A7 DOCUMENT ENTITLED HIV-1/HIV-2 HUMAN IMMUNODEFICIENCY VIRUSES (HIV-1/HIV-2): (RECOMBINANT ANTIGENS AND SYNTHETIC PEPTIDES) TENDERED BY MR BORICK. ADMITTED.

HIS HONOUR

Q. If you could find the relevant part to which you are referring of that document once I have marked it.

A. Do I do that at the end of my evidence?

Q. Just if you could mark it on the document.

A. It will take me a while to find it right now as well, so can I actually do that at the end?

Q. Perhaps we will have a morning break later on and you can do it during the morning break if you like.

A. Slide 26, according to Dr Phillip Mortimer, Director of the Sexually Transmitted and Blood Borne Virus Laboratory in the United Kingdom, 'Diagnosis of HIV infection is based almost entirely on detention of antibodies to HIV, but there can be misleading cross-reactions between HIV proteins and antibodies formed against other proteins, and these may lead to

false positive reactions. Thus, it may be impossible to relate an antibody response specifically to HIV infection'. So this means if someone has a positive antibody test, according to Dr Mortimer, we can't be sure that it is caused by HIV infection. Slide 27. So there are a number of caveats which I have highlighted on the slide: no recognised standard; absence of a final gold standard; misleading cross-reactions; false positive reactions; impossible to relate specifically to HIV infection. Yet, these tests are presented as being extraordinarily accurate.

Q. Putting aside HIV for a moment, there are numerous tests that are done for varying diseases. I don't necessarily know all the medical answers but in respect of a number of those tests, they would not be 100% accurate, would they.

A. No.

Q. A lot of tests that are conducted are not 100% accurate, are they.

A. No, not even x-rays, as I said yesterday.

Q. So all that this has established so far - and please correct me if I am wrong - is that these tests are not 100% accurate.

A. No, I'm trying to establish the fact that because antibodies cross-react, it is up to the person who presents these tests to prove their specificity. It

could be 100% or it could be no per cent. There has got to be a way of finding out. You can't just make it up. You have to have some data to know that, and to do that you have to have some means of knowing what you are looking for, which is not the test. I mean, maybe I could explain it using another example. In clinical medicine there is a disease called pulmonary embolism where clots in your legs travel to your lungs and may cause you great harm. They may kill you, and the best way to diagnose this condition is to do a pulmonary angiogram. We put die in the pulmonary artery and we look and see if there is clots there. That is a pretty

unkind thing to do with people. It is very invasive and in sick people it can make it worse. There is also lung scanning where you put radioactive material in the lungs where you see from counter-radioactivity in the lungs where there are, in fact, defects which could be caused by a pulmonary embolism. There is a lot of problems with those sorts of tests because you get problems with people with lung disease, for example. They are hard to interpret but the way that they are appraised is someone at some stage has compared them with ordinary angiography. The same is done with coronary artery disease. If you have a middle age male with chest pain and you give him treatment, they put the ECG leads on you and they see if there is some abnormality in the ECG while you are exercising. Then, what you are trying to find out is whether the ECG abnormality that you get when you have a stress test - I assume your Honour knows about this, about stress tests. Not from personal experience, I hope.

Q. I think I do, and I think I might know them from personal experience. One of the reasons you started later was my personal experience with an angiogram.

A. I've actually had an angiogram and heart surgery myself, so I sympathise, but the ECG abnormality can be caused by all sorts of things which are not necessarily blocked coronary arteries. So this stress testing has, in fact,

been validated by the gold standard of actually doing angiograms on people who have had a stress test to find out what abnormality in these tests predict whether you have a blockage or not. So having a coronary angiogram is totally unrelated to having an ECG, which is just recording electrical impulses from your body. There is very little connection. They both involve the heart. That is what I'm trying to get across. In your question about the test being accurate, the test is here and the thing you are trying to find is here. You somehow have to match these up, those four possibilities, and they apply to all tests. All those parameters apply to all

tests, it doesn't matter what the tests are, to see how good they are. The point that I have just made, I hope, is that the gold standard for HIV infection is HIV, the virus test. So, to find out if these antibody tests do, in fact, detect the virus and how reliable they detect the virus, if they detect the virus at all, is to actually do this experiment, and we say that this has never been reported because of the great problems reporting it, because of what Eleni Papadopulos-Eleopulos reported yesterday - slide 28 - yet, there is this paradox that the HIV experts accept that the tests are extraordinarily accurate. So there is a paradox here. What I am saying, or we are saying, it seems to be very much not what they are saying. Before we go on to why they believe these tests are able to diagnose HIV infection, I just want to talk about the Western blot test itself because it is an important test because it is a test which is said to confirm reactive ELISAs. In this country you don't need to be diagnosed HIV positive, or infected, unless you have a Western blot test. It is not true in other countries but it is true in Australia. So we are now talking about particular problems, scientific problems that we believe are problems with the Western blot itself. Now, this is a book promoted and actually sold by the Australian National Reference Laboratory and one of its authors is,

in fact, the head of that laboratory. In this book there is confusion about the identity of two of the diagnostically and extremely important - and that is a quote for that, 'extremely important' - p160 and p160 glycoproteins in the Western blot strips. I think we said yesterday that sometimes the p41, p120 and p160 proteins are called glycoproteins because they incorporate sugars in their structure. Glyco is the Greek word for sweet. The next slide, slide 29, in some other part of the book it states that gp41 and gp120 are viral antigens that reside in the specific areas of the virion and the gp160 is a precursor being subsequently

cleaned. It is cut up, cut in two, taken apart, if you like, to form gp120 and gp41 and all of those are the structural components of the virus. It is a true gene product. That means it is made by what is called the genetic material of the virus and, therefore, it is a true viral protein. So this is saying there at least are three distinct proteins. That is one part of the book but in another part of the book the authors agree with Pinter, who I think may have been mentioned yesterday, who showed that the p120 and p160 proteins in the Western blot are not different proteins but are composed of three our four subunits of the same proteins, p140, the same protein Montagnier regarded as cellular actin and still regards as cellular actin. The next slide, slide 42, now, these findings Pinter warned that 'Confusion over the identification of these bands has resulted in incorrect conclusions in experimental studies. Similarly, some clinical specimens may have been identified erroneously as seropositive on the assumption that these bands reflected specific reactivity against two distinct viral components and fulfilled a criterion for true or probable positivity. The correct identification of these bands will affect the standards to be established by Western blot positivity: it may necessitate the reinterpretation of published results'. What this means, to translate this,

is that whenever a Western blot diagnosis requires two or more bands, like protein bands, what you actually have is only one because they are all made up of the same protein, gp41. So, if the criteria, for example, in Africa is, say, you need two but it is the same protein, they you only really have one, not two. The question one has to ask is: are you really fulfilling the criteria for a positive test? Slide 31, please.

XN

Q. Just before you do that, I don't think anyone has given us a definition of the word 'virion'.

A. 'Virion' is the fully assembled infectious virus

particle. That is the book definition. It means the virus particle is probably good enough. Now, we are talking about problems with the Western blot test, the confirmatory test, and the second question is this is very important so please forgive me if it is a bit drawn out. What I have always wanted to know is why should separating the proteins in the Western blot make the test specific because that is what basically we are saying here? The ELISA is not specific. You can't tell someone they are diagnosed positive by ELISA, you've got to do the Western blot, and that tells you that you really are HIV positive. The test is specific. There are 1,023 possible band patterns that you can make in a ten band Western blot, and according to the criteria in Australia, only genuine HIV antibodies are certain patterns and antibodies which are non-genuine don't make the same patterns but do make others. For example, the Western blot on the left does not give a positive test. It has only got three bands and it leads to one of these and it hasn't got it.

HIS HONOUR

Q. It needs p41, p120 or p160, doesn't it.

A. It does, correct. So it is not positive, and according to the experts, in most cases these bands are not caused by HIV antibodies but when you add a band, p120, for example, this test is positive. So my question is: how

is it that in the right strip the p24, p55 and p32 antibodies are caused by HIV and in the left strip they are not? If non-HIV antibodies can cause the bands in the left-hand strip, why can't the gp120 band also be caused by non-HIV antibodies?

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HIS HONOUR

Q. That assumes, doesn't it, that p32, p55 and p24 are not caused by HIV, that's the assumption you've made. That may be a wrong assumption. For some reason or other, and I'm not sure of the science at the moment, it's been determined that in Australia you have to have p160, or p41 with three others, I think -

A. That's correct.

Q. - before a medical practitioner will say that the person is HIV positive, but the fact that you don't have p120 but you have three of the others, it doesn't follow that they are not caused by HIV; does it.

A. Well, that's exactly - you're sort of putting this proposition in a slightly different way from what I've putting it. What I'm saying is, look, on the left there is indeterminate and these antibodies, the experts tell us in most cases are not caused by HIV. Let's assume in this case they are not, for the sake of argument. On the right-hand side the same antibodies are caused by HIV because there is a p120 there. Now, I want to know how they know that. That is the question I'm asking. In fact, in 1994 I wrote - this concerned me because I said we deal with these needle-stick injuries and all the antibody tests. I want to know - I'm going to get to the fact that these criteria are different in other countries, let's stick to Australia for the moment. I

want to know how they know that these criteria in Australia, in certain patterns are due to genuine HIV antibodies and in other cases they are not. That was my question. If you're mathematically inclined there are about 600 different ways that you can get a positive antibody test using these criteria, okay. Each of those in fact is a different result. You can even say it's a different test. I want to know how do they know this. It might be true, I want to know how they know. I wrote to the Medical Journal of Australia and I asked this question, I put a slightly different example but I put the same matter that I'm putting to you now: how do you

know this Dr Dax. How do you know this? How do you know Mr Editor of the Medical Journal of Australia? The letter that was published, and you only have to read those letters, there was no answer to this question. The letter that was written back to me basically described how it's done and talked about the bands but it did not answer the question. Because I have thought I might be a bit paranoid, I asked one of my senior colleagues to read this letter and tell me 'What do you think?' and he said 'They didn't answer your question', so I still don't know. They haven't explained it. But a few years after this, I tried to reopen the matter by writing to the Medical Journal of Australia again but I couldn't get past the editorial desk, except recently I've written a letter to my own college journal, the Journal of Emergency Medicine about something similar in relation to the so-called explosive epidemic of HIV in New Guinea and I asked 'How have you proven that the tests you use are specific for HIV?' and the answer I got back from the Queensland HIV expert again completely avoided answering the question. I mean, I haven't got copies of this on me, but these are published papers. Now, the other thing is that I've said 'Why can't that p120 band be non-HIV as well as the three others? In this instance I'm asking that question. Why? How do you know it can't? Because I know they haven't used a

gold standard HIV to check it because there is nothing in the literature on that, I know that. At the very beginning of my presentation I said, and I asked your Honour to remember respectfully, I hope, that AIDS patients had two things. They have high levels of antibodies in general and they have auto-antibodies. High levels of antibodies are typical of AIDS patients. In fact, high levels of antibodies are typical in people with HIV who don't have AIDS. In fact, someone with HIV who is tested it is picked up where their total level of antibodies is measured and someone does HIV because it is known that they are associated. Liver function tests

often include the level of antibodies in your blood and sometimes that happens. In fact, I have a slightly raised total antibody level in my blood which I'm not worrying about, by the way, but it does happen. We know, we present evidence that antibodies have cross-reaction, that antibodies react with multiple antigens, that is just a fact of nature and it stands to reason that the more antibodies you have, additional antibodies you have the more chance this will happen. In fact, it's known that the level of antibodies - there is a paper somewhere in the paediatric literature that you can predict that with 94% accuracy who is going to be HIV positive based on the level of antibodies, so it stands to reason that the more antibodies you have the more likely it is you're going to get cross-reactions. So that's part of the argument that makes me think it may be more likely than not that these antibodies that react in the Western blot test are in fact non-HIV. Why can't all the antibodies that react in the HIV test be non-HIV? What is to stop it and how do they know that they are not? Slide 32, please. The third issue of the Western blot involves a little bit of history, and that is originally in most cases before 1987 a single p41 or p24 band, or both, was considered confirmatory proof of HIV infection. For example, in 1985 four Australian women undergoing artificial insemination who reported to

have become HIV infected from donor semen from an HIV positive male. The basis of their HIV diagnosis was one or two of these particular bands. Nowadays these Western blot bands would not be reported positive. Now, there have been a lot of people diagnosed HIV infected on the basis of these criteria in the past. By about 1987 most haemophiliacs had been tested for HIV on that basis, and certainly gay men, and I don't know how many, but that's what was done pre-1987. And so one might ask should these people all be retested? We, in fact, wrote to the Lancet about the case of the four women who underwent artificial insemination trying to find out -

bringing up this very point, should they in fact be retested and after a great deal of time we had a letter published in which we put this point and the people concerned in Sydney replied that they had managed to retest one woman and they considered that she was genuinely positive but the fate of the other three at the moment we don't know. They said they were going to write a report about it, in their letter they wrote that they were going to write a letter but that report, we haven't been able to find, we may have missed it but we keep a pretty close eye on these things. One or two bands was enough before 1987. Then it was discovered that about 40% of people have at least one Western blot band and most often a p24 band with or without other bands and obviously 40% of people could not have HIV infection. So HIV experts solved this problem by arbitrarily increasing the number of bands and designating particular band patterns as HIV positive. That's what I was trying to find out by writing to Dr Dax. The issue is - sorry to be so longwinded but what is this issue about? The issue is the testing authorities have designed a Western blot in many different ways, so much so that the criteria varied between laboratories, institutions and countries. So much so that a person testing positive under one set of criteria may not test positive under another. Can I

have slide 33, please. Here are some of the several major jurisdictions that have published criteria for a positive Western blot test and nowadays the manufacturers have also provided their own criteria. Do I have to read that?

HIS HONOUR

Q. No, you don't have to read it. I have got a copy of it, slide 33.

A. Slide 34, please. I apologise this looks a bit complicated but I will explain it. Here are the criteria for each of the jurisdictions.

Q. I think I have worked it out.

A. Good.

Q. It seems that above the lines p41, p120, p160, below the lines the others. Self-explanatory, isn't it, that some jurisdictions require two above the line or three above the line or two or three above the line, some only require one above the line and there are variables as to what's required below the line.

MR BORICK: You might need a little bit more explanation as to the meaning of 'GAG', 'POL' and 'ENV'.

HIS HONOUR: I have a basic understanding of that chart.

A. I did mention earlier on that I had grouped the Western blots according to the - I have grouped these, for convenience, to illustrate this diagrams according to which genes are said to produce these proteins rather than the electrophoretic orders. The names don't really matter. 'N' stands for 'envelope', so that's what that explanation is. So I just want to point out that in Africa in relation the left-most column you need to have two of the protein bands, plus I'm just talking about the unique proteins bands. Can you see this varies as well. Down here is under the line. For example, under the FDA criteria, it is said to be - according to Dr Dax's books, the FDA criteria that is most specific in the world and they actually, because they actually specify which band there is no choice, it's got to be

that one and that one you don't have a choice.

Q. p32 and p24.

A. And p24. But the CDC criteria are the most often used, which means that in the US people aren't diagnosed using the most specific criteria. These are less specific, I'm using 'specific' loosely here. I'm really quoting what they say in their book. In the right-most column this is in fact the Multi AIDS Centre, AIDS Cohort Study of 5,000 gay men, that's been in progress since 1985 and it's ongoing. Up to 1990 just one strong band was in fact considered proof of HIV infection. Next slide please.

XN

Q. Before you do that, just give us a brief understanding of the expression 'cohort study'.

A. Cohort study is where you have a group of people, usually of a similar problem, in which you define in certain ways and then you see what happens to them. I mean, it could be a Western Australia football team.

Q. You don't want to mention that around this town.

A. I'm sorry. Can I have slide 34, please.

HIS HONOUR

Q. 35.

A. No, I'm sorry, go back one. So in this slide - this slide has two Western blot bands which was the pre-1987 and this still applies in some jurisdictions and it would be positive in the jurisdictions indicated by the flashing star but not by the other jurisdictions. If we go to slide -

Q. The ones flashing won't come up on the photostat.

A. It actually has a slightly different, I think it's a colour, isn't it.

Q. The ones flashing are US centres for disease control, US Retrovirology Consortium and Germany.

A. Yes. Slide 36, this is just a similar illustration of Western blot test which would be positive in Australia.

Q. So the flashing ones are Australia -

A. The US Red Cross and Germany. HIV experts responded to

these different Western blot criteria in two different ways, because they are fully aware of them. The first they claim that many people, I don't know how many, because we can't find this data, had many bands and so they would be positive under most or some or many jurisdictions. So, I do not know why they say that. It's true, I'm sure it's true. I do not know what we are supposed to make of that. If it is the case then why are there different criteria? There are different criteria, they are not our criteria, someone made them up.

HIS HONOUR

Q. I suspect they are different criteria for the same reason as there are different speed limits between States of Australia. Different governments set the criteria or different organisations advising governments or advising whoever sets the criteria in different places set it. I assume that's the reason.

A. Your Honour, in my view it is the virus that determines what antibodies form. It is not committees. I don't see how committees can set any patterns of antibodies to say there is a virus. They might set them and say 'Okay, let's see how true these are against the virus' but it's the virus that determines what antibodies form.

Q. That's a circular debate, isn't it, that you're entering into.

A. With respect, I don't think it is a circular debate. If you're infected with a virus, the virus and your immune system interact. There is no committees involved in that.

Q. There are always going to be certain criteria set for any diagnosis that certain things have to - there have to be certain positive results before someone might diagnose a particular disease and they may vary from country to country; maybe not. Put aside AIDS for the moment. Someone may diagnose measles in Australia but there may be different criteria for diagnosing measles

in Indonesia. I'm just taking measles as an example, it may be a bad example, but someone has to set some criteria before you determine, before you make a diagnostic decision that something exists.

A. But that's true in clinical medicine.

Q. And different countries will set different criteria.

A. You're right. Different countries do set different criteria for these tests, but the question remains is: how do they know that those criteria reflect viral infection. These are criteria - when you put to me that they have been set by different countries and different institutions, I accept that they have been set, but what

I want to know is, is what they have set correct? How do they know? You just can't make it up. If you make it up and you say 'Well, try these ones out and see how it goes', you have to have some yardstick for knowing where it goes.

Q. I understand that and perhaps that's where this debate takes place. But the fact that different countries have different criteria doesn't really establish the argument, does it.

MR BORICK: With respect, I think your Honour has missed the fundamental point.

HIS HONOUR: I'm asking the witness for a response.

MR BORICK: Let me respond.

HIS HONOUR: I'm asking the witness. You can tell me in due course. I want to hear what the witness has got to say.

A. Can you put the question to me again?

HIS HONOUR

Q. I said just because countries set different criteria it begs the point, doesn't it, that doesn't establish anything.

A. Well, the reason that you do the tests is to diagnose HIV infection.

Q. Yes, but the only point I'm making, I - well, I hope I understand the basic argument that you're putting, but the only question I'm putting to you is just because

different countries set different criteria, before that country would recognise a particular condition isn't a reason to say, well, you can't say what the condition is or you can't say that there is a condition.

A. Well, if you set the criteria in Australia as X and if you fulfil the criteria, yes, you can say that they have got X. You can say by your criteria, that's true. I agree with that. And if it's different, if it's Y somewhere else, then you can say the same thing, but the question is: is it true what they're actually measuring is HIV infection?

Q. I understand that's where the debate is. The only point I was making is the fact that different countries have different criteria doesn't really establish anything.

A. Well, it does establish - it establishes the fact that if you go to one country, you can be positive in that country and not positive in another.

Q. Yes, it certainly does.

A. I don't think - that was my second point.

Q. But that's not unique to HIV, is it.

A. Well, I think it is.

Q. I'm not a medical expert but are there not other conditions where countries would set different standards.

MR BORICK: Excuse me, your Honour. The point was being made repeatedly: you can't have different criteria for babies or, for that matter, death. You've got a baby in one country, you've got a baby anywhere in the whole world. It's always going to be a baby. You can't set different criteria for a virus like HIV.

HIS HONOUR

Q. I'm just asking a question. Are there not other diseases where there are different criteria in different countries.

A. I'm just trying to think of one and I am trying to think of one because I'm clinically quite experienced. I can tell you that there is a certain criteria for diagnosing

rheumatic fever. When you get into clinical, it's more murky and the Jones criteria for diagnosing rheumatic fever are the same all over the world. If you have a heart attack in New York, there are certain ECG abnormalities that tell the doctor that you've had a heart attack. They are the same in Australia. It's globally transportable. So I mean, I accept your argument that there are -

Q. It's not an argument. It's a question.

A. I accept your question that there are different criteria set by different regulatory authorities and they are trying to diagnose the same thing. Don't forget these

tests, you know, a particular manufacturer's test will be used all over the world. These are not due to variations in test kits, okay? So I think the criteria - the fact that the criteria are different is significant because you can be diagnosed with the same virus or not diagnosed with the same virus according to which laboratory you're tested in. I was trying to suggest the response of the different - there were two points I was trying to make. One was that they say that because many people have lots of bands in the Western world, it's academic but my response to that is: why are there different criteria? Why not just have all the same criteria and my second point is that they say the differences are slight. You can argue that having one, two or one is a slight difference but that slight difference is not slight when you consider that a person can be HIV positive in one country or jurisdiction and not another. To me, that is not a slight difference. The other point I'd like to make is that how can you say they are extraordinarily accurate when results depend on which laboratory does the tests? May I move on?

Q. Yes, certainly.

A. Slide 32. The implications for this - and this sort of relates to the previous slide - this is a bit of speculation and I hope - if you don't want me to speculate then please tell me - but it is important to

my argument that if 1% of Australians have a reactive ELISA, that's about 200,000 and they are not infected and 8 million with a one band Western blot test and they are not infected, we know in Australia the HIV infection rate is about .1% so pick someone off the street at random. About 1 in 12,000 Australians are HIV positive which means they have four or more bands according to our criteria. It's difficult to imagine that some Australians - some number between 8 million and 20,000 don't have two or three band Western blot tests and I'm reverting to the previous argument that some of these people would be - not all - and I don't know how many

because I've got question marks on the slide but some of them may be in fact positive by the criteria of other countries or institutions. The question arises: this has some logical questions to ask. Would overseas public health authorities regard such figures - would they regard them at risk of transmitting HIV? Would they recommend they be treated for HIV? On the other hand, how do Australian health authorities rate people positive in New York City but who come here? I don't know the answers to these questions but these are questions one can ask because they are different criteria for measuring the same thing. What if someone wishes to emigrate? Whose criteria do you use? Can I have the next slide, please, 38? To add further confusion to the Western blot, nowadays the national reference laboratories - sorry, these are the Australian criteria which I've written out here from the book. 'Positive: the presence of the glycoprotein (envelope) band plus three other viral specific bands, or now some laboratories use the band combinations specified by the manufacturer as their interpretation criteria'. That's with the blessing of the national reference laboratory. But when you read the packet insert of Glen labs, there is one approved manufacturer. Their advice is to follow local regulations. Although they do provide their own criteria, they are such they need - their criteria

include two of these bands which would mean that some Australian positives would have to be downgraded. I don't know about you, your Honour, but I in fact find this quite confusing. There is even more confusion - next slide 39 - the national reference laboratory book states 'Confirmatory tests for HIV ... antibodies to HIV'. In other words, they are saying the same thing as Philip Mortimer and they give reasons why this may happen which include high levels of antibodies in general parasitic diseases which are common in Africa, other infective agents which are unspecified and antibodies and they mention pregnancy and syphilis.

Perhaps we can understand why the UK expert Dr Philip Mortimer said Western blot detection of HIV antibodies began, and should have remained, a research tool. In fact in England, where Dr Mortimer holds sway, they don't use the Western blot at all.

HIS HONOUR

Q. What do they do in England.

A. In England, they do an ELISA test. They just repeat the ELISA. I'm not sure whether it's two or three test kits and if they are concordant, they say the person is HIV positive.

Q. That's less specific, isn't it.

A. I'm going to argue that - I'm going to agree with you and present that a little later on in regard to the Western blot. Next slide, slide 40. I stress that nowhere in the scientific literature are there reports of HIV itself being used to define the true infection status of persons validating the HIV antibody tests. Needing something in place of HIV; someone to act as the baby, for my example, HIV, experts have resorted to certain de facto standards for HIV which are, in my view, unscientific. In the Constantine book, which I showed earlier, addressing this issue, one reads that the true infection status has been determined by 'Clinical status culture etc.'. By 'clinical status' it means AIDS. Remember we are using something as a

stand-in for HIV and by AIDS is meant one or more of 30 diseases said to define AIDS. You could use clinical status to define HIV if and only if you have proof that HIV is the only cause of those diseases. There are approximately 30 different diseases in the AIDS-defining list and they all pre-existed AIDS. They all have causes other than HIV. For example, tuberculosis, the commonest AIDS-defining AIDS disease in the world and it's not all caused by HIV, so you can't use AIDS as a gold standard for HIV because those diseases have multiple causes. On the other hand, if you choose to use AIDS as a gold standard, then you're stuck with the

gold standard that you choose to use and you can't unuse it halfway through the experiments and you create a very big problem. Since the vast majority of individuals who test positive in the world don't have AIDS, in fact many are healthy, you have to conclude - that includes Mr Parenzee - you have to conclude that like the women who test positive for a pregnancy but don't actually have a baby, that the vast majority of HIV tests are false positives. Is that clear, your Honour or should I repeat it?

Q. I think it's clear to me. What you're saying basically is that because the majority of people who test positive for HIV, under the various standards we have looked at, don't actually have AIDS -

A. If you use AIDS as a gold standard.

Q. If you use AIDS as your gold standard.

A. If you use a clinical syndrome, that is the disease -

Q. Then you've got a whole lot of false positives.

A. They must be false positives because you're stuck with the gold standards you choose to use which is not a gold standard because those diseases are not all caused by HIV anyhow, so the second way the true infection status has been determined -

XN

Q. The expression 'culture etc', what do you interpret that to mean, particularly the use of the expression 'etc.',

in the textbook.

A. Well, I'm surprised that the word 'etc.' - this is serious business. This is all about: how do you prove these tests are specific? Let's make no bones about it and in a textbook called 'Retroviral Testing and Quality Assurance', how you can actually put 'etc.', as a means of determining true infection status is totally beyond me. I do not understand it. Scientifically it doesn't tell you anything, the word 'etc.'. It doesn't convey anything you can put your hands on.

Q. In the context of it, what do you understand 'culture' to mean.

A. 'Culture' is the second - there are three ways that they say you can determine true infection status. One is clinical status - AIDS - which I've just dealt with. The second is culture and the third one is 'etc.'. They are the only two.

Q. But 'culture' itself, what do you think they mean by that.

A. By 'culture', they mean detecting an antibody to - I can explain. By 'culture' these days they mean detection of P24 in a tissue, in a culture of cells from AIDS' patients. That's what they mean.

Q. I want to make that clear. They are not talking about 'culture' in the sense of a group of gay men etc.

A. No, definitely not. They don't mean that at all. They mean cell culture. The question is, as I said earlier, that when you have the gold standard, it has to be independent. You can't test a cell. In an antibody - what I want to point out is that the culture test, you take an antibody to P24. That's manufactured. It's made - I don't know how it's made. It's made by technology companies and it's in a test kit, an antibody, and you react it with culture and this antibody is directed against the P24 protein that is said to be HIV specific which we argue is not but is said to be HIV specific and if you get a reaction, that's called 'culture'. It's sometimes 'isolation' as

well. By HIV isolation nowadays, that is what is meant but it's the same reaction as in an antibody test. It's just the order in which you add the agents. In an antibody test you have the antigen here (INDICATES). You add the antibody in the serum and they combine. In the culture test, you have the antibody in the test kit and you add the culture to the protein and they react to the culture but it's the same reaction; same antibody, same antigen, so they are not independent. So you'd expect it to happen. You can't use it. That's my point. The next slide -

Q. 41.

A. As I said, the word 'etc.', doesn't mean very much. It means nothing but we could use it to apply to another method put forward in the late 1980s by Burke and his colleagues. Colonel Don Burke tested 1.4 million military recruits in a paper which many regard as putting the Western blot test on the map and proving that it is extremely specific. Burke chose approximately 135,000 young soldiers whose average age, from memory, was around 17-20, who were healthy and they came from parts of the United States that for all intents and purposes had no AIDS; extremely low risk. Having defined an antibody test on the basis of two ELISAS and two Western blot tests which is one more than we use in Australia. Now most people would have regarded these men as being false positives because of what I said: young, fit, healthy, came from parts of the US where there was no doubt no AIDS but Burke thought otherwise. So he had to find out whether they were truly infected. That's what he needed to know. He needed to know whether the soldiers who reacted like this were actually really infected. So what he did was he actually repeated - he did four more tests on the soldiers who were already positive - four more - and if they were positive on the four extra tests, two of those tests were Western blot tests and two other tests were similar to the Western blot tests and if they were

positive on all eight tests, he said they were all truly infected and if they weren't positive on the extra four tests, he said they were truly HIV non-infective and this is published in a leading journal of medicine.

Q. Can you explain the 'X'.

A. It means extra. Four times Western blot so they added four other tests. He already had four antibody tests, two ELISA, two Western blots, so they did two more Western blots and two more tests like the Western blot, so there were four extra tests on those soldiers. If they were positive on all eight tests, then they were truly infected. If they weren't, they were truly not

infected. That was his reason. What this means is their gold standard for finding out whether someone was truly infected was to repeat the test. That was a way of distinguishing between true and false HIV anyway. I believe this is wrong. If the test can be positive for more than one reason, repeating the test will not resolve that ambiguity. Slide 42. To illustrate, this is a photograph of a test from flowers and the basis of the test is a reaction between light and coloured pigments in a piece of celluloid and real flowers and coloured flowers produce the same picture. You can't tell from that picture if they are real or artificial. Next slide, 43. If you repeat the test, you still can't tell. You can repeat it 1,000 times and you still can't tell. If you repeat the test and it's negative, you still can't tell. Next slide. Hence whatever the antibodies in Burke's soldiers were, HIV or not HIV, they were the same antibodies, no matter how many times the test is repeated. Repeating the test is not a gold standard for determining the specificity of an antibody test. In 1993, we wrote a paper in Nature Biotechnology which included many things. It included most of the evidence which has been presented yesterday and what I'm talking about now.

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27
28
29
30
31
32
33
34
35
36
37
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Including an analysis of the study by Burke, and we criticised it, and Biotechnology is a very international journal. It is available in immunology departments. In fact, it was available in the Immunology Department of the Royal Adelaide Hospital when we wrote it because we saw it there at the time we published it but no-one every wrote to the editor to counteract our claims, to criticise, to defend Burke's method of repeating the test, and this is editorialised. Burke's paper was editorialised in the Journal of Medicine and they stated that he had repeated the test to determine the specificity, which is wrong, but it did more or less put HIV antibody testing on the map because he said it was 99.9993%, approximately, was the word, distinct. So, it is our view that the specificity of the antibody tests -

HIS HONOUR

Q. If he was performing exactly the same sort of tests on all these people, he would have got exactly the same results on all of them, wouldn't he.

A. No, not everyone reacts in a test.

Q. Then there might be some basis upon which he can, by repeating the test, bring down the numbers to a point where, 'If it comes up positive on eight occasions, then I can be satisfied. If it doesn't come up positive on eight occasions, I'm not satisfied'.

A. Well, if it comes up positive on eight occasions, you

can see that the person had antibodies that reacted in those eight tests. You were uncertain when you did four tests because that's why you did another four. It is the same antibodies. How does that tell you - that can't tell you what the antibodies are. It can't tell you that they are HIV antibodies. They weren't non-HIV antibodies all the time. As I said, Gallo, for example, who is very famous in this business, when he did studies like this he said people in these low risk groups were false positives. That's how he conducted his affairs in those days. He used healthy blood donors. So, they don't agree with each other, and I disagree that you can

actually specify where the antibody came from, what made it, but repeating the test and getting the same result that time - I have patients who have had a funny looking lesion on a chest X-ray and I think it might be TB, or I think it might be lung cancer - this has happened to me - and I can repeat the test - what happens is they go to a peripheral hospital, the resident sees them, someone loses the X-ray, they come to the main hospital and someone x-rays them again and they lose that X-ray and this patient may end up having four x-rays because they eventually all get found and have them all over again and they all look the same. It doesn't tell me what it is. We have got to the stage where we have asserted that because of the lack of gold standard comparisons, we can't accept that the antibody tests have been proven or specific which leaves one in a bit of a vacuum because these patients do have antibodies that react in those tests. So, one may reasonably ask if they are not a retrovirus, where do they come from? There are three possible reasons. The first is that AIDS patients have diseases such asmicro bacterial and fungal disease. Tuberculosis, for example, is caused by a microbacteria, as is leprosy. They are a micro-related bacteria. In fact, micro-bacterial and fungal diseases constitute a fair proportion of AIDS diagnoses.

XN 27

Q. Just interrupting you there, are you wanting slide 46 now. 28 29

A. No, not yet. Now, it is known, there is lots of evidence in the literature, that antibodies that form a response to micro-bacteria and fungal antigens, that is the biochemical constituents of which they are composed, the proteins, for example, react with the proteins in the HIV antibody test, including in the Western blot. Now I'll have that slide 46, please. Now, these are real Western blot strips on real people and there are a serious of Western blots performed on leprosy patients 30 31 32 33 34 35 36 37 38

and their contacts from Africa. They are taken from a paper published by one of the most famous world leading HIV researchers from Harvard University, Myron Essex. Now, leprosy is a disease caused by a micro-bacteria which I said is closely related to the organism which causes tuberculosis. According to the World Health Organisation, the criteria for a Western blot in Africa, you need two glycoprotein bands, and if you look at the first three strips, there is gp120 and there is gp41. They don't reproduce that well but that's what Dr Essex is telling us and so I will accept it. Now, the first three of these bands are ones that control and that is just one that is known to have these bands. That is to make sure the test is working. And these are two leprosy patients said to be HIV infected because they have got two glycoprotein bands. There is also 16 other strips in this Western blot which are leprosy patients and their contacts, and none of the 16 others are HIV positive because they don't have two glycoprotein bands, which is known to be positive in Africa. Yet, based on the Australian criteria, which are the most stringent in the world, if these individuals were tested in Australia they wouldn't be positive. The authors of this paper concluded - and I will have to read this - HIV ELISA and Western blot is how it should be interpreted with caution and screen individuals affected with

micro-bacterial tuberculosis or other micro-bacterial species. ELISA and Western blot may not be sufficient for HIV diagnosis in AIDS endemic areas of central Africa where the prevalence of micro-bacterial diseases is quite high. So, this paper is very significant. The majority of AIDS patient in the world are TB patients and they are said to be AIDS patient because they have had a positive test, yet according to Essex, these tests on these patients are not sufficient to prove HIV infection. Then, Mr Parenzee was born in South Africa and he lived there until he was 15 years old, and in South Africa there are approximately a quarter of a

million new cases of tuberculosis and this represents only a fraction of people that have been exposed to the bacteria that causes TB. They don't know what fraction but it is probably only a few per cent. No-one can find out in the exact number but if you talk to doctors who come from Africa, that's what they tell you. Please have the next slide, which is slide 47. So one reason is that the diseases which AIDS patients get has antibodies that react to the tests; that's micro-bacteria and fungal. The second reason is that AIDS patients have auto-antibodies. In fact, they have a plethora of auto-antibodies that react with their own cellular proteins, which means if the HIV proteins are, in fact, cellular proteins, which we argued yesterday - Eleni argued yesterday - one would expect their tests to be positive on this basis alone, or, such antibodies could also react non-specifically with the tested proteins even if they are true unique proteins from the retrovirus HIV. Now, the third reason is that the AIDS risk groups are characterised by exposure to a very large number of antibody inducing stimuli which include semen; blood; factor 8, which is the substance that is infused in haemophiliacs because they lack it and that's why they bleed; any foreign proteins; infectious agents and drugs, including oral drugs. A study of prostitutes who used cocaine in New York City shows the positive

antibody tests are almost twice as prevalent in cases where intravenous use is solely oral rather than intravenous. All those factors have the potential to produce antibody formation and it is not difficult to appreciate that the more you have, the greater the mechanics the more likely it is that there will be antibodies that will react in these tests which are non-HIV. Now, the same argument can be extended to sick individuals who are not in the AIDS risk groups. Sick individuals in general are expected also to have high numbers and a greater variety of antibodies. If you get a virus, if you get sick, you make antibodies. That's

what happens when you are sick. So, we can predict the same thing may happen in non-AIDS sick individuals. In fact, we might predict that because of this some of these antibodies might cause positive tests. In fact, there are data to support this contention. Slide 48, in 1990, in a study never followed up or repeated, a research group from the United States recorded the results of HIV antibody tests, including ELISA and the confirmatory Western blot, on nearly 90,000 patients. These authors took great pains to exclude anyone who had even the slightest remote chance of being an AIDS patient, or being in an age group or had a disease even remotely connected to AIDS so much so that it took over half a page of print to list over 70 exclusion criteria. They even excluded patients who had gunshot and knife wounds because such patients have a slight preponderance of a positive test and they found that 22% of men and 80 of woman in the AIDS age groups classified as no risk of AIDS were antibody positive.

Q. On the slide the word 'age group' should appear after the word 'AIDS', is that right.

A. In the AIDS age groups, that's 25 to 44, up to 22%. On the next slide it may be more obvious than slide 49. So there are the percentage rates of the top AIDS hospitals. As you can see, the numbers are not insubstantial. Please note that these are people from

whom any chance of being in an AIDS risk group has been vigorously excluded, even gunshot and knife wounds.

HIS HONOUR: My table hasn't come up on my photo, Mr Borick.

MR BORICK: Yes, I notice that. I have the same problem but we will fix that.

XN

A. I mean, Mr Parenzee was sick and attending a hospital at the time. There is limited clinical data I had been able to obtain on Mr Parenzee. He was sick and was attending a hospital at the time he was diagnosed but as far as I am aware, he is not in an AIDS risk group so

Mr Parenzee could well have been selected as a patient in this study, hypothetically. The other important thing is that if there are factors in non-AIDS risk individuals that cause positive tests, why can't the same factor also operate in the individuals who are in the AIDS risk groups, and diseases don't discriminate that much. Gay drug uses and haemophiliacs still get the same diseases that everyone else gets. They don't just get AIDS and nothing else, so these factors may also operate in people in the AIDS risk groups as well. As a chronology to this, one might also predict, when health improves, at least some positive antibody tests in previously sick individuals may revert to negative, and again there is evidence in this. In 1991 there was a paper published by Lange. One of the authors was actually Dr Elizabeth Dax from the National Reference Laboratory who reported that a reformed drug addict HIV positive on the Western blot and ELISA lost their HIV antibodies and reverted to negative when they reformed. There was only a small group. There is only 10 of these individuals but they reported them, but because HIV is said to be for life but these addicts lost their antibodies they regarded their original positive tests as false positives. Nowadays, drug addicts with positive tests who are recorded as true positive are said to be infected for life and, in fact, are in the

second to highest risk group. Slide 50, this is extremely important and somewhat tedious. I apologise but I need to explain this to your Honour. This is a highly significantly historical precedent that illustrated how misleading antibodies may be in regard to diagnosing retroviral infections. In the mid 1970s, Dr Gallo discovered what he considered to be the world's first human retrovirus in a patient with leukaemia. It was named HL23V and the evidence for its existence surpassed that of HIV because reverse transcription was found in fresh uncultured tissue and they actually had a density grading electro-virus picture showing retroviral

particles. Now, following the discovery of HL23V, some scientists determined its prevalence and how many people the population had using antibody tests. These were Reinhardt, Kurth and Robin Weiss from Germany and England respectively. They conducted a serological survey for antibodies that reacted with the proteins of HL23V and they conclude what is in the slide: 'The serological studies presented here and by others provide indirect evidence that the infectious mode of transmission' - that is the virus has been passed from person to person - 'remains a real possibility in humans and suggests that infection with a retrovirus may be extremely widespread'. I should also add that they included three monkey viruses in their serological survey and found that humans also had widespread infection to these three viruses. Now, understandably, such studies rose a suspicion that the data may have been misleading and was it possible that a leukaemia-causing virus could be so wild spread while the leukaemia was relatively rare, and since the vast majority of humans don't come into contact with monkeys, however, they have antibodies to monkey viruses. Now, the answer to the question is in slide 51, please. It was provided in 1980, five years after the discovery by two highly prestigious research groups from the US where they did some experiments to show that the antibodies to

HL23V are not specific and they were 'caused by exposure to substances as diverse as normal components of serum, extracts of bacteria and even non-protein molecules such as glycogen', which is sugar. They concluded: 'The results are consistent with the idea that the antibodies in question are elicited as a result of an exposure to many natural substances possessing widely crossreacting antigens and are not a result of widespread infection of man with replication-component oncoviruses'.

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So our view, hypothesis and proposal, is that the reason for a positive antibody test in AIDS risk groups, which may include their ontogenetic viral, which is considerable and varied, it may include micro-organisms to which they are exposed and which might cause their diseases. Slide 52, please. This is a copy of Mr Parenzee's antibody test. I spent considerable time thinking about it, what to say about this and I would seek your guidance in this matter. Firstly, speaking as an expert, and I respect the fact that that status is - to use the word from yesterday - putative, this does not include the Western blot bands which normally are in a report of this nature. I was interested in the expert role to say that if this, if Mr Parenzee's bands showed only one glycoprotein band it would be positive in Australia but he may not be positive in the country in which he was born and considerably raised, because they require two glycoprotein bands. He may - his Western blot could be similar to the one that I showed before. I also considered what I would do may be in a non-expert role, that is, if I was Mr Parenzee's doctor. I'm not sure whether it's proper for me to speculate about that here or how I would regard this report

Q. I think you just continue.

A. Your Honour?

HIS HONOUR

Q. You can give the evidence, we will debate its relevance later.

HIS HONOUR: I take it it will be received de bene esse.

MS MCDONALD: There will be a lot of evidence that will fall into that category. I maintain that position throughout.

HIS HONOUR

Q. You go on.

A. The problem with this report is that it's not signed and it describes the Western blot as reactive which is a term which I am not familiar with and I'm not aware that

Western blot tests are ever described as reactive and I do not know what it means. I imagine it means that it has some bands. But it is also considered to be a confirmed positive reaction. But in the absence of the bands, I do not know, I can't make a decision about that myself. So what I'm trying to say, that - and it advises people to ring a certain number and report Mr Parenzee's as infected - as a physician I could not do that on the basis of that test, that's is basically all I'm saying about that.

MR BORICK: Could I interpose, we will lead evidence from the IMVS that the Western blot test strip was destroyed five months after it was taken and that it is not known who conducted the test. There will be significant matters as this application proceeds.

XN

Q. Sorry to interrupt you there.

A. The next slide, please. I would like to conclude - 53 - Mr Parenzee's ELISA test was reactive. This does not prove that he was positive. Since Mr Parenzee's confirmatory Western blot report does not document the band pattern, his status as positive, indeterminate or negative cannot be verified. One cannot rely on a confirmatory antibody test when a test done on the same specimen is reported differently according to where or which laboratory performs the test. Even - I'm just

reading - if the Western blot test kit proteins are HIV and Mr Parenzee has antibodies that react with them this does not prove the antibodies are HIV. Slide 54, please. The only way to determine if the antibodies are HIV is to use a HIV as a gold standard for comparison. This has not been done. At present this cannot be done. Presently there are no scientific data that prove a relationship between the positive antibody test and HIV infection. That is the completion of my presentation.

Q. There is one other matter that I want to raise. Professor Cooper in his report refers to what has been described as the Koch postulates. Could you just

briefly plain to his Honour what that is, what the postulates are.

A. Robert Koch was a German bacteriologist in the late 19th century, thereabouts. He wrote four postulates to help people decide if a particular bacterium causes disease. The problem at the time, there were lots of bacteria being found and there were lots of diseases in near association that prove causation. So he wrote out four postulates which have become the Holy Grail for medical students and doctors, although they have been criticised a lot lately. The Koch postulates basically are, there is four postulates. The first one is - I cannot quote these directly according to Koch, these are Koch's postulates according to myself. The first Koch postulate is that the organism has to be associated with a disease, it has to be present in every case in the disease. The second one is that you have to be able to isolate the organism from the characteristic lesions of the disease. The third postulate is you have to be able to reproduce the disease by injecting the organism into the animal or experimental animal and get the same disease. The fourth postulate is that you have to be able to re-isolate the organism from the animal after you've injected with the organism. That's what Koch followed, and if the bacteria satisfies those postulates then according to Koch's postulate that proves that the

bacterium causes the disease, your Honour.

Q. Professor Cooper in the report refers to the fact that in the absence of the fulfilment of the third postulate, which is the same as your third postulate, he relies upon an observation that laboratory or a health careworker may become infected in HIV and exposes them to the virus, he relies upon the Florida dentist case. Could you just assist his Honour with respect to both of those matters from which Professor Cooper relies.

A. Well, firstly, health careworkers, which is not the Florida dentist case - do you want me to address -

Q. Do that first and then the Florida dentist case.

A. Health careworkers. There are reports of health careworkers developing positive tests in AIDS in the scientific literature. They are hard to find. But from our point of view, the question is: are these occupationally-wise? This proves Koch's third postulate. Maybe, maybe not. We know that no test is perfect. We would expect - there are a lot of health careworkers and we would expect that some health careworkers could have positive tests which are false positives. One would expect that some health careworkers would develop diseases which are in the AIDS list. The fact that a very small number - it is a small number, I think - I don't know the number, but it's not - I think in the United States it's 20 or 30, or thereabouts, I'm not up on this, I'm sorry, but you would expect it's not unexpected for a small number of health careworkers to develop these diseases even if it's got nothing to do with HIV. The other thing is that most health careworkers are women, yet 90% of the health careworkers who this happens to are in fact men, so one can't exclude that these people are actually AIDS risk groups and it has nothing to do with their health care work. So I don't - it's not very convincing in my view. As far as the dentist is concerned, it was - there was a dentist in Florida who has allegedly infected ten of his patients, but in fact five of those

patients had risk factors for HIV which were excluded from the analysis and which left five patients and that rate was said not to be different. In America one in 250 people are HIV positive, so five out of 1,100 is not too different from the rate, although in fact the comment that I read in the science was that that differed from the rate of the patients of doctors in America, the rate of these tests. More importantly, there was an analysis done of the genomes of these viruses, which was reported, which was, the CDC proved that he had - in fact the virus in Dr Acer, that's the name of the dentist, was the same. And this study is

commonly quoted as being proof of Koch's postulates and Mr Cooper quoted it and I read it, I think Professor Gordon also quoted it. Your Honour, the CDC did not - this was very controversial. I just wonder, I have some quotes to read about this, because I cannot possibly commit this to memory, so may I just read? It was reported in science about this, when this happened, which I just happen to have with me, and maybe I could just read some of the comments?

HIS HONOUR

Q. What are you referring to now.

A. I'm referring to an article in the science which comments the case of the Florida dentist.

Q. Can you give us a reference to it, to what date.

A. 24 January 1992, when all this happened.

Q. Yes.

A. I am reading from this, although some of the quotes are on another piece of paper, but they come from this article.

Q. Right.

A. The genetic conclusions were not without controversy. With HIV the issue of sameness is not all that clear. 'On this basis -' sorry - 'On the basis of the comparison -' the comparison was done by looking at 7 % of the HIV DNA, just 7%, and by this analysis of 7% they concluded that the viruses were really identical, but

there was dissent. 'Stanley H Weise, director of the division of infectious disease epidemiology at the New Jersey medical school, argued that the CDC was not absolutely thorough in collecting physical evidence and did not perform enough controlled comparison to be sure that the viruses found in Acer and his patients weren't otherwise found in South Florida. The CDC is using an innovative research technique and for its practical application requires an enormous amount of controlled data to know the proper way to apply it. The amount of data that has been provided by the CDC in the MMWR -' that's the Morbidity and Mortality Weekly Reports '- is

very limited. So if someone wanted to interpret that information for themselves I would think they would want to access too much - they would want to access much more information. In fact, there were other scientists, some who were employed by lawyers to -' because there was a compensation about this' - who wanted to test the CDC data and they had to actually use FOI to obtain that data and speaking with their lawyer they said "To use the data to obtain -" sorry "- use the data from the CDC to prepare a paper criticises the paper that the CDC used in drawing its conclusions"'. So nonetheless, the CDC in November 1992 claimed that Acer had infected his patients. That was the end of the matter, but it was controversial and not all scientists agreed that the case had been proven. There was other dissent as well that I haven't actually read. I mean, I may comment on that, since you asked Mr Borick. It seems to me that if HIV is going to fulfil Koch's postulates, then why are so many people infected in the world, why does one have to resort to this sort of case? I don't know.

NO FURTHER QUESTIONS

WITNESS STANDS DOWN

+THE WITNESS WITHDREW

MR BORICK: Perhaps we can have a five-minute break for the changeover, if that will suit you?

HIS HONOUR: Yes. How long do you think Ms Eleopulos

will be?

MR BORICK: The next presentation, we might finish by lunchtime.

HIS HONOUR: Are there some more slides that I need to have for the next presentation?

MR BORICK: Yes. You should have them.

HIS HONOUR: They are the ones starting with 'Sexual partners'?

MR BORICK: Yes.

ADJOURNED 12.17 P.M.

RESUMING 12.26 P.M.

+ELENI PAPADOPULOS-ELEOPOULOS CONTINUING

HIS HONOUR REMINDS WITNESS SHE IS STILL UNDER OATH

MS MCDONALD: There is one brief matter I want to raise before the witness commences the last section of the evidence. As I understand, this last presentation is going to relate to the issue of sexual transmission of HIV.

I'm very conscious that there have been media in court during this hearing who have been handed out copies of Mr Borick's opening and he has been consulting with them in terms of the statistics that are about to be presented. The prosecution obviously won't be calling any evidence certainly today on this topic.

I want to make it clear at this stage that there will be evidence suggesting that these figures are misleading and I raise it because I would be very concerned to see reports in the press presenting these sorts of figures to suggest that HIV isn't sexually transmitted in the public arena. I raise at this stage that there is certainly great controversy about the sorts of figures your Honour is going to hear.

HIS HONOUR: What you've said is on the public record. It's for the press to have heard it. How the press report it, ultimately is a matter for the press but I'm sure that the members of the press who are reporting on

this evidence and their editors are responsible and whatever reporting takes place will make it clear to members of the public that these are allegations put by one side in respect of a matter which is hotly contested.

MS MCDONALD: Yes.

HIS HONOUR: And there will be other evidence in relation to it. I'd hope that the press is sufficiently responsible to do that.

MS MCDONALD: I'm sure that's right. I really raised it out of an abundance of caution.

MR BORICK: Channel 2 last night in their publication

of this case said that there had been some evidence given by scientists whose evidence had been debunked years ago. That didn't come from anything said to your Honour yesterday in court. I don't know who it did come from. That will be the subject of a complaint to the press council.

HIS HONOUR: You're going to have another set of slides so we had better mark them so that we know where we are going.

EXHIBIT #A8 SET OF SLIDES TENDERED BY MR BORICK. ADMITTED.

+EXAMINATION BY MR BORICK

A. One of the sexual partners is called insertive active and that is the partner which donates the semen and can be only a male. The other partner is receptive, known as receptive passive and the semen recipient, and that partner can be either female or male. Now, 'A sexually transmitted infection is one in which the micro-organism is transmitted from person to person via infected genital secretions during sexual intercourse'. Sexually transmitted diseases, that is, STDs, are transmitted from the insertive to the receptive partner, from the receptive partner to the insertive partner, from the insertive to the receptive.

HIS HONOUR: Mr Borick, I don't want to stop you and I don't want to stop this witness.

A. Please do.

HIS HONOUR: I want to indicate to you at this stage that I'm not satisfied that this witness is qualified as an expert to talk about this particular topic.

MR BORICK: Which?

HIS HONOUR: The topic of sexual transmission of any disease. I'm not sure that you've qualified her to give this evidence. I mean, I'll hear the evidence but I ought to indicate to you at this stage that as I understand it, Ms McDonald is challenging the expertise of your witnesses anyway but I have some difficulty about the basis upon which this witness is put forward

as an expert on this particular topic.

I don't say anything about the other topics upon which she has given evidence. As I understand it, she is a nuclear physicist. That's her academic qualifications. I'm not sure what her qualifications are in biology. They don't appear to be any. She appears to be self taught. I'm not sure upon what basis it's put forward that she is an expert in talking about how diseases are sexually transmitted.

I indicate that to you now because I don't want you to be caught short later on and say to me 'Well, your Honour didn't indicate any of that to me at an early stage', so I'm indicating it to you now. I'm not going to stop you from leading the evidence. The witness is here now and I'll hear it de bene esse but quite frankly, at the moment, I have some difficulty with her qualifications to give this evidence.

MR BORICK: I just take you back to what you said about her qualifications as a nuclear physicist. She is a physicist and the evidence was given that that is a study of the basic science that underpins biology.

HIS HONOUR: I understand that.

MR BORICK: Professor McDonald, who is sitting behind me, is self taught in exactly the same way. You don't get a degree in serology. You have to get it through study, experience and knowledge and that's how she has

qualified herself.

Only one of the witnesses claims to have expertise in epidemiology, for example, and the other witnesses don't and in a certain way, you could say that some issues of that sort are concerned with this evidence.

A person with her background, training and experience is perfectly capable of reading the reports and studies which have been carried on around the world which you are now about to hear about and the interpretation of those studies is well within her area of expertise. She is not talking about the way in which a penis is inserted into the vagina or anything like

that. She is talking about what has been the result of the qualified studies, including the studies of Padian.

HIS HONOUR: I don't want you to argue your case at the moment because you may well be right. All I intended to do was to indicate to you a concern of mine. You may have an absolute response to it, as I've indicated. I haven't made any decision about any of this material but I just didn't want you to be caught short later on because of the way in which this evidence has been presented.

I didn't want the criticism levelled later on or the suggestion levelled, rather than criticism, the suggestion levelled later on, 'Hang on, I didn't have any idea that your Honour might be thinking along these lines and therefore I haven't addressed it'. That's the only point I'm making.

MR BORICK: I appreciate that's the way your Honour has put it and I appreciate that you explained to Dr Turner that you were asking questions. You were not challenging. Your Honour has expressed a concern and I think I should express a concern because at the five minute break, about five or six members of the gallery spoke to me and said that Professor McDonald sitting behind me, who I couldn't, see was making expressions, nodding his head and agreeing with your Honour when you were putting propositions. I don't want to be caught

short either.

It was obvious to a lot of people. I can't talk one way or the other but I assured those people that your Honour was going to decide this case according to law and not to worry about -

HIS HONOUR: Mr Borick, I can say this to you: certainly I didn't observe all of the expressions of Professor McDonald. I did observe from time to time he might have nodded his head. It happens all the time in these courts that people nod their heads in agreement or disagreement or whatever. I don't interpret any of that as anything. I will rely entirely on the evidence

that's given. If Professor McDonald gives evidence, as I anticipate he will, he will be cross-examined and I'll rely on his evidence. Anything that happens in the body of the court is not going to influence me one way or the other. I put that on the record.

MR BORICK: I wasn't going to raise it but I raise it because of your Honour's express concern about the expert status of this witness. You raised a query about whether she could talk about biology and I find that concern difficult to understand. You've heard her evidence and she is clearly an expert and so I don't want your Honour's use of the word 'concern' to be taken as indicating that you have a really serious doubt about it. You've got an open mind on this still?

HIS HONOUR: All I'm saying, as judges do from time to time and when there is not a jury present, as you know judges can express what we might call concerns, observation, however you want to characterise it, just to make sure that everyone understands where we are going.

MR BORICK: Thank you for that and we will deal with it.

XN

A. As I said, sexually transmitted diseases are biologically transmitted from the insertive to the receptive. This is not nuclear science. From insertive

to the receptive, from the receptive to the insertive, from the insertive to the receptive. That is a sexually transmitted disease must be bidirectionally transmitted. This is very important so that's what I'd like to assist a little beyond this to make a difference between a sexually acquired and a sexually transmitted phenomenon. For example, the only sexual partner at risk for pregnancy is the woman, the receptive passive semen recipient. The woman, that is the passive semen recipient partner, cannot transmit pregnancy to the active, insertive, semen donating partner, the man. The man - the active semen donating partner - provides the

cause of pregnancy which is semen but semen is not an infectious agent, with the conclusion that pregnancy is a sexually-acquired phenomenon. It is not a sexually transmitted phenomenon. Slide 5. To prove that disease is sexually transmitted, you have first of all to find the agent in the genital secretions. It has to be in both partners, the passive and the active partner. And as I said, it must be bidirectionally transmitted. The evidence for a sexually transmitted disease is usually obtained or always is obtained by contact tracing. That is, if a man or woman is found to have a sexually transmitted disease, then the doctor tries to trace her sexual partners before she became infected and her sexual partners after she became infected and this goes on until as far back as they can. This is not done for HIV. Slide 6. Here is the a quote from a very well known HIV expert, Haverkos. 'Sexual contact tracing: the standard practice in public health to combat such sexually transmitted diseases as gonorrhea and syphilis has been avoided for tracing of HIV infected persons'. So instead of doing contact tracing, infection with HIV is done by epidemiological studies. However, epidemiological studies prove only correlation and correlation does not prove causation. Furthermore, most of the studies which report are transmission of - sexual transmission of HIV are cross-sectional studies. Next

slide. Slide 8. In a cross-sectional study, here if we look at this light, there will be people here, partners who dance or partners who have wine glasses in their hands and some of them may be found to be HIV positive. The cross-sectional study is a snapshot of time. It just addresses only a given moment in time. When you look at the couple who both have a glass of wine in their hands, it is impossible to say who gave the glass of wine to whom. The possibility cannot be excluded that a third person which is present in this crowd gave the glass of wine to both of them or even somebody who is not even there. They gave the glass of wine and

walked out from there. Similarly, two people are dancing. You don't know who invited whom to dance. When you go and find two people - both of them are HIV positive - it is not possible to say who infected whom. So then the assumptions are made. First of all, the couple is questioned and if one of them admits to a sexual risk, for example, one of the partners admit that he is a drug user and the other one does not admit it, then it is said that their partner who admitted to be a drug user transmits the virus to the partner who doesn't admit to be a drug user but it is impossible to know that the person who denies to be a drug user is not also a drug user or that they did not have sexual contact with other people so there are a lot of assumptions made in the cross-sectional study. In fact, the people who conducted these studies on HIV, they admit that from cross-sectional studies it's hard to prove. You can make some suggestions but it is not possible to obtain proof. Slide 9. In 1981, when AIDS was diagnosed for the first time, it was in gay men. The gay men had two principal diseases at that time. And the diseases one, as I said, pneumocystis carinii pneumonia and Kaposi's sarcoma. As I said, Kaposi's sarcoma is a malignancy but because the gay men - the ones who developed these two diseases - were very promiscuous, immediately the researchers tried to find out if there was any

relationship - what was the relationship of the sexual activity to the development of Kaposi's sarcoma.

CONTINUED

And they found out that the more sexually active the gay men were, or their kind of mobility, to develop Kaposi's sarcoma. The other factors was the use of no drugs -

Q. No drugs being.

A. That there are some drugs which gay men incur. Now, some of the gay men, they are so promiscuous that they have up to 90 partners per month. This is in the literature and this was published. This paper was published in 1982. The same group of researchers who published the 1982 paper, they have tried to find more information regarding sexual activity in the development of Kaposi's sarcoma and they reported in 1984 'The number of partners per month in receptive anal-genital intercourse with ejaculation, the number of occasions of "fisting" ...' - and they define what 'fisting' means - 'the insertion of a fist or forearm into the partner's anus or rectum) in the year before the disease' was the sexual risk factor for the development of Kaposi's sarcoma. Slide 11, once the age of the antibody test was developed, Gallo was the first to report on the relationship between sexual activity and a positive antibody test which he interpreted as proof for HIV infection. I again quote the paper published in 1984 'Of eight different sex acts, seropositivity correlated only with receptive anal intercourse and with manual stimulation of the subject's rectum', that is rectal

trauma, 'and was inversely correlated with insertive anal intercourse'. By 1986, the next slide please, slide 12, in 1986 Gallo published yet another paper. There I am quoting again, they reported 'Data from this and previous studies have shown that receptive rectal intercourse is an important risk factor for HTLV-III infection', that is positive antibody test. 'We found no evidence that other forms of sexual activity contributed to the risk'. In 1987, the next slide 30, now, in the United States, as Dr Turner pointed out, there is a study which started in 1985. In fact, these began men who were in a study already for hepatitis B so

they continued the study for HIV. It is the longest, the best design, the best executed study in gay men, and the largest, 5,000 gay men. By 1985 they reported 'Receptive anal intercourse was the only sexual practice shown to be independently associated with increased risk of seroconversion to HIV', and continuing, 'The hazards of this practice need to be emphasised in community education projects'. 14, in 1994, two HIV experts published a review of all the papers, of all the studies which were conducted in gay men by 1984. There were about 25 studies. By analysing data from these studies, they concluded: '1. 'Unprotected anogenital receptive intercourse poses the highest risk for the sexual acquisition of HIV infection'; that is a positive antibody test. '2. A small risk is attached to orogenital receptive sex. 3. Sexual practices involving the rectum', rectal trauma, 'facilitates the acquisition of HIV', that is a positive antibody test. '4. No or no consistent risk has been reported regarding other sexual practices'. Next slide, 15, 'Conclusions'. The evidence from gay men, from the studies in gay men, show that like pregnancy, 'the only sexual partner at risk for a positive antibody test', that is what is known as HIV, 'is the receptive, passive semen receiving partner', which means that the positive antibody test, like pregnancy, can't be biodirectionally

transmitted; that is that they are sexually transmitted. It cannot be biodirectionally transmitted, sexually transmitted, to the active, semen donating partner. As I said before, the cause of pregnancy is semen and semen is not biodirectionally transmitted. So whatever causes the positive antibody tests, it follows, in gay men, it cannot be a sexually transmitted agent.

HIS HONOUR

Q. I don't understand that, I'm sorry.

A. Sorry, shall I start again?

Q. It is no good starting again and repeating what you have already repeated. I understand the words, I don't

understand the logic, so you are going to have to explain it to me.

A. Now, pregnancy, the only risk partner for pregnancy is the recipient of semen.

Q. Yes.

A. Right, and the woman cannot transmit pregnancy to the man.

Q. No, I understand that.

A. Right. This is exactly what's going on with the sexual activity in gay men. A gay man who is exclusively active cannot - like the man who goes to the pregnancy, a gay man which causes the positive antibody test and is exclusively active cannot ever become positive. He cannot become positive. This is what that shows. If gay men who are divided like is happening in the heterosexual sex -

Q. I understand that proposition.

A. So, you know, this -

Q. I understand that proposition.

A. That's what is happening, right. 16.

XN

Q. You are up to 17.

A. Now, we have already discussed the sexual studies so lets keep this one. Now, let's look at the evidence from heterosexual couples. The first paper -

HIS HONOUR

Q. I'm sorry, let's go back to 16 for a moment.

A. The conclusion?

Q. Yes, the second conclusion 'A positive antibody test can be sexually acquired but cannot be sexually transmitted'.

A. Yes.

Q. That is a question of definition, what is sexually transmitted and what is sexually acquired.

A. No, it is a big definition. It is a definition but sexually transmitted diseases go in both directions. The woman -

Q. One moment. So what you are saying is in order for

something to be sexually transmittable, it needs to go in both directions.

A. That is by definition, by definition; that is what sexually transmitted diseases are, in both directions. It is not my definition. 18. Now let's go on the evidence from heterosexual sex. Again, most of the studies conducted in heterosexual couples are cross-sectional, and the first one again was published by Gallo and his colleagues from the Redfield institute in America and the paper was published in 1985. Now, what Gallo and his colleagues did is to test some military personnel who served in Germany and they found some men to be HIV positive and then they tested some of their partners and they reported that some of their partners were positive. So -

XN

Q. Just interrupting you, that is their partners back in the United States.

A. In the United States, yes.

Q. Not their German partners.

A. No, from Germany, they returned to the United States and in the United States, at the Redfield Army Institute of Research, they were tested and some of them were found to be positive and some of them had AIDS or pre-AIDS complexes, and as I said, they were found to be positive and then they tested their partners and some of their

partners were found to be positive. Now, Gallo speculated, and this is the study which is considered by Gallo and Montagnier as being the first study to prove heterosexual transmission of HIV - what Gallo assumed, and his colleagues, they said these men served in Germany and he assumed that without having any evidence - they assumed that the men were infected by German prostitutes and they passed their HIV to their partners. So this proved biodirectional sexual transmission of HIV in heterosexual couples. However, this study was severely criticised by many researchers, including Padian, the researcher who has done the most

thorough study to date in heterosexual transmission of HIV in the United States, and as I said, many others. First of all, they are researchers who complained that they did not have evidence. First of all, they did not have evidence that these people were infected from German prostitute. In fact, somebody wrote to the journal, they said at that stage no German prostitute was positive. So these men could not have - the assumption that they were infected by German prostitutes was not correct.

MR BORICK: Just before we adjourn, I just want to clarify some aspects of your concern and I will do it in this way. If you look through the list of slides before you, you will see the references to the various publications which the witness is referring to.

HIS HONOUR: Yes.

MR BORICK: For example, they are in 6, 9, 10, 11, 12.

HIS HONOUR: Yes.

MR BORICK: Then, when we go to deal with the studies, we see we are dealing with the specific studies, the European study group and so on.

HIS HONOUR: Yes.

MR BORICK: All of these are published scientific documents which all experts in this case have access to and your Honour can read them all too, but they are all

a matter for the study of a scientific area.

HIS HONOUR: Yes.

MR BORICK: It seems to me that your Honour would have to accept that the person who is capable of gaining expertise by study, all the law says you can.

HIS HONOUR: I accept that. You don't have to necessarily have qualifications.

MR BORICK: A study must include the study then of the major studies and I was wondering whether your Honour would accept that as an argument.

HIS HONOUR: Of course I will because clearly a person can develop their expertise through experience, through

study, through qualification, through a multitude of ways of gaining their knowledge. Of course I accept that. I accept that as a proposition of law.

MR BORICK: I am just wondering whether you want me to lead from this witness any more details about that particular study she has undertaken, or do you accept that she has read all these documents?

HIS HONOUR: She tells me she has and I accept that. There is no basis upon which I wouldn't accept it.

MR BORICK: And as your Honour well knows, in her expert evidence, and you have seen as many times as I have had police officers give expert evidence based entirely on experience.

HIS HONOUR: Yes, I understand.

MR BORICK: And that she has got.

HIS HONOUR: Yes, I understand.

MR BORICK: Just another topic, I have indicated before that these witnesses would like to return to Perth and we have got to book some flights. If they are not going to be cross-examined tomorrow, and I still don't think there is any possibility of that happening, I was wondering if my friend can help me. Is she prepared to take up the offer of more time?

MS MCDONALD: I understand there will be an application for home detention bail if this matter has to be put off, and secondly, I understand it may be suggested that

we push on for a certain time.

HIS HONOUR: There is another alternative to that, Ms McDonald, and that is that it may be, and I was going to raise this with counsel at some stage, this is a somewhat long, drawn out process at the moment and although, when I was initially asked not to sentence, I didn't sentence, I'm not sure whether I ought to go ahead and sentence and then any appeal in respect of the conviction and sentence can go forward together, and if the material which I am hearing is relevant to sentence then an appellant court can deal with it as well. That is just one matter I raise.

MS MCDONALD: Can I say obviously that's the course that's normally adopted and at the outset we did ask your Honour to sentence, but then agreed, on really a pragmatic basis, that there would be no issue with it being delayed. Really, there is no practical reason, as I see things, as to why the sentencing process shouldn't commence and be completed.

HIS HONOUR: I don't express any view about it at the moment, but it's a matter that has been concerning me, that this is taking a long time, and I'm not critical of anybody about that, but it has taken a longer time than I anticipated it would take and it is certainly going to take a longer time. But anyway, if there is an application, there is an application, I will deal with the application, whatever that application may be.

MS MCDONALD: So just to finish off, to make my position clear. If my learned friend is in a position in which his experts need to go back to Western Australia I'm not going to stand in the way of an adjournment and, to be frank, of course it's going to further assist us if we can actually get the articles that the experts have relied on. But I don't want it said that the prosecution delayed the process, hence that adds some sort of weight to Mr Parenzee's bail application.

HIS HONOUR: That's really not an answer to the

question, Ms McDonald. The question was: do you want to proceed to cross-examine these witnesses or - not this afternoon, as you've indicated -

MS MCDONALD: Certainly not this afternoon.

HIS HONOUR: - first thing tomorrow or would you prefer some time in which you can get your material together, consider it, take any instructions, so that you can fully cross-examine? What I don't want to happen is that you start cross-examining and then say to me 'Look, I need more time to get more material'. You have to make a decision about that.

MS MCDONALD: I accept that and in part I'm hamstrung

in terms of not knowing how long it is going to be before I get the information from the experts, but realistically, yes, I would prefer more time.

HIS HONOUR: If that's the case Ms McDonald, can we agree that these witnesses can go back to Western Australia tomorrow -

MS MCDONALD: Yes.

HIS HONOUR: - or later today?

MS MCDONALD: Yes, as soon as they have finished their evidence-in-chief.

HIS HONOUR: That means that you won't be calling any of your evidence, doesn't it?

MS MCDONALD: That would seem to flow given that your Honour has already expressed some views.

HIS HONOUR: Let's talk about that, maybe that is something that we will talk about after the evidence has finished, but Mr Borick, does that help you?

MR BORICK: Yes. Yes, it does because it answers the question, the specific question at the moment and I'm fully aware of all the problems that are ahead. But on the issue of proceeding to sentence, if your Honour has already put the proposition to the prosecution, I have the transcript here, that Padian's figures are right, then that may well affect the sentencing process and you heard that discussion and I'm very surprised that my friend has indicated that they are going to attack one

of their stronger supporters, Padian. I don't ask your Honour to make any -

HIS HONOUR: No, I'm not making any statement about anything at this stage, but really the short question is whether your witnesses can go back. The answer is yes.

MR BORICK: Yes. When they are finished their evidence I will deal with this issue of sentence then.

HIS HONOUR: If it arises at that stage, yes. We can deal with it once these witnesses have finished.

As far as the resumption of their evidence, you did indicate that they could be cross-examined by video link.

MR BORICK: I will be doing that with their experts.

HIS HONOUR: Ms McDonald, have you any view about that?

MS MCDONALD: It's not the best option. Can I indicate that at the moment there are two expert prosecution witnesses. At the moment we are investigating one of those witnesses actually coming to South Australia. So, in all likelihood, hopefully, depending on when we resume, it will only be the one video link out of five. I accept these people are busy and if there is no other way, we can live with the video link. I would have thought the cross-examination would take a bit of time.

HIS HONOUR: Can I indicate this to both of you because it relates to all witnesses, not just Mr Borick's: I prefer, for evidence of this kind, to have the witnesses in the witness box. Video link has obvious advantages in certain types of cases but I would really prefer to have the witnesses here and that applies to both sides.

MS MCDONALD: And that's why we have endeavoured - it's actually Dr French.

HIS HONOUR: Where is Dr French resident?

MS MCDONALD: Professor French.

HIS HONOUR: Professor.

MS MCDONALD: He is also from Perth. In fact, from the same hospital that's been referred to.

HIS HONOUR: I would prefer to have him here rather than having him give evidence by way of video link.

MS MCDONALD: Those arrangements are under way.

HIS HONOUR: I know people are busy and I know Perth is a fair flight, but you know people travel around the world these days and I would prefer to have the witnesses here.

MS MCDONALD: That's why we are looking at it as recently as this morning.

HIS HONOUR: Thank you. We will adjourn until 2.20.

ADJOURNED 1.11 P.M.

RESUMING 2.22 P.M.

MR BORICK: With reference to the concern that you expressed about the expertise, you will recall there was an affidavit from a third member of the Perth group.

HIS HONOUR: Yes.

MR BORICK: Helman Alfonso. He is in Chicago at the moment and we have decided now to call him, but the evidence on all of these issues has been a collaborative effort of the Perth group, of which he is a member. He is a senior lecturer in epidemiology and statistics at the University of Western Australia, apart from having his own expertise in this area, and that's the same degrees as Padian has, for example. So there could be no issue about his expertise to give this evidence. So he will be back, I think, on Tuesday or Wednesday or thereabouts and I will arrange, one way or the other, for him to give evidence which I hope, rather than have to repeat all of what Mrs Eleopulos has said, he can confirm it by one way or another.

HIS HONOUR: If you intend to call him, he can read the evidence -

MR BORICK: That's what I said.

HIS HONOUR: - given by the witnesses, and then you can examine him based upon having read their evidence, and he can be cross-examined accordingly.

MR BORICK: That's right. I'm not asking your Honour

to decide any question of the expertise of this witness on the sexual transmission evidence, because you haven't heard all of the evidence yet.

HIS HONOUR: No.

MR BORICK: But I take it you would accept the fact that a person is qualified in the area of epidemiology and statistics, which are the basic qualifications I could think of, then that would be acceptable.

HIS HONOUR: As I have indicated, I don't suggest for a moment that the witnesses you have called are not acceptable. I just raised an issue with you but clearly, I mean if you intend to call him, then you

qualify him and I will hear his evidence, obviously.

MR BORICK: I don't want my learned friend to think this is going away, because it's not.

MS MCDONALD: I didn't think that for a second.

MR BORICK: We got up to -

HIS HONOUR: 19.

MR BORICK: Yes.

HIS HONOUR: The one that is up on the screen at the moment is 18.

MR BORICK: Yes.

XN

Q. We had just moved to 19.

A. No, as I said, there are many problems with this study which is considered by Montagnier as being the first one to prove bidirectional sexual transmission in heterosexual individuals. I started by saying that they assume - first of all, they assumed that the military men were infected by prostitutes in Germany, and they did not have - and it was, in fact, people who wrote in to the journal where this paper was published who said at that time, there was no evidence that prostitutes in Germany were infected with HIV. In fact, Montagnier did not only assume that these men were infected by prostitutes in Germany, but they assumed that the prostitutes in their turn were infected by other heterosexual men. The second problem there, and one of

the main problems, was that they did not have proof that the men who tested positive were not actually bisexual men, and all they did, they said - they had some trainers, interviewers, to question them, then they said they had physical examination and rectal swabs for gonorrhoea, and they said they did not have these diseases. They inquired of family members and friends if this man was bisexual so, from this, they concluded that the men were not bisexual and were telling the truth to the military doctors, but again, there were objection to this interpretation because, I will give you all; one doctor who wrote to the journal, he found

out that military men do lie about their sexual orientation, and he presented his data. He had 20 HIV infected military men and who were interviewed first by military men, and subsequently by civilian case investigators.

Q. To be fair to military people, that perhaps occurs because of their position in the army and affecting promotion and where they're stationed, things like that.

A. Yes. This lie is talked about itself. The men were interviewed, if they belong to any risk factors, by military men and by civilian men. To the military men, only four of them admitted to being homosexual/bisexual, one admitted to being intravenous drug user, and the other 15 were undetermined. But when the same people were interviewed by civilian doctors, 14 of them said that they were homosexual/bisexual, three said that they were intravenous drug users, and only three remained undetermined. So the authors of this paper said yes, military men do lie and they have reasons for lying because, first of all, there will be - if they - if at that set time, I don't know how it is now in America, but an HIV positive man and a gay man at that time would have been - would have lost their job in the army.

Q. My understanding of this survey was that each of the individuals, the 20 individuals, had left the military service when they responded to the civilian

investigators.

A. Not the civilian, because the civilians are not obliged to tell -

Q. Sorry, I have may have misunderstood; I understood that each of the military personnel had left the services when they responded to the civilian -

A. I don't know about that.

Q. That was my misunderstanding.

A. But that is what was happening, that was the law then, that military men, or gay men, who are HIV positive, they had to lose their job. So that study, as I said, was severely criticised and no-one can rely on this

study proving bidirectional sexual transmission.

Q. I think you're now moving to a survey of the various study groups which have taken place since about 1984 or thereabouts.

A. Yes. In our study, we were addressing different studies, or studies in different groups, so we start with the prostitutes, because if any group, heterosexual group, were going to be found as HIV infected, then it should be prostitutes, because prostitutes are the most promiscuous heterosexuals. There are several reasons why, apart from the fact that they are very promiscuous, why the prostitutes should have been infected, because the safe sex campaign started in 1986/1987, and by that time there were many by sexual and homosexual men who are HIV infected and, as you see from what I am quoting now, there are many of these men who are having sex with prostitutes. For example, in this study, in this study of men who had sex with female prostitutes, more than one-third reported having had sex with other men. So one-third of the men who are having sex with the prostitutes, they also having sex with other men and, by then, there were many homosexuals who were infected, so one would have expected this is a very good reason for prostitutes also to be found to be infected. Slide 22. This is a study reported from prostitutes in London. 50 women, they had 7-100 customers per week, they were

prostitutes on the average for 4.1 years. 41 of them had had oral sex, 9 anal sex, and three used drugs. None of them was found to be infected. That was in 1985. Slide 23. Here is another study published again from England and it was 1992, in Glasgow. They divided the prostitutes into prostitutes who are using intravenous drugs and prostitutes who are non-drug users. Of 127 prostitutes who were using drugs, six were found to be positive. Of 165 who are not using drugs, none, zero, were found to be positive. Slide 24. Now there are many other studies conducted in other centres, again all with non-drug using prostitutes. For

example, one published in 1985: there were 56 non-drug users, 15-25 customers daily, they are not using protection routinely. Zero was found, none of them was found to be positive. Another study published in 1986: 101 non-drug using prostitutes, they had, on the average, 20 clients per day. One-third was not using condoms and none of them was found to be positive. Similar findings were reported from Paris and Copenhagen. Slide 25. A study published from Australia in 1991. It was admitted that at that stage still there were prostitutes who are at risk of developing a positive test, like prostitutes were not, they were not always practising safe sex. There were 231 prostitutes. 19 of them had bisexual partners, 21% with no drug using partners, 69 were using condoms with clients, and condoms were rarely used with non-clients, and they are not even using condoms for anal sex. Slide 26. Now no-one was found to be infected. There has been no documented case of female prostitute in Australia becoming infected with HIV through sexual intercourse. That was published, as I said, 1991. Slide 27. This slide was conducted in the Philippines. They were testing from 1985 to 1992. They tested 53,903 prostitutes. 72 were found to have ELISA and 'a confirmatory Western blot'. This - first of all, there are a few things to be said about this finding. The 72

prostitutes out of 53,903 tested is so small that no test, even if the test was nearly 100% specific, you will find 72 to have false positive. Secondly, as the authors wrote 'All infections have been acquired -' they said '- through vaginal intercourse with heterosexual men'. 'Intravenous drug use was denied in all cases'. Just because they denied, that does not mean that it was not happening. Furthermore, they said that 'The majority of seroconversions occurred prior to 1989 and the rate declined significantly after 1987'. One wonders if this has anything to do with the changes of criteria of zero positive test.

Q. Have you finished with 27.

A. Yes.

Q. I think you're moving now to the first of six slides which deal with the various European study groups.

A. Yes.

Q. Perhaps we can put up the first slide, but in the course of giving your answer, could you refer to the criteria for Western blot tests related to his Honour's questions of Dr Turner this morning.

A. Now in the European study, initially they had nine centres from six countries, but then it was more than six countries in the second part of the study. Now the they test each country and each centre used its own criteria. They don't say what are the criteria. Now this is very important, I mean the fact - Mortimer says - he is the director of the reference laboratory in London - there are many problems with the Western blot, so many that he is not even using it to prove HIV infection, but the two main problems with the Western blot are that no Western blot, not even one Western blot, has been confirmed as proving HIV infection by using a gold standard, that is by using HIV as a world standard. The second is that Western blot is not standardised.

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And it is not only that it is not standardised but the criteria vary so significantly from one country to another country. As I said, if you have somebody who is tested in South Africa, for example, and is said to be positive, he could come here in Australia and because we have totally different criteria for a positive test, then the person will be said not to be infected. Can you imagine somebody again, say in South Africa, being found positive for syphilis in South Africa and then when he comes to Australia, he is not positive for syphilis? This is not done. The same thing, just imagine that we have a woman who is proven with a test as having breast cancer in America in the USA and then she comes here, and the doctor sees the same test and he says 'No, this test does not prove breast cancer in Australia'. It is the test. It is not the interpretation of the breast cancer test because doctors can make mistakes when they interpret breast cancer but it is not the same pattern - the same doctor - in America he will be obliged to put it as being cancer and in Australia, as not proving cancer. That's how big is the difference. That's how big the problem of non-standardisation of the Western blot is and that's what they have done in the European study. Each country in each centre use their own criteria for interpretation. Now, the first studies imported from

Europe were cross-sectional but there were so few heterosexual people which tested positive, that they have to collect all these people for the first study - the 1989 study - all these people from six countries to come with a number and in how they define who transmitted whom where again they went and questioned. As I said this is cross-sectional study. They went and questioned the couple and if one of them admitted the person belonged to a risk factor, then that person was considered and that person was called the index case and was called the index case and was said to transmit the virus to his or her partner and this study, at this

moment, they did not have any evidence for sexual transmission from male to female. They only publish what happen from male to male, not from male to male so they had 153 men which included 92 intravenous drug users, 33 bisexuals and five Africans and they had 55 partners, women - and 27% of the women were reported as positive. Next one. 29. This is slide 29, the second slide from the European group. They reported that in this case, the only sexual risk factor was anal intercourse. Sexual practices other than anal intercourse were not associated with infection of the partner. So we are here only interested in the sexual act. This women, the 27%, the possibility cannot be excluded that they were infected by other means but as far as sexual intercourse is concerned, the only sexual act, the only risk factor was anal intercourse. 30. Now this is again, a European, a continuation of the Europe study. This time they had 151 male and 388 male partners. Most of the cases were IV drug users which, according to Nancy Padian, their partners may have been also drug users but they are not admitting it. Now 12% of the male partners were found to or were reported to be infected, likely to have a positive test and they said this meant they had a risk factor other than heterosexual contact but just because they deny doesn't mean it did not happen and 20% of the male partners were

reported as infected and again, anal sex was the only sexual act which was a risk factor. Slide 31. We are continuing again with European study group 1994. This is a prospective study when they had, as I said, the cross-sectional study and in 1994 they reported results from a prospective study and this is known as the de Vincenzi study. The study started in 1987 and ended up in 1991, March. They had 378 eligible couples. They had 10 centres from eight countries. 74 of the individuals were lost to follow-up. 11 of them refused to give any answers regarding their sexual behaviour. 124 out of the 256 used condoms. Antibodies became

positive in 12 out of the 256 partners of which eight were women and four were men so from 1985 to 1995, from 10 centres in 10 European countries, they could come up only with four men who are said to be infected by heterosexual sex. Slide 32. As I said, 167 of 245 couples were IV drug users. 27 were bisexual contact. 41 were heterosexual, seven African men and women, 22 European men and women. 12 were unknown so that means the majority of the people were intravenous drug users and I repeat, Nancy Hadian stresses again and again, anyone can lie but the people who are partners of infectious drug users, they have a much higher probability for themselves to be also drug users. Slide 32. None of the men, as I said, were questioned about oral drugs. That is important because at least people who use cocaine - they have no IV drugs - can have even a higher positive range of the antibody test than people who use intravenous drugs. They don't say what was the origin of the four men. Were they Africans? Were they European? Because many of the people who are in the eight European countries came from Africa and again, they give no criteria at all for what a positive test meant. Again, all seroconversions occurred during the first 24 months of exposure. None of the seroconversions occurred after the 24 months of exposure; no difference in seroconversion rates between

couples who used condoms 50% of the time and those who did not. This indicates that there may be some problem with the assumption that the men and the women acquired this positive test by sexual conduct and again, this study - 34 - the study was again severely criticised including by Brody. He wrote to the editor of the journal who published the European study group findings. 'To the editor: the problem of subjects lying, often euphemistically called "social desirability", responding about engaging in anal intercourse and intravenous drug use plagues most studies of the behavioural risk factors for the transmission of HIV and the study by de Vincenzi

and her colleagues is no exception. How was the absence of homosexual contact verified? How was the absence of anal intercourse among the women verified? Only four men and six women among the 121 couples inconsistently using condoms lied -' sorry '- if only four men and six women among the 121 couples inconsistently using condoms lied when they denied engaging in anal intercourse or misrepresented the facts for other reasons, there would be no cases attributable to vaginal intercourse without a condom. At least this much lying should be expected'. He continues - slide 35 - 'Before vaginal and anal intercourse are assigned comparable degrees of risk and condoms given the credit for saving lives, the alternative explanation that the disease is spread almost exclusively by anal and intravenous transmission must be more rigorously examined'. Slide 36. 'De Vincenzi responded to Brody. She said 'We agree with Dr Brody that our prospective analysis lacks statistical power to show an increased risk associated with anal intercourse. Indeed, we found such an association in the cross-sectional analysis. However, from a public health point of view, no-one should state that there is no risk of HIV transmission through vaginal sex, since the vast majority of cases of AIDS throughout the world are acquired in this manner'. In other words, de Vincenzi, that is, the principal author of the European

study, who lasted from 1984 to 1994, admitted that in Europe they did not have proof that a positive HIV antibody test or what is known as HIV is acquired through sexual - through heterosexual sex but she said 'We have to admit' - 'We have to accept it because that is what is reported from everywhere else throughout the world but throughout the world, we have no evidence'. Slide 37.

Q. Are you now moving to the University of California studies. This is the work of Nancy Padian.

A. Yes.

Q. I think the next eight slides are involved in this.

A. Yes.

Q. Can you start now.

A. I think I mentioned this study before. This study is the longest, largest, best designed, best executed study anywhere in the world. It was conducted by Nancy Padian and four colleagues in California. Now again, most of the publications from these studies are from cross-sectional findings. The study started, as I said, in 1985. By 1987, she published a paper entitled 'Male to male transmission of human immunodeficiency virus', so by then she had no evidence - she had evidence only from male to male transmission. She reported 'Overall 23% of the women were infected. The total number of exposures to the index case, sexual contacts with ejaculation, and the specific practice of anal intercourse also with the infected partner, were associated with transmission'. So again, we find anal intercourse, the risk factor for the acquisition of a positive test. She continues 'Anal intercourse significantly discriminated between seronegative and seropositive women'. 38. We must point out here, I want to stress this: that Padian reported that the number of sexual exposures with ejaculation and not the number of sexual partners - that is not promiscuity - was significantly associated with a positive test. Next one, slide 39. In 1988, at the fourth international

AIDS conference, Padian reported 'We have enrolled male partners of infected women. In spite of repeated unprotected sexual intercourse, median number of sexual contacts, 399, none of the 20 male partners was infected'. Now, can you imagine 20 men having sex, 339 times, each of them, with a person who's been infected with syphilis or gonorrhoea and none of them becoming infected and this is what this slide tells us in regard to a positive HIV antibody test. Slide 40. As I say, the study started in 1985 and only by 1991, Padian was able to report sexual transmission from woman to man. She first reported that she had 307 partners of infected

men and 61 women. Again she reports the male to male transmission, 20% positive and she had 72 male partners of infected women. She found only one male positive but there were - she had doubts and I'll give another slide - she had doubts that even this person was infected by the lady because they had some - she describes some very unusual sexual practices and was including the whole partner watching somebody else giving sex with her and then him having sex and bleeding from the genital tract in both of them. There were some unusual practices and they are described in her paper. Slide 41. She concluded, as I said, she had herself doubt that this man was infected by the woman. She said 'Even though we have no reason to suspect the accuracy of our risk histories, because both partners in this case history were not monogamous, we cannot be absolutely certain that we correctly classified this case as male to male transmission'.

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That is, it is possible that the discrepancy between the efficacy of male to female compared to female to male transmission in this study could be even greater'. That means that even she admits again that these men may not have been infected by the woman, and even by 1991, she could not have come to proof of sexual transmission from woman-to-man. She also adds 'Of course, because we are relying on risk factors, the same caveats apply to classification of male-to-female cases of transmission as well'. In other words, even the transmission from female-to-male from male-to-female can be questioned. Slide 42, in 1997 she published her results and the paper is entitled 'Heterosexual transmission of human immunodeficiency virus (HIV) in Northern California: results from a 10 year study'. She had 360 female partners of infected men. She said 19 were found to have a positive test. 'Anal sex in the index case who acquired HIV by IV drug use were the main risk factors for a positive antibody test'. Slide 43, again we continue with the cross-sectional study in 1997. This time she had 82 male partners of infected woman. Two out of the 82 men were reported as positive. One of the men was the same man she reported in 1991 and she had doubts about the validity. The second man she also had doubts and for a number of reasons, including that the man had chlamydia infection. She calculated from a

cross-section of study the capability of transmission per coital act and the male-to-female probability was 0.0009. The female to male was 0.000125.

HIS HONOUR

Q. It is actually 0.000125; three 0s in 9 and three 0s in 125.

A. Slide 44. Padian commented on their findings and she said why we find so little transmission comparing to what other people recorded. She wrote - in here, when she gives the evidence, she is including study by Redfield and Gallo. She said 'Other studies may not have adequate control for other concepts founding

nonsexual routes of transmission such as risks associated with intravenous drug use. At first blush, cases that appear attributed to heterosexual transmission may, after in-depth interviewing, actually be linked to other sources of risk because partner studies are by definition not random samples, and most reported results are based on retrospective or cross-sectional analysis. Some studies may over-select couples in which both partners in a couple are infected because such couples may be more easily identified, thus biasing transmission rates. Furthermore, it is often difficult to establish the source of infection to such couples'. So, she questions all the test studies, the cross-sectional studies, including for heterosexual transmission of HIV. Slide 45, a study was done in Rakai in Uganda which involved 15,127 individuals. These individuals were followed for four years and they conducted different studies in these people. After four years they looked back to find out the antibody status of these people and from there they reported, and I quote, '171 monogamous couples, in which one partner was HIV positive, were retrospectively identified from a population cohort', and they calculated their probability of transmission per coital act and they found out male-to-female was 0.309 and female-to-male was 5.2013. The same study was reported, the same

finding. One of the principal authors was Gray and the other time it was Wawer in 2005. The analysis was different. The study was exactly the same. Slide 46, we have analysed the cross-sectional evidence from the Padian study and the evidence from the retrospective study in Uganda and published a paper in the British Medical Journal with our analysis. Taking into consideration the probability of the transmission reported per coital act reported in these two studies, we came mathematically to these results. If somebody has sexual contact once every three days, with an infected partner, in the United States, the woman to be

infected by a man, for a 50% probability she has to have, as I said, sex every three days for 6.3 days. For a probability of 95%, she will have to have sex with an infected man for 27.4 years.

XN

Q. You said 6.3 days. You mean 6.3 years, I mean.

A. Yes. Sorry, no, I said every three days. She has to have sex every three days.

HIS HONOUR

Q. Yes, for 6.3 years.

A. Yes, for a 50% probability, and for a 95% probability, 27.4%. For a man to be infected by a woman, for a 50% probability he will have to have sex with the woman every three days for 51 years, and for a 95% probability he will have to have sex every three days for 222 years. The findings from Uganda, let me don't repeat it. As you can see, it is similar.

HIS HONOUR

Q. Yes, I can see. It is not quite similar for female-to-male but for the others it is.

A. Right. Would you like me to repeat it?

Q. No.

A. Shall I repeat it?

XN

Q. I just want to make it clear that it is a mathematical study performed by the Perth group, taking Padian's

Uganda figures.

A. Taking Padian, we did the mathematical -

HIS HONOUR: Yes, I understood that.

XN

A. Slide 47. In the paper, as I said, we published this letter in the British Medical Journal in 2002 and in that paper we concluded 'In other words, there is no more heterosexual transmission of HIV in Africa than anywhere else, including Britain, the United States, Australia and Europe'. Slide 48, now, in Rakai, again in Uganda, there was another study which was the results published in 2003. The authors had sexual behaviour

education implemented on a huge scale and with great care and commitment. They found out that after this - people who are educated or who were having sexual education, this reduced infection with gonorrhoea, syphilis but no effect, no effect on HIV, which means that there are dissimilarities between gonorrhoea and syphilis and HIV.

Q. I will take you back to slide 47. Without going back to it on the screen there, that was a letter written by you and perhaps other members of the Perth group which was published in the British Medical Journal in 2002.

A. Yes.

Q. And it dealt with the topic of sexual transmission.

A. Yes, we dealt on the topic of sexual transmission. We had nearly two years very intensive debate online in the British Medical Journal and this was again and again - I mean not this, this data and sexual transmission was discussed repeatedly. Now, this is slide 49. As I said, the Padian study consisted of cross-sectional, which are most of the reports and everything we have discussed until now, and a prospective part. In the prospective part she had 175 antibody discordant couples and they were tested every six months. That is, she had one couple was positive, that would mean discorting couple, one couple was positive and the other was negative, and she had 175 couples and they were

discordant couples.

Q. What do you mean by 'discordant'.

A. One of the partners was positive and the other was negative.

HIS HONOUR

Q. So you had couples and either the male or the female was positive.

A. Right. Now, nobody, in all this time she has done this study, became positive, although, even after so long in such an intensive education on safe sex, at the end of the study - at the beginning there was only 30% of couples who were using condoms and at the end of the

study only 75% reported consistent condom use in the six months prior to their final follow-up visit. So they are not practicing safe sex and they is still in the prospective study, which is much better, not 100% proof. She did not have anyone becoming HIV positive.

Q. The next five slides relate to various studies conducted on haemophiliacs.

A. Yes.

Q. Can you just take us through those.

A. Now, if anyone should have positive by now it is partners of haemophiliacs. Because by 1982 - because some haemophiliacs were tested because there were some haemophiliacs whose blood was taken from haemophiliacs as far back as 1982, but certainly about 1985, '84/'85, about 75% of haemophiliacs was testing positive. By that time there was no sexual education. So if anyone should be found positive, it is the haemophiliac partners. The first haemophiliac report, the first report of a haemophiliac partner being positive, was reported in 1985. It also found one partner of a haemophiliac to be positive and that was the only person, the only sexual partner who was found to practice anal sex, and they concluded 'It suggests that HTLV-III', that is HIV infection, 'may be facilitated by the practice of anal intercourse as it appears to be in homosexual men'.

Q. I'm not sure whether you made it clear but all of the haemophiliacs you were referring to were men.

A. Yes, they are men. Again, one of the first reports, in fact I think it is the second report of a haemophiliac partner being infected, was published by Montagnier in 1985. They were at the same time reported. This was a lady who practices, or a haemophiliac partner, and she was followed for 10 months. She practiced vaginal intercourse and anal intercourse and she was found positive. Then she was advised again of having sex, or if she was having sex, to have protection. She was

followed up for 10 months after exposure to her husband's semen was discontinued, and as I said, when she was first tested, not only was she found positive but she had low T4 cells. When she discontinued the practice of anal intercourse and she was followed for 10 months, her T4 cell became normal and for positive antibody test it became negative.

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Slide 52: now here you have another study from the Netherlands. 151 female partners of HIV positive haemophiliacs from New York, Miami, Detroit, Seattle, San Francisco and Los Angeles. Followed for 2.3 years. Condoms used for 6%, never 45%. 13 ladies became pregnant. None became HIV positive. Sorry, this was from California. The other study was from the Netherlands. 11 HIV positive men had unprotected sex between 1,563-2,250 times. No women became positive. Slide 53: again haemophiliacs. 36 sexual partners of 66 HIV positive haemophiliacs. 7 of the men had AIDS or AIDS-related complex. 31 had sexual contact for at least 3 years, 20 of them for 8 years. All partners ELISA and WB negative. The follow-up was for 5 years. Slide 54: now, here is another quote. There was quote 'Although during 1987 the number of couples using condoms has increased through risk-reduction education, it does not seem that the lack of seropositivity in the spouses is due to a disproportionately higher use of barrier contraceptive devices'. 'The most likely value of the probability of infection, within 25.8 months for this group of 36 heterosexual partners is zero'.

MR BORICK: The final three slides, conclusions, his Honour is able to read for himself. Really why I am saying that is -

HIS HONOUR: They are conclusions of the witness?

MR BORICK: Yes.

HIS HONOUR: I understand.

MR BORICK: The only reason why I am just saying this is that we can get away in about five minutes and they can get the flight to Perth they are hopefully booked on. Has your Honour got any queries to make of her?

HIS HONOUR: No.

MR BORICK: They are her conclusions; straightforward enough. That concludes the examination-in-chief of these two witnesses.

HIS HONOUR: Well, Ms McDonald, you have no objection if the witnesses are released for the moment?

MS MCDONALD: Yes.

HIS HONOUR: So you are free to go now.

NO FURTHER QUESTIONS

WITNESS STANDS DOWN

+THE WITNESS WITHDREW

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MR BORICK: We have got a bit of housekeeping to do. Could I have a five minute adjournment to check on cases?

HIS HONOUR: I will leave the bench for five minutes.

MR BORICK: I take it we will be doing a bit of housekeeping.

HIS HONOUR: I really want to ascertain - I assume from what you said you intend to call Dr Parada.

MR BORICK: Yes. I think his evidence will be short.

HIS HONOUR: I understand that but his cross-examination may not be quite as short. Ms McDonald, given that, what does the Crown wish me to do? What does the Crown suggest happen now? I know you have got witnesses organised but, do you want to start calling evidence before you have had a chance to absorb all of this material?

MS MCDONALD: I am not going to suggest that the Crown should call its witness before cross-examination occurs. I think we are stuck with the situation that the next thing that needs to happen after the next witness is called is cross-examination of the applicant's witnesses and then I will call my witnesses. So, yes, it is going to be very difficult to reschedule them all, but I think we have no other choice.

HIS HONOUR: Mr Borick, do you want me to leave the bench for a few minutes or get on with this discussion

now?

MR BORICK: If you give me about four or five minutes.

ADJOURNED 3.28 P.M.

RESUMING 3.42 P.M.

HIS HONOUR: Well Ms McDonald, we have to find another date firstly when - is it Dr Parada? Yes, Dr Parada can be called.

MS MCDONALD: Yes.

HIS HONOUR: That is the first thing and two witnesses can be cross-examined.

MS MCDONALD: Yes.

HIS HONOUR: I think probably they should be cross-examined before Dr Parada is called shouldn't they?

MS MCDONALD: I am not too fussed about that.

MR BORICK: Dr Helman Alfonso -

HIS HONOUR: My affidavit says Helman Alfonso Sabdl Parada.

MR BORICK: I don't know where the Parada comes from.

HIS HONOUR: That is his name according to the affidavit.

MR BORICK: What I want to do with him is - he details in his affidavit that he has read the evidence or knows about all the evidence that was given and agrees with it totally. I don't see the point in him just coming in and repeating all that has been said.

HIS HONOUR: I understand that.

MR BORICK: Then he is available for cross-examination.

HIS HONOUR: I understand.

MR BORICK: He is being called for that purpose because of your Honour's concerns you have raised about the issue of expertise.

HIS HONOUR: I mean, who you call is a matter for you.

MR BORICK: Very specific: he is being called because you raised that issue and we will meet it. That is the way I suggest we do that. Then I would have thought we

would need to move immediately into the cross-examination of Ms Eleopulos. The big trick is finding the time for that.

HIS HONOUR: Then, after the cross-examination of the three witnesses, we will have to move into evidence of your witnesses.

MR BORICK: I am wondering whether my friend has any idea of how long she is going to take. I know it is difficult.

HIS HONOUR: In cross-examination? I don't know. Indeed, do you have any idea?

MS MCDONALD: It is a bit difficult because I don't

have a sense yet of how either of these witnesses will answer questions. Certainly at least a day.

MR BORICK: For each one?

HIS HONOUR: For each of them.

MS MCDONALD: Very difficult.

HIS HONOUR: Knowing the way the wheels of the law turn, I would have thought two days for the three witnesses. Maybe even that is optimistic but at least two days for the three witnesses I would have thought. But now that we are going to have a break, you can have an opportunity A, to consider their evidence and B, to provide their evidence to your relevant experts so that they understand exactly what is now being put.

MS MCDONALD: Yes.

HIS HONOUR: Because it seemed to me on reading the reports, now I have heard the evidence, perhaps the reports don't entirely deal with the matters that have been dealt with in evidence, if they deal with them at all.

MS MCDONALD: No, given the advice I have been given along the way there is some very short answers to some of this.

HIS HONOUR: It may be that that is another issue. Well, I would think realistically we need what, two days for the completion of the defence witnesses and two or three days for your witnesses I would have thought at

least.

MS MCDONALD: Longer I would have thought now. I would have thought realistically the first couple they may take the longest because the larger number of issues would have been canvassed with those. I would have thought five working days.

HIS HONOUR: With addresses taking close to two weeks.

MS MCDONALD: Yes.

HIS HONOUR: Give or take a day or two.

MS MCDONALD: Yes.

HIS HONOUR: What is the availability looking like Mr Borick and Ms McDonald?

MS MCDONALD: I don't have any idea about movements of the witnesses at the moment.

HIS HONOUR: I understand that.

MR BORICK: At least get the cross-examination. We won't be able to set an agenda for prosecution witnesses. We will do the best we can.

HIS HONOUR: We will do the best we can and I may have to have a directions hearing, but the first thing is look at your dates and then worry about - Ms McDonald, you are not available, you are starting a trial on the 6th?

MS MCDONALD: Yes, my situation is dreadful. I am starting a trial on the 6th listed to go until Christmas before David J. I don't think he will let me have two weeks off. I am free all of January and then I have a murder trial February, a murder trial March.

HIS HONOUR: You may have to flick your February murder trial.

MS MCDONALD: It is a retrial, that is the only difficulty. If I have to, I have to, but it is a matter - I did the first trial - it has been sent back for a retrial by the Court of Criminal Appeal.

HIS HONOUR: What matter is that?

MS MCDONALD: That is the matter of Dunn, the one in which Anderson J gave an aid-memoire. I think your Honour may have been on the quorum.

HIS HONOUR: I think part of it is one of my judgments. That is not a case that someone else can't pick up.

MS MCDONALD: No, it is not something that someone can't pick up.

HIS HONOUR: There are certain cases where it is difficult for someone to pick up but I wouldn't have thought that falls into that category, so someone else can do that.

MS MCDONALD: They could.

HIS HONOUR: What are you like in February, Mr Borick, because it realistically is not going to happen this

year. I mean, I could give you a couple of days right at the end of December, running into Christmas, but that would then be dependent on Ms McDonald's trial being finished.

MR BORICK: What is the reality for that?

MS MCDONALD: Mr Lyons keeps saying it will go past Christmas. I say we have got David J so it will go less than two months.

HIS HONOUR: It would have to be the week commencing 18 December.

MR BORICK: Could we at the moment pencil in those days?

HIS HONOUR: I can pencil them in.

MR BORICK: In a couple of weeks time we could have a directions hearing.

HIS HONOUR: I can pencil in a couple of days in that week and I can indicate to you that you can pencil them out right up to that week because it is not a week in which I have listed anything and I am not listed to be sitting that week. So, from the court's point of view I am happy to list it in that week and we will just see how Ms McDonald's trial is going I suppose.

MS MCDONALD: I am content with that, yes.

HIS HONOUR: Well, is it proposed that the witnesses are going to come back? I mean, I would prefer if they did.

MR BORICK: I don't know. They heard that too. In the bag is another thing. As I said right at the outset, they are not people who have had anything to do with the courts at all and they just don't have any understanding of what we are talking about most of the time in terms of our procedures. I will be certainly doing my very best to get them back.

HIS HONOUR: They are not released you see. They don't really have a choice. Someone is going to have to explain that to him. They have a choice about dates.

MR BORICK: The release - if we could do it via video if we can't get them back - I mean, my client has very

limited finances. That is another thing.

HIS HONOUR: The video costs money as well.

MR BORICK: From what I can understand it would be an awfully lot cheaper than the flights. That is my worry.

HIS HONOUR: I understand.

MR BORICK: Perhaps if we get the dates and then I will work around that.

HIS HONOUR: Well, I could pencil it in to start at say 10.30 on Tuesday, 19th. I could start on Monday, 18th if you wanted me to, but I thought Tuesday, 19th and Wednesday, 20th.

MR BORICK: As good a guess as any for that week.

HIS HONOUR: Do you want me to start on the Monday?

MR BORICK: Let us take the Tuesday and Wednesday.

HIS HONOUR: Tuesday, 19th and Wednesday, 20th. Ms McDonald, shall we revisit it towards the end of November, those two particular days?

MS MCDONALD: Yes, happy with that.

MR BORICK: With liberty to call it on. I will keep in touch with my friend.

HIS HONOUR: That is all right, I don't need to bring you back. If someone can let me know though. I suppose I can always march into David J's office and ask him but perhaps if someone can let me know positively say by Tuesday, 12th if it is on or it is off.

MS MCDONALD: 12 December?

HIS HONOUR: Yes, that is a week before.

MS MCDONALD: Yes.

HIS HONOUR: All right. Can you put it in the diary.

CONTINUED

As far as setting a date -

MS MCDONALD: Is there any reason why we couldn't continue on that week, starting the prosecution witnesses? I just spoke very briefly with Professor McDonald who would be available Thursday the 21st, Friday the 22nd, if that assists in just getting through this.

HIS HONOUR: Yes.

MR BORICK: That is good.

HIS HONOUR: I'm prepared to do that. So we will set the four days aside.

MS MCDONALD: Maybe just the three.

HIS HONOUR: Tuesday, Wednesday, Thursday and, if necessary, Friday.

MS MCDONALD: Yes, to finish the particular witness. But I won't organise any new witnesses for the Friday.

HIS HONOUR: No, all right. I can give you the week commencing the 5th, but from the 6th. It's really the week commencing 5 February, or the week commencing 29 January, I think.

MS MCDONALD: If we do that week I can probably get that other trial pushed back.

HIS HONOUR: I don't think I can do it on the 29th but I think I can do it from the 30th, that's the Tuesday. What are your movements Mr Borick?

MR BORICK: That will be all right. Early February,

yes.

HIS HONOUR: Actually, 30 January.

MR BORICK: Yes.

HIS HONOUR: Yes, 30 January I can set it. So if I allow what, four days for that week?

MS MCDONALD: And perhaps the following Monday as well, maybe, for addresses. I'm really just being cautious.

HIS HONOUR: Yes, I will do that, but that might just depend on what the Chief Justice is listing, but I will tentatively pencil it in. Tuesday, 30 January for five days, up to Monday the 5th. Mr Borick?

MR BORICK: Yes. Another suggestion I could make to

your Honour is that a couple of times I've picked up on your comment that the reports from the prosecution witnesses is like ships passing in the night from the stuff that we have been presenting. I've been hoping, them being expert witnesses, if that is to be their evidence-in-chief, then accept a report like that and go straight to the cross-examination which would save Professor McDonald time and Professor French is going to be just the same possibly as the other people. So we might be able, with a bit of flexibility, that if there are to be other further reports, which are going to constitute the evidence-in-chief, we can isolate where the areas of conflict are going to be, that would be a help to all of us.

HIS HONOUR: Ms McDonald I was going to raise that with you. If, once you've considered this evidence and you want to produce any supplementary reports dealing with it, that might be helpful.

MS MCDONALD: Yes. But I can tell your Honour given what we have listened to in recent days, I will be proposing to lead these witnesses in chief, I won't be relying on their reports in evidence-in-chief. I think your Honour is going to have to make some credibility findings and in that case I would propose to lead the witnesses.

HIS HONOUR: Certainly, I can understand that, but it

still might be of assistance, even if you intend to lead them, if there are some supplementary reports dealing with the material, because if you provide reports then you can lead them in a much more shorthand way than if there are no reports at all and it also facilitates Mr Borick's ability to cross-examine.

MS MCDONALD: I appreciate that.

HIS HONOUR: So I think that if you're going to supplement their evidence if I could have some supplementary reports and if they can be provided to Mr Borick. I won't put any time limits on it, but perhaps at least a week before they're called.

MS MCDONALD: Yes.

HIS HONOUR: That will give me a chance to read the material as well, that would facilitate you leading them. If that could be done.

MS MCDONALD: Yes.

MR BORICK: With regard to the sentence option that your Honour raised, I think that really should wait unless -

HIS HONOUR: Nobody is suggesting that I should at this stage and if we can complete this by February I will leave the matter as it stands.

MR BORICK: I just think it's going to be too difficult.

HIS HONOUR: Yes, Mr Borick I'm not proposing to.

MR BORICK: Yes, thank you.

ADJOURNED 4.04 P.M. TO TUESDAY, 19 DECEMBER 2006 AT 10.30 A.M.

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