COMMISSION OF INQUIRY
INTO FORENSIC DNA TESTING IN QUEENSLAND

Brisbane Magistrates Court
Level 8/363 George Street, Brisbane

On Wednesday, 2 November 2022 at 9.30 am

Before: The Hon Walter Sofronoff KC, Commissioner

Counsel Assisting: Mr Michael Hodge KC
Ms Laura Reece
Mr Joshua Jones
Ms Susan Hedge

THE COMMISSIONER: Good morning. Ms Hedge.

MS HEDGE: Good morning, Commissioner. Before we continue with the evidence of Ms Baker and Dr Kogios could I tender some documents.

THE COMMISSIONER: Yes.

MS HEDGE: Can I hand up this bundle with. We've liaised with your clerk to put in the exhibit numbers so that they run on immediately from occurred yesterday.

THE COMMISSIONER: Yes.

MS HEDGE: And so the front list there indicates in the light blue rows a number of topics and for each topic there's a list of documents that will be an exhibit and then a bundle of document which will have a number of exhibit numbers.

THE COMMISSIONER: I understand now, yes. All right.

MS HEDGE: And we've put in those numbers. So, Commissioner, I tender all of the documents on that list and in the attached lists.

THE COMMISSIONER: All right, they'll have the numbers that you've assigned to them.

MS HEDGE: Thank you.

THE COMMISSIONER: Thank you, Ms Hedge.

MS HEDGE: Thank you. We'll turn to the witnesses now.

<REBECCA JUSTINE KOGIOS, recalled, on former oath:

<HEIDI MIRANDA RUTH BAKER, recalled, on former affirmation:

<EXAMINATION BY MS HEDGE:

MS HEDGE: Dr Kogios, can you see and hear me?

MS KOGIOS: I can.

MS HEDGE: Thank you. And Ms Baker, can you see and hear me?

MS BAKER: I can, yes (indistinct words).

MS HEDGE: All right. Ms Baker's quite quiet. Could you speak a little louder than that, Ms Baker?

MS BAKER: Yes, I'll do my best.

MS HEDGE: Thank you, that's great. Let me know if you have any difficulties hearing or seeing what's happening in the hearing room.

All right, we've moving now to some of the more specific scientific aspects that are covered in your report and the first of those I intended to ask you questions about this morning was the sampling of bones. So I might direct this - first, we might have the report on the screen, Mr Operator, EXP.0007.0001.0001, and then if we can turn to paragraph 100 which is on p45. And in part (c) of that paragraph you deal with the change in cleaning protocol on 5 July 2019?

DR KOGIOS: Yes.

MS HEDGE: Yes. And so can I direct this to Ms Baker. You say there that the change relied on project 153, although that project did not consider the application of cleaning protocol to equipment used on bones or cleaning of bone powder residue?

MS BAKER: Yes, that's correct.

MS HEDGE: All right. And in paragraph 105, which is two pages over, you say that reliance on that project was not ideal?

MS BAKER: Yes, it's not ideal. Bone sampling carries with it its own sort of unique set of equipment, most of which isn't disposal, and so it would have been ideal to really test a cleaning regime on that specific equipment just to make sure that it was working effectively and wasn't causing any detrimental impact to the equipment.

MS HEDGE: And does the cleaning of bone residue, does that also have different features than the cleaning of other biological material, for example, blood or saliva?

MS BAKER: It does, yes, just because that bone residue is in powdered form and so it's more easily dispersed.

MS HEDGE: So what should a validation of a cleaning regime for bone equipment look like? What would that have involved?

MS BAKER: I think it's really important to have the people that are sort of well versed in bone casework at the laboratory involved in any validation because they will highlight specific equipment that they use which maybe isn't disposal and perhaps has pitted surfaces. So, for example, the blocks that they use, as I understand it, in bone casework can become quite pitted and damaged during a (indistinct) and so really it's engaging with the right scientist to ensure that they have input into those validation processes to make sure that the specific methodology (indistinct) bones in this case, is considered.

MS HEDGE: And would you expect those scientists to ensure that the validation study involved the bone equipment?

MS BAKER: Ideally, yes. I think this really came to light with respect to FSS because there are concerns around obtaining mixtures of DNA from some bone samples and also sometimes struggling to detect DNA in compromised bone or teeth samples and so for those two reasons sort of this was something that was of particular interest to us to look at.

MS HEDGE: Yes, I understand. Then at the bottom of that page, p47, you have a recommendation that:

> *QHFSS should cease bone work until such time as the protocol for cleaning bone equipment is validated on the specific equipment utilised.*

MS BAKER: Yes. I think it's really important that if you have experienced, for example, those mixtures of DNA or you've struggled to obtain results from compromised bone samples, that really as a scientist you want to have confidence in the testing that you're doing and so it's worth just pausing as it stands and really being comfortable with the cleaning process that's being used and making sure that the downstream processing so, for example, the extraction method and the fact that the laboratory's now using a different quantum system and a different

electrophoresis system and making sure that the bone samples are actually optimised throughout that process.

MS HEDGE: All right. So given those things that you've mentioned, the fact that Project 153 wasn't related to bone equipment and there's been new systems put in place, is it the case that that cleaning protocol for bone equipment is currently unvalidated?

MS BAKER: I mean the cleaning protocol itself is validated but it was validated, as I understand it, on blood samples in a petri dish, which is very different to, for example, a chisel or a saw used in bone sampling. So it would be important to my mind to actually tryout those cleaning regimes on the specific bone equipment and two-fold, to make sure it is doing a really good job of cleaning, because you want to ensure that your mixtures of DNA aren't as a result of a poor cleaning regime and, secondly, to look at the long-term impact of that cleaning regime. If you're looking at metal surfaces, for example, that chisel or the drill bits, you want to ensure that you're not sort of shortening the life span of those pieces of equipment or creating rust which can sort of offer very small areas where DNA can exist.

MS HEDGE: All right. So you're saying there is a validation but it's not an ideal validation?

MS BAKER: It's a validation of the cleaning method in general, it wasn't specifically validated for bone equipment. In some circumstances that may be okay, but when you're finding examples of mixtures of DNA in your bone samples where you expect a single source of DNA, that should be a red flag just to go back and check those processes and any changes that have happened downstream of those.

MS HEDGE: All right. Now can I take you back to p40 which has the bottom of paragraph 88 on it. And at the end of paragraph 88 you say that a laboratory should, in line with ISO 17025 and good practice standards, perform an internal validation study for each method in operation. Do you see that?

MS BAKER: Yes.

MS HEDGE: Does that apply to cleaning methods or is that

only analysis methods?

MS BAKER: I mean I guess that's specifically for analysis methods. With your cleaning methods you're making sure that you're minimising contamination and that, yes, that they are fit for purpose and we appreciate that there can be issues with resourcing different chemicals that you use, and there is quite a lot of literature out there around appropriate cleaning methods for different aspects of forensic testing. Perhaps it's not possible to always test a specific cleaning method against every single piece of equipment, but I think with respect to bones, when it's quite an (indistinct) set of utensils that are used and they tend not to be disposable, it would have been preferable to specifically test the cleaning method on them.

MS HEDGE: Thank you. Now can we go back to p46 and at the top of that page is paragraph 100, sub-section (f). And this comes back to the point that you've made about the specific situation that QHFSS is in with bones, that there has been some mixtures identified?

MS BAKER: Yes, and that's quite concerning. As I've said, you would expect to obtain single source profiles from bones, I mean very rarely in the home situation you may expect mixtures but, yeah, ideally you would have single source profiles. I mean I do commend the staff at FSS because when these events have occurred they've shown great tenacity to re-sample and to try and (indistinct) single source profiles from each specific bone and they've also outsourced to other providers where they've been unable to obtain a single source DNA result.

MS HEDGE: All right. And you do state that in that paragraph, that often or sometimes, you use the word, it's sometimes possible to obtain a single source result but not always.

MS BAKER: Yes. So the process at FSS is to take multiple samples from a piece of bone and so testing them in sort of perhaps four different samples from each piece of bone at a time. And so sometimes it's possible that maybe one of those samples has the (indistinct words) profile, but not always the case and, again, for some of those compromised bone and teeth samples, the lab has struggled on occasion to obtain DNA results.

MS HEDGE: All right. From your review of the lab and from your experience, what do you think might be causing that issue of mixed profiles in bone samples?

MS BAKER: So when the new extraction process was brought in there was a sort of a bone component to it and that didn't flag any issues, so I guess at that point I would be targeting the actual cleaning regime. So it's common to clean bones before sampling them just to remove any extraneous matter that may be on the outside of them and so I would be targeting that, at least to beginning with.

I'd also want anybody who's been involved in handling those bones ideally to have provided a reference DNA sample for an elimination database just so you can make sure that the DNA results that you're obtaining are from the bone and not from unintended contamination during the handling of those samples.

MS HEDGE: You're aware that there's an OQI been raised about the mixed profiles that's currently under investigation?

MS BAKER: Yes.

MS HEDGE: In terms of good practice or best practice, how long would you expect that investigation and resolution to take, or what would you aiming for? I suppose you can't say exactly what it would take, but what would you aim for? How much urgency should this be approached with?

MS BAKER: I think it should be approached with urgency. It's hard to say because the lab were very clear that sometimes they don't have bone samples for months and months on end and other times they can be inundated in the unfortunately event of a disaster victim identification and so it really is for the lab to resolve that as soon as possible.

What I would like to see ideally is that there's some very highly skilled bone scientists at FSS and I guess ideally they would be given the time and the resource to come off casework and actually focus on that project to push it through as quickly as possible.

MS HEDGE: I understand your point that you can't say an

exact time, but are you able to say whether it's something that should be, the investigation should be able to be done in months as opposed to years if the proper resources are put into it?

MS BAKER: Absolutely. I would suggest either a period of weeks or a couple of months, but certainly no longer than that. But that's again assuming that the right people are involved and they actually have the time and the resource available to them to do that work.

MS HEDGE: I understand. I'm about to move on to a new topic Dr Kogios. Did you have anything that you wanted to add to the bone topic?

DR KOGIOS: No, thank you, Ms Hedge, I think the speaker's covered that adequately.

MS HEDGE: Thank you. Can I turn then to the topic of DNA interpretation and you deal with this topic from paragraph 122 onwards and there's a number of highly technical aspects to it and I won't ask you about all of them, but can we deal first with what you describe as the blinded model, which is indicated at paragraph 124, that emerging best practice requires the second scientist, who's reviewing a profile, to be fully blinded to the first scientist's work to manage bias.

So, Ms Baker, can I direct again to you. Could you explain the blinded model?

MS BAKER: Yes. So it would be considered best practice - I will be honest and say it's something that a lot of laboratories struggle with, so most of us use some form of electronic laboratory information management system or ELIM system and it's sometimes difficult to be fully blinded because some of the results obviously are there on a screen in front of you or they're there in a paper file in front of you. Ideally you would like to train scientists to do an interpretation of a DNA result completely independent of each other from the raw materials. That's not always possible but it's something the forensic community as a whole, and not just FSS, are grappling with.

MS HEDGE: What are the risks and benefits of that model?

MS BAKER: I think the risks are if you happen to look at

what one of your colleagues has already assessed in terms of interpretation, that can bias you in terms of your own interpretation. If they've already said, "Do you mind just reviewing this three person mixture that I've got?" You know, we're human beings, automatically in my head I'm thinking, "Oh, a three person mixture of DNA". So ideally the benefit of the blinded model is that I come at it completely fresh with no sort of preconceptions as to what type of DNA result you're going to be looking at.

MS HEDGE: All right. Could I ask you about the Standard Operating Procedure for DNA interpretation. On the next page, page 55 at paragraph 126 (a) you describe the Queensland lab's Standard Operating Procedure as highly prescriptive and reliant upon the setting of thresholds?

MS BAKER: Yes.

MS HEDGE: Yes. What's your view about that level of prescription, is it appropriate or would you prefer to see more discretion given to scientists?

MS BAKER: I think it's appropriate to have (indistinct) in place. What I will say is that they're guidelines and you really need to have that full overview of a DNA result to make decisions, and that can be particularly important when you're looking at assessing the number of contributors in a DNA result. So whilst having stutter thresholds that are based on robust validation is good, there will always be occasions where you will have what could be a stutter peak that's a little bit higher than that threshold, and it's important to (indistinct) those original validation studies and look at the outliers, because the validation study would have based the threshold on a series of information but it won't encompass all the results that were obtained. So you might be thinking is this little bit of stutter, is it showing me it's a stutter peak or is it an additional DNA contributor? The difference between those two can be highly important in particular case work scenarios.

MS HEDGE: Let's move to those thresholds. You identify some of them in that paragraph, analytical reporting, stochastic, stutter and peak height ratio thresholds. Could you give us a short description of each of those thresholds and how they're relevant to profile interpretation?

MS BAKER: I could do. So perhaps to begin with, if you have lots of DNA in your sample and you get a lovely clean single source DNA profile these issues don't really come into play. These become an issue where you have more complex DNA results, so where you have maybe mixtures of DNA from more than one person or where at least one person's contribution of DNA is at a relatively low-level compared to another person's. So we talk about an analytical threshold, so we talked about the limit of detection yesterday, so that's what that one will refer to. A reporting threshold is where the lab sets a limit where below that they don't consider that a peak has been sufficiently validated as a peak of DNA versus an artefact of the system. So you have your analytical threshold where your detection level is set and then you have a reporting threshold somewhere above that, and that is set through your validation process.

MS HEDGE: Just before you go on can I just clarify the analytical threshold is a quant value?

MS BAKER: No, your analytical threshold is height.

MS HEDGE: These are all separate to the limit of detection at the quant stage?

MS BAKER: Your analytical threshold will be your limit of detection. It will be a level where you say, "Right, this is where" - we get a lot of something called noise in a DNA profile, so right at the low-level you get a lot of noise and that's usually from the fluorescence of the laser that's used to read the DNA as it goes past, and so you would expect a degree of sort of noise or sort of scribbling at the bottom. You'll then have your limit of detection and you're saying, "Okay, well anything above this limit we think has the potential of a DNA result". But then you will put a reporting threshold on it because we know we get artefacts in the DNA process and that can just be part of the system or part of something that was present with the DNA in that sample.

MS HEDGE: Just so we all understand these are measures on an electropherogram?

MS BAKER: Yes.

MS HEDGE: All right. So effectively if you were looking

at an electropherogram these would be horizontal lines, this is what these thresholds are measured in RFU, is that right?

MS BAKER: Yes. And normally you can have a line on the threshold or you would actually in-build it into your DNA analysis software and say right, anything below, for example, a peak height of 50 we're counting that as below the reporting threshold and we're not calling it.

MS HEDGE: Okay. Can you tell us about what the stochastic threshold is?

MS BAKER: A stochastic variation is when you have very low levels of DNA in a sample. And so it may well be you draw out an amount of that DNA and run it through a system and you get a certain type of profile. You'll see a mixture where one person sits higher than the other in terms of contributing. If you went back to that sample again and drew out a second aliquot from that sample and ran it through you might get that mixture flipping. So you might get the original person that was a minor suddenly appearing as a major contributor at least at some of those areas. And so stochastic variation is I guess a scientific phenomenon that we expect when you have low-levels of DNA. It will depend on the sampling variation and your extracted DNA as to what type of result you get.

MS HEDGE: All right. So that one won't be a horizontal line on an electropherogram then?

MS BAKER: No, it will be a (indistinct) balance of peaks.

MS HEDGE: Sorry, just say that again. I think I was speaking over you. My apologies.

MS BAKER: It would be a change in the balance of peaks.

MS HEDGE: Yes.

MS BAKER: If you had a sample twice you would notice that sometimes what may appear to be a major contributor in one sample may flip to be a minor in the second run.

MS HEDGE: You've explained the stutter one in your earlier answer. What about the peak height ratio threshold?

MS BAKER: So for most of the areas of DNA we look at there are two bits of information available, one from your mum and one from your dad. We would expect in a relatively balanced DNA profile that if you got a different bit of information from your mum and dad that those two peaks would be roughly similar in height. If there was a situation where one peak was substantially higher than the other that may give you an indication that you could actually have additional contributions of DNA in that sample. That's something that the peak height ratio can help assess.

MS HEDGE: This number of thresholds in the Standard Operating Procedure, is that consistent with your experience in other laboratories?

MS BAKER: Yes.

MS HEDGE: All right. And where they're set by the Queensland lab, is that consistent with what you've experienced in your career?

MS BAKER: Yes, there was a question around reporting results below the reporting threshold which I saw in some of the statements which was interesting.

MS HEDGE: What's your view about that?

MS BAKER: I guess as an end user I would be a bit confused to say that you have a reporting threshold that then you are reporting results below that threshold in a statement and referring to them. Sometimes --

MS HEDGE: I'm sorry, are you talking about statement of witnesses that go to court?

MS BAKER: Yes.

MS HEDGE: Okay. Could we just leave that for a moment and come back to it. Sorry, I thought you meant statements to the Commission from scientists?

MS BAKER: No.

MS HEDGE: Because some scientists have raised a concern about whether those thresholds should be hard thresholds or whether there should discretion to look under them. Can I

ask your opinion on that matter, about whether those thresholds should be hard thresholds?

MS BAKER: It's probably good practice for them to be soft thresholds I guess or guidelines. So you would expect that in a sort of a sample of a reasonable amount of DNA that your profile would fit within those parameters. When you start looking at very low-levels of DNA or complex mixtures of DNA, or for example if a sample has been quite degraded, then you might start seeing variation from your guidelines. It's important to look at that DNA result holistically and think about what type of sample it was, what was the degradation index that you measured at the beginning, how much DNA did you detect when you were measuring it?

MS HEDGE: All right. That discretion would be exercised by a reporting scientist?

MS BAKER: Yes, so I would expect that to be part of a reporting scientist's training and expertise and you grow and develop as your experience grows.

MS HEDGE: And that would apply to all of the thresholds that you have in that paragraph, is that right?

MS BAKER: Yes.

MS HEDGE: All right. Can we move then - I should ask, Dr Kogios, did you have anything to add to that topic?

DR KOGIOS: The only addition I would make is that, you know, it's important that the rationale behind a decision is recorded in a case file. So if a scientist is going to be exercising discretion in particular around stepping outside of validated thresholds, we would really expect that to be recorded in the case file for prosperity so that somebody can come back at a later time and, you know, have a full visibility as to the basis upon which a decision was made.

MS HEDGE: I understand, thank you. Could I turn then to page 59 and paragraph 131. You identify an opinion that QHFSS should review and update the DNA interpretation Standard Operating Procedure?

MS BAKER: Yes.

MS HEDGE: In 126 paragraph (h) you deal with a particular issue about stutter interpretation which I wasn't going to ask you to deal with in detail, it's set out there. But is that the only thing that led to paragraph 131 or are you recommending a more holistic overall review and update of that Standard Operating Procedure?

MS BAKER: No, because those Standard Operating Procedures should be reviewed on a yearly basis anyway. But I would just draw attention to I think it's an appendix at the back of that SOP that just seemed to be a wee bit outdated in terms of what the laboratory was actually doing. It may well be that it was missed when the SOP itself was reviewed yearly.

MS HEDGE: All right. What we've just talked about, about the hardness or softness of those thresholds, if they are hard thresholds in the SOP then would you expect that - are you recommending that be reviewed and reconsidered in line with the evidence you've just given?

MS BAKER: I would say that it's how they're used and if your DNA result is flagging some of those thresholds and not sort of falling within the guidelines that you've got in your interpretation manual, that's telling you something about your DNA results. It might be telling you that you need to try to resolve it biologically, so for example reprocess that sample, re-amplify it, clean it up, concentrate it. So in my mind even if it's a hard threshold, if it sort of isn't meeting that threshold your DNA result is telling you something. It's telling you something about the health of that sample and that you need to do some more thinking around that. Either look at a different sample if there's another one available or go back and try and resolve that biologically, do some more testing.

THE COMMISSIONER: Ms Baker, tell me if I'm understanding this correctly. Matters of the kind that we're discussing at the moment don't constitute criticisms of the lab and how it's operating, rather you went into the lab to have a look and you found some aspects that you've raised in your report, but a matter of this kind is the sort of thing that will arise from time to time and what the lab needs in place is a mechanism so that they are in a constant state of review to pick up these sorts of dilemmas and resolve them. So I understand you not to be saying this is below

best practice or anything of that kind, rather this is something that you happened to pick up and the lab ought to be habitually looking at these things and resolving them, is that the right way to understand it?

MS BAKER: I think it is, Commissioner. I probably would answer that - certainly at least whoever the scientist raised concerns that there are some discrepancy across the scientists with a couple of very specific interpretation issues, and I've raised those in the report and hopefully sort of given a bit of a blueprint as to how the lab might want to just go about raising those with the scientists and coming to a solution rather than sort of divergent practice emerging within (indistinct).

THE COMMISSIONER: Yes, I understand. Because I've also understood that there was a disagreement about the significance of particular peaks and whether they ought to be regarded this way or that way and double stutter and that sort of highly technical issues relating to interpretation of electropherograms and one can't allow that kind of difference of opinion to persist, so what we need is a means by which those sorts of differences can be discussed and a consensus reached. So the issue is not the disagreement, the issue is a lack of mechanism to resolve differences?

MS BAKER: Yes, Commissioner, I will agree with that. What I will say in favour of the FSS is that they already have the probabilistic genotype software in place that can actually accommodate that double back stutter.

THE COMMISSIONER: Yes.

MS BAKER: So the solution is already there, I think it just needs to gain the scientists' confidence and consensus to use it as such.

THE COMMISSIONER: I think we're all aware that in hospitals medical doctors confer periodically to discuss cases which have had bad outcomes and to try to work out what's happened and so on. Does this lab have anything - I know they have management team meetings and other sorts of meetings. Are you aware whether the lab has the kind of meetings at which these sorts of things are raised with the aim of either resolving them or planning out a path forward towards resolving them? And if not do you think, are you

aware of any other labs where that's done in a formal or informal way so these sorts of things don't end up becoming deep dividing issues, as it seems that this might have had?

MS BAKER: Well certainly from some of the material I saw historically there used to be those discussions and whether they were within a reporting team or across those reporting teams. So that did used to happen. I haven't seen much evidence of that happening recently and I would suggest that is probably down to some of those cultural concerns that have been raised as part of the Commission. I know that from speaking to individual scientists they would raise with their colleagues if they had something that was particularly tricky and that's what I would expect to be best practice across any forensic service provider, whether it's formal or informal, that if you have a really tricky sample that you struggled to get a result from, or you had a really complex sample or a complex result or, you know, from my own experience if I've been to court and I found a particular line of questioning particularly challenging I would feed that back to my team so that we can all use that as a learning point (indistinct words) culture.

THE COMMISSIONER: Yes, thank you. Ms Hedge.

MS HEDGE: Thank you. In terms of best practice in this area of your report, can I just turn to page 58 and at paragraph 129 you say that broadly the practice of DNA interpretation for the Queensland laboratory falls within the range of best practice however it's not the case for some specific aspects that you've set out there?

MS BAKER: Yes, so for analysis ideally the analysis is completed between two authorised scientists blind to each other, or that you have an expert system and an authorised scientist doing the analysis. The lab is using expert systems but they're classed as expert systems for single source samples and that tends to be reference DNA samples. When you're looking at forensic case work the expectation would be that two individual trained scientists would be looking at that, analysing that DNA blinded to each other. In some cases that was happening and in other cases the reporting scientist that was doing the second analysis actually doesn't have the sign off for that particular type of training. So it's not huge, it's just making sure that if --

MS HEDGE: I understand, it's not one of those. That's all I was - I'm sorry, something's happened with the sound there. Can you still hear and see me all right?

MS BAKER: Yes. Yes, I can hear you.

MS HEDGE: There's a slight delay I think.

MS BAKER: We're over the Tasman, sorry.

MS HEDGE: There's just a delay. I can see her mouth moving and then the sound comes through a few seconds later.

THE COMMISSIONER: Yes.

MS HEDGE: Mr Operator, should we just continue or is it better to cut the link and try again?

OPERATOR: (Indistinct).

MS HEDGE: The issue of the thresholds though is not one of the ones that you identified as falling below best practice, that's all I was trying to identify there?

MS BAKER: Oh, no, correct.

MS HEDGE: All right. In paragraph 130 you set out particular opportunities to align with emergent best practice, is that right?

MS BAKER: Yes.

MS HEDGE: Can we go back to the topic that you raised a little while ago, which was about the reporting in statement of witnesses that are used in actual criminal cases where there's a statement or a result is referred to as below the reporting threshold. That appears on page 56 at sub-paragraph (g) at the bottom of the page. Can you tell us what you see as the concern about that?

MS BAKER: I think it could be confusing to the end user when you're talking about a reporting threshold in a statement but then you're also giving information about DNA results below that threshold. It's not necessarily wrong but I think it needs to be in context and have the right caveats around it so that the end user can understand why

the scientist believes it's important to discuss those results.

MS HEDGE: Okay, and what caveats are those?

MS BAKER: I would think for the examples I saw you would want to say that you've considered results that fell below the reporting threshold because they indicate additional contributions of DNA, and that has probably led on to impacting the number of contributors of DNA you've assumed when you've done your statistical assessment of that DNA result.

MS HEDGE: All right. In the statements of witness I should say that you reviewed did it explain what the reporting threshold was?

MS BAKER: No, not from memory it didn't.

MS HEDGE: Is that also something that you'd expect to see in a statement to go to a court, what these terms mean?

MS BAKER: I would. On the rare occasion where a scientist considered it important to use results that were below their reporting threshold, I would expect that to be detailed in the statement to explain the reasons why they've chosen to do that and an explanation to the end user as to how to take that result or how to use that information.

MS HEDGE: All right. Would you recommend that the lab review that part at least of the reporting of results Standard Operating Procedure?

MS BAKER: Yes, I would, yes.

MS HEDGE: All right. Do you have anything to add to that, Dr Kogios?

DR KOGIOS: Well no, other than that we do deal specifically with the issue of reporting in that other section of our statement and we make some comments there around a broader use of caveats, if you like, for transparent reporting and a suggestion that the lab can work with their stakeholders to develop those reporting lines. We certainly did see evidence of FSS working with QPS around lines that could be, you know, understandable.

We believe that that work is ongoing and it's to the benefit to expand some of that work practice to other areas of the criminal justice sector so that there is that broad understanding of what the results mean.

MS HEDGE: Yes. Can I put that up on the screen just to tie that in. Page 35 please, Mr Operator. The two recommendations, 11 and 12 that relate to the reporting section of your report. Would that specific question that we dealt with then about looking at results below the reporting threshold, that would be tied in, in your view, in recommendation 11 in terms of strengthening the reporting practices to ensure they're readily understood, is that right?

DR KOGIOS: Yes, so we've gone quite broad in recommendation 11, we haven't specified, you know, particular scenarios that would need to be covered. But, you know, recommendation 11 speaks to that general principle of transparent reporting and working with the end users of your products, your statements in this case, to make sure there is that level of understanding.

MS HEDGE: So is your view, looking at recommendation 11, that there should be a review of all the types of results that are reported or are there other specific ones that you think needed attention?

DR KOGIOS: No, recommendation 11 is broad. So it's around working with the users of the statement across the different types of results that are reported in statements to ensure that there is that level of comfort with those who are using the statement, whether that be police or courts, to make sure that the information is conveyed in the right way. This is a very difficult area I think, you know, we scientists have a certain language and we know what it means. Conveying that to nonscientific audiences is really difficult. So this is a way to work with the sector to in as far as possible bridge that gap.

MS HEDGE: Are you aware or have you been involved in that sort of collaboration at any point in your careers, collaboration with the criminal justice stakeholders about reporting of results?

DR KOGIOS: I can't speak to the specifics of how we operate here in Victoria because I don't have the authority

to do that but I can just say that I think that that would be particularly important for this laboratory given the circumstances that they've been in and as part of their transition beyond the stage of the Commission, I think it would be really helpful for them to do this and I am aware that it does happen in other areas.

MS HEDGE: Yes, thank you Ms Baker.

MS BAKER: So I would say that happens on a range of levels. So informally if somebody from the police or from the Crown prosecution calls me and asks me to explain something I've written in my statement, then clearly I've failed in my duty to make it comprehensible, and so we feed that back to the wider group as well. We usually request feedback after we've given evidence at court and sometimes that's really helpful for people to say, "You talked about X and I have no idea what you were talking about" and we take that on the chin and realise that we need to do better because it's our job to explain the science in a way that's understandable to our end user. And as well in training, if we do training for the police or training for the judiciary, those are really good opportunities to have that feedback mechanism of, you know, what are we doing well, where can we improve? And that's ongoing.

DR KOGIOS: And I think I would just like to add here that FSS are actively working in this space. They have a nice appendix that they attach to the end of their statements and that appendix does set out a lot of this type of material that we're talking about here. So we're certainly not meaning to imply that FSS is not doing this work already. We're just suggesting that they could strengthen their practices and perhaps socialise some of that developing language with their end users.

MS HEDGE: Yes. Could I ask you, Dr Kogios, in a forward looking way rather than in a backward looking way, what would you envisage that collaboration looks like with the stakeholders?

DR KOGIOS: Well I mean there is the practitioner to practitioner level of engagement that Ms Baker has described, but then also I think more at the sort of strategic level or executive level to have that engagement. I think there's a real benefit that arises through strengthening your engagement at both practitioner and at

sort of managerial level with the other stakeholders in the criminal justice sector for all people who are in the business of forensic science provision. You know, there's an opportunity there to develop that sort of shared understanding, but also many other opportunities that would relate to things like training new practitioners, getting involved in say moot courts. So having forensic scientists, junior forensic scientists being cross-examined by junior trainee barristers, for example. There's plenty of benefits that flow from strengthening those engagements across the sector. And then once you've got those relationships it's easier to do this type of work that we're recommending in recommendation 11.

MS HEDGE: Thank you. Can I turn to a new topic then. Sorry, Ms Baker, I should check that you don't have anything to add?

MS BAKER: No, thank you.

MS HEDGE: Can I turn then to sexual assault case work, which is often described as a SAIK, sexual assault investigation kit, and can I direct this question to you, Dr Kogios. Could we turn to your recommendations on this topic which start at page 72. At the bottom of the page there we have recommendation 32, that QHFSS ensure provision of feedback to health practitioners involved in the collection of SAIKs to drive best practice in DNA collection. Could you explain to us, Dr Kogios, what sort of feedback you might expect to be passed back and how that would strengthen the system?

DR KOGIOS: Sure. So the type of feedback we've got in mind here, really it's not so much about the individual case and it's certainly not about what the results were in an individual case. It's more about, you know, issues that might arise at the systemic level or perhaps issues around a particular area. So if there might be any problems with compromised samples, packaging not sufficient, not appropriate or labelling that was, you know, sub-optimal or any other issue that is apparent in the SAIK. Again, in an ideal world you would have the DNA profile of all of those people who were involved in collecting SAIKs on your elimination database so that you'd be able to detect a contamination event if there had been one. That's certainly not the case. It's not standard that that is the case across Australasia. I don't know to what extent

collectors, health practitioners who are involved in collecting SAIKs in Queensland are or are not contained on a staff elimination database. But if there were staff on that database and scientific contamination, that would be also the type of thing that you would report back. Look, I think it's fair to say we didn't see evidence of this in place in Queensland. That's not to say that it isn't in place. We weren't sure. We wouldn't see anything in the SOPs and nothing that came out through our consults with staff indicated to us that there was a process in place for provision of feedback. So we've used the language here to ensure that provision of feedback because we think that it is beneficial.

MS HEDGE: Would you expect that to be a formal or an informal provision of feedback?

DR KOGIOS: I think, you know, practice would probably vary. Ideally you would have some degree of formal feedback and it might be a quarterly or a six monthly feedback process. Of course if you did have an issue in a particular case then you would expect there to be some sort of feedback loop in relation to that case, so you wouldn't wait necessarily, but as a general rule in terms of provision of general feedback in terms of how the system is working, that's probably something you would periodically and ideally it would be formalised. Again, it's another opportunity - having that formal mechanism it's another opportunity to collect, sorry, to connect the people who are involved in an end-to-end process together and always that leads to some sort of benefit, if it's only, you know, shared understanding of each other's role in a process, but ideally process improvements, all sorts of things that can flow from that level of connection.

MS HEDGE: Consistently with what you said earlier about the reporting, would you expect that feedback to be at both a practitioner level and at a management level?

DR KOGIOS: Yes, I think so. You know, the need for management interaction probably would depend on what was coming out through the feedback. If the system was working really well for everybody, if the results are as expected then, you know, there perhaps isn't that need. But if there are opportunities evident then managerial engagement is always helpful.

MS HEDGE: Thank you. Recommendation 33 is that if it is the lab who continues to provide SAIKs, that they should consider attaining accreditation to the relevant standard. You deal with this at paragraph 162, if we can go back to page 69 please. You identify there that Anna Davey, another expert engaged by the Commission, found that the assembly of the SAIK was not compliant with a particular ISO standard. What do you see as the benefits of being accredited for the production of the SAIKs?

DR KOGIOS: Well I mean being accredited it always gives you that extra level of assurance. It's a check and balance I suppose that you are, you know, performing whatever the work is to a certain standard and that there's been some level of external check that's been conducted so it's not just, you know, the laboratory's own word that they're performing work to a certain standard, there'd been that external scrutiny.

MS HEDGE: All right. Does it also assist in keeping abreast of emerging best practice or changing standards, does the International Standards Organisation assist with providing information to laboratories or does it not do that?

DR KOGIOS: I'm not sure that I'm following your question, but certainly if there is a standard that relates to your area of practice, then compliance with that standard would be beneficial in terms of showing and maintaining I suppose a contemporaneous approach.

MS HEDGE: Yes. Probably my question wasn't that clear. I suppose I see that potentially there's two things. One is that the standard itself could change when best practice changes so then you would be told about that by an accreditation body like NATA, is that right, you'd be told that the standard had changed?

DR KOGIOS: Yes, certainly a forensic science provider who maintains accreditation would need to keep abreast of that information and would find out that information to enable them to then shift their practice in order to maintain that accreditation.

MS HEDGE: All right. Is it the case that while accreditation as you describe it is a helpful check and balance, it shouldn't be the only check and balance on

maintaining best practice?

DR KOGIOS: Yes.

MS HEDGE: All right. Can we turn then to the next recommendation, back to page 73 now. You recommend there that QHFSS research optimal kit composition and identify particular things that they should look at. Can I ask about that while - can we go back to page 68 and you make a number of observations there. For example in 160, paragraph (a), this is information that was given to you by the Commission in particular through the statements of Dr Adam Griffen and Dr Cathie Lincoln, is that right?

DR KOGIOS: Yes, and also our own observations. So whilst we were on site at FSS we were given a SAIK, an unused, but we sort of pulled one off the production line, if you like, and had a look at the SAIK contents.

MS HEDGE: All right. In your experience and expertise you're aware of what should be in a SAIK and you have a view about that, is that right?

DR KOGIOS: Well look, it's fair to say that this is an instance where the work that we've done here for this Commission we were not given any information about SAIK composition in other Australasian jurisdictions. So we've got a limited pool of information upon which to draw. We certainly do know that variation exists. I mean even in the name itself it's not called a SAIK in all jurisdictions. So from our experience we would expect there to be a degree of variation in composition of whatever kit you're using for these (indistinct).

MS HEDGE: I understand. What I'm going to do is ask you whether you think that these things, that there should be the things in here that you identify are not. In 160 (a) you say there's no equipment for collecting fingernail scrapings or clippings. Is it your view that there should be that equipment in the SAIK?

DR KOGIOS: Yes, because there are scenarios where one might be able - you know, one would expect want to be sample underneath the fingernails and we know that under the fingernail is a place where biological material of interest can often be deposited. Now I think it's fair to say here that what we observed was that there was no

apparent dedicated fingernail collection device. That's not to say that health practitioners in Queensland, perhaps they're using the swab stick, they're snapping the swab stick and using the wooden part of the swab stick to sample fingernail scrapings, that might be occurring. Or alternatively they could be using one of the swabs themselves to do fingernail scraping, which as I understand it is within the realms of accepted practice. And I think it's fair to say that when we did look at the case work, the sexual assault case work, we certainly did see some cases where there was evidence of fingernail scrapings. So the fact that the SAIK that we looked at didn't have any, you know, obviously specific dedicated equipment for fingernail scrapings doesn't necessarily mean that fingernail scrapings are not being collected in the State of Queensland.

MS HEDGE: All right. And what would be the specific sort of equipment you might expect for fingernail scrapings that's different to a swab?

DR KOGIOS: So you can get specifically designed fingernail swabs that have been treated with ethylene oxide which is really a way of removing DNA so ensuring that the swab, that the thing that you're using is free from DNA, and that would be ideal, of course, because you don't want to necessarily introduce anything, foreign DNA into your sample.

Other things that you could use would be perhaps a plastic implement that, you know, enables you to get under that nail. As I said before, in some instances people might potential be using a wooden stick and tapping that stick and using the end of that stick. It's really anything that's long, thin, pointy and enables you to really get underneath that fingernail to pick up, you know, what might be present under the nail.

MS HEDGE: So for that purpose, and tell me if I'm asking something outside your expertise, bur for that purpose you would want something, as you say, pointy, so a swab would be less than ideal, because a swab's not pointy?

DR KOGIOS: Yes. I mean, look, the specifically designed swabs do have a different head shape to them so that they are, you know, more able to readily get underneath the nail. Your standard swab, yes, it might be difficult to

really get underneath though. You probably would be better off with something longer and thinner and pointier.

MS HEDGE: Now I should show you paragraph 172 in conjunction with what we're talking about, and that is in the middle of that paragraph on p72. In the middle of that paragraph do you say this should include, and there's a list of things that you say should be included. So we've dealt with fingernail scraping. Can we deal with the consumables to enable the collection of a reference sample.

You identify at paragraph 166 on p70 that in some instances it may not be appropriate to collect a DNA reference sample from a complainant, for example, in a scenario involving potential oral sexual assault. Can we start there and could you explain why that would not be appropriate in that situation, if there was an allegation of potential oral sexual assault?
A. Sure. Because the sample that would be taken from the mouth area then would actually be a casework sample, as opposed to a reference sample. So what we're talking about here is the ability to take a reference DNA sample from the complainant, from the person who's undergoing the SAIK procedure, taking a sample from them that enables the scientist or the lab to generate a DNA profile which is the profile of that particular person. It's what we call a reference DNA profile. That reference DNA profile is really important because it gives you the ability to then compare the profile of the person to the profiles that are being recovered from the casework samples.

If you have an allegation of sexual assault involving an oral sexual assault, then the chances are that you might be recovering DNA from the other individual, rather than the DNA from the donor of the sample themselves, or at least a mixture. So it's not going to be - (a) it's a casework sample, and you need to treat it as a casework sample because there may be valuable evidence, probative evidence, that can be gleaned from that sample; (b) it's not going to necessarily give you an ideal reference sample because it's likely to come back or possibly come back as a mixture.

MS HEDGE: All right. And so in that situation where there is an allegation of oral sexual assault, you would recommend taking a crime scene sample effectively, not a reference sample?

DR KOGIOS: Yes. I mean that would be at the discretion of the trained person who was taking the sample and it would all come down to sort of time frames, how much time had passed between the incident and the time of collection and what activities had taken place across that intervening time period. Appropriately trained medical practitioners, they have the skills to know when to take a sample from - an oral sample if there is an allegation of oral assault.

MS HEDGE: All right. And the swab used for a crime scene sample or - I'm sorry, I think you used a different term than that. Casework sample, is that the term you used? A. Yes, or a crime sample, or whatever you want to call it. It's an evidentiary sample, perhaps we'll use that word, an evidentiary sample as opposed to a reference sample.

MS HEDGE: Yes, thank you. And the swab for taking the evidentiary sample is a different sort of swab than the one that you used to take a reference sample, is that right?

DR KOGIOS: So the reference involves what we call an FDA card, so the SAIK kit would need to contain slightly different consumables to enable the taking of the reference sample.

MS HEDGE: Yes, I understand. All right. Can we go back to 172 then. The next one on your list is consumables to enable creation of a microscope slide at the point of collection. Could you explain to the Commissioner why that would be beneficial?

DR KOGIOS: Yes. So here again we were drawing on the findings of Commission expert Clint Cochrane who had made a report to the Commission and found that the, that the ability to collect a microscopic slide at point of collection of the SAIK would be considered best practice and we certainly agreed with that. So what it does is it gives you that ability to, I suppose, get more information from as close a point in time to the actual incident in question as possible. So rather than relying on the swabs as they're submitted to the laboratory to make up your slide, to be able to go back in time, if you like, to that point of collection of the SAIK and have a look at what was present on your microscope slide that was created at that time of collection, that's just going to give you much more

information that could be very valuable in the case.

MS HEDGE: And is the purpose of creating a slide to then examine it for the presence of spermatozoa?

DR KOGIOS: Yes, that's right. So ideally the slide would be collected at the same time as the swabs, packaged up, sent into the laboratory and then the laboratory would be examining that slide for the presence of spermatozoa and that slide would be, you know, a really good source of information because it's a slide that's been taken so close to the event.

MS HEDGE: And in terms of practicalities, is the creation of a slide as simple as taking the swab and then smearing the swab on to the slide or is it something more complex than that?

DR KOGIOS: Look, I'm not trained to do that work. Never have - you know, a non-medical practitioner, haven't done that kind of work. I would imagine it would be as simple as that, but that probably would be a question that would be best put to a person who's engaged in doing that work.

MS HEDGE: Perhaps I can ask at least this: would you imagine that if that was to be part of the process, that there would need to be some training of medical practitioners or nurse practitioners or whoever is administering the SAIK so that they could do the slide preparation?

DR KOGIOS: Yes, absolutely. You'd need to make sure that the consumables required were there, you'd need to provide instructions on how to do that work and the documentation that went with the SAIK would, you know, need to set out how to do that work and, I suppose, provide a bit of a prompt and an aide-memoire to the person who's taking the SAIK that this was something that was encouraged. Where the case scenario presents, you know, the need or the benefit in taking such a sample but, yes, training would be required.

MS HEDGE: Thank you. Now can I turn back to p68 and to paragraph 160(g). And this is where you deal with an observation that there's not currently the consumables necessary for preparing slides.

Now you identify that the slides can be used for assessment of the presence of semen, which we've just discussed, but also for DNA testing using laser micro dissection. Do you see that there?

DR KOGIOS: Yes.

MS HEDGE: So the Queensland lab doesn't have that yet. Is that something - perhaps you should tell us what laser micro dissection is and whether you'd recommend the Queensland lab look into whether it should have it.

DR KOGIOS: So laser micro dissection is really just a way of sampling from the actual slide itself, so being able to sort of with laser like pinpoint precision select sperm cells perhaps off, from the background of female biological material and select those particular cells for subsequent DNA profiling.

We don't have information on the current state of uptake of laser micro dissection right across Australasia so it's very difficult for us to say whether this would be considered best practice or not. Ms Baker may have more thoughts on that particular question, but from our perspective on what was presented in the materials we just don't have that level of detail.

MS HEDGE: Ms Baker, do you want to come in here?

MS BAKER: Yes. I would say that laser micro dissection is a really helpful technique, particularly in cold cases. So sometimes we find that if other forensic evidence has already been destroyed or has degraded over time sometimes if, for example, those sperm heads that are on that particular slide can be very well preserved and so for cold cases having the ability to actually specifically effectively draw around those sperm cells on a slide when you see it on a screen, and then the laser goes and cuts round where you've drawn and pops all those sperm into a tube for processing, it can be incredibly helpful technique to have.

DR KOGIOS: And I guess it might be the type of thing that you could consider outsourcing on a particular case. If you didn't have that technology in-house, it might be the type of thing that you could then outsource to another

forensic science provider that does have that technology. It all comes back, though, of court, to having that (indistinct), you know, having that slide at point of collection enables you to consider this type of work if, you know, as a last resort perhaps if you haven't been able to successfully recover DNA profile through your conventional testing.

MS HEDGE: Thank you. And just to clarify, even with the equipment and the methodologies used by the Queensland lab, preparing that slide at the point of collection would improve their chances of identifying sperm and therefore testing samples appropriately, is that right?

DR KOGIOS: Yes. I mean it certainly wouldn't be the case that every sexual assault case would require this. I mean for some you wouldn't necessarily need this, but we would consider this to be best practice, to have the ability to create a slide at point of collection. You know, the consumables that you would need within the SAIK to enable you to do that we think would be best practice.

MS HEDGE: What I'm trying to just confirm is that it would benefit the Queensland lab even with their current methodologies, they don't have to have LMD for this to be a benefit?

DR KOGIOS: Yes, absolutely.

MS HEDGE: Can we look at 160(h) then. Could you describe - that was on the same page we were, 160(h), my apologies. Back to p68. Thank you. Could you describe for us, Dr Kogios, what that first part of that sentence means, swab casings are intact? Can you explain that to us?

DR KOGIOS: So the swab casing is the plastic tube that the swab is put into after sampling and it's a way of protecting the swab head for subsequent transport, so it's packaging essentially. In some forensic science providers or some collectors what they would do is aerate in some way that swab casing or create a hole or a snip in the swab casing tube. It's all about enabling the swab to, a moist swab head to dry because essentially if you don't enable that to happen then the sample might become compromised. I think we can all picture what that might look like. If you take a wet piece of clothing and you put it into a plastic bag and you seal that plastic bag, then you're not going to

allow that, the contents of that bag to dry out properly.

So really what we're talking about here in (h) is whether conditions are created that would enable dry sample degradation. We certainly here looked to the report of Anna Davey, the Commission expert, and her conclusions were that the transport and the sampling techniques that were being used were appropriate, so it may well be that the use of fridge or freezer to store samples is an appropriate way to safeguard against sample degradation. So it was an observation that we made that the swab casings were intact, they hadn't been snipped or breached in some way to enable that swab to dry, but it wasn't necessarily a concern if there were other mechanisms that were being used to guard against sample degradation.

MS HEDGE: You say there in the second sentence that there's a potential to create conditions for sample degradation. You've identified one of those conditions as moisture effectively and air tight. Are there other conditions that you were referring to there?

DR KOGIOS: No, we're really just talking here about not allowing that sample to dry. If the sample is allowed to dry then it's not likely to be degraded by the time it gets to the laboratory.

MS HEDGE: And can we turn then to p71 and paragraph 167 which I think links together on this topic. You say in the middle sentence of that paragraph that the cutting of swabs heads post collection enables the moist swab heads to dry. This is the same point, is it?

DR KOGIOS: Yes, that's right.

MS HEDGE: Could you just tell us what that means. What do you mean by cutting of swab heads post collection, and would they be in the tube or - just describe to us what you're suggesting there?

DR KOGIOS: We didn't say heads did we? Did we say - the cutting of swab casings I think is what we meant to say.

MS HEDGE: I see. Might that be a typographical error? It say "heads" there.

THE COMMISSIONER: What paragraph are you looking at?

MS HEDGE: 167, the second sentence:

The cutting of enables swab heads post collection enables moist swab heads to dry.

DR KOGIOS: Yes, okay. So we mean - what we were intending there was the actual cutting of the swab casing, which it's really just a way of creating conditions for that swab to breathe and to dry. But there are - so that's one way of potentially treating the swab casing.

There are also new types of self dying or self vented swabs on the market so, you know, whether you purchase a swab that's housed in sort of a casing that has a self drying capability built into it or whether you take the swab casing and yourself create a hole in it, these are the types of mechanisms that we're talking about but, again, I think it's important to say, you know, if you're storing your samples in a freezer before you're transporting them to the laboratory, this may be a moot point. You may be, you know, through the use of freezer conditions safeguarding against sample degradation anyway, and we didn't see any evidence of sample degradation, or it wasn't raised up to us as being a particular concern, so it was more just an observation that we had made.

MS HEDGE: All right, thank you. Can I turn to p73 and to your final recommendation in relation to SAIKs which is the establishment of an interagency group focused on best practice in relation to sexual assaults, and I note that Dr Cathie Kramer also recommended some sort of interagency group. So could you tell us from your perspective what would this group do and who would be on it?

DR KOGIOS: So ideally this would be bringing together the people that were involved in the work flow, so the people who were creating the kits, the people who are using the kits and then the people who are testing those kits. So by bringing those groups together, you know, it's an opportunity to share perspectives, to understand, you know, from a user's perspective what's helpful in terms of kit composition, what's not so helpful. The scientists, of course, can then provide information around what the literature says in terms of the best type of swab to use. You know, it's just an opportunity for joined up, connected engagement from all people involved in the work flow.

MS HEDGE: All right. And so that would be Queensland Health or doctors or nurses?

DR KOGIOS: Yes.

MS HEDGE: Queensland Police, the laboratory, but would you also expect it to be wider than that in the sense of the criminal justice agencies, the DPP, Legal Aid, defence lawyers, the courts?

DR KOGIOS: Look, I think it depends. I mean if you're just talking about kit composition, you know really what you're trying to do is make sure that you, you know, you build a kit that enables you to sample optimally the different types of evidence that are going to be present in most of your cases. So, you know, when you're looking at it through that lens really what we're talking about here is practitioners, you know, people who are actually involved in that work flow. So that would be the Queensland Health who are creating the kit, it would be the practitioners across the State of Queensland or representatives of the different areas who are collecting those kits, and then it would be the Queensland Health scientists, but that's a very sort of practitioner focused group that I think would be the most appropriate to look specifically at the question of kit composition, SAIK composition.

MS HEDGE: All right. And what about the Queensland Police, given their investigating these crimes, would they be part of that?

DR KOGIOS: Yes.

MS HEDGE: In terms of saying what they would want from a investigative perspective?

DR KOGIOS: I mean I don't see any reason not to include Queensland Police. I mean I think that given the practitioners themselves, the ones who are collecting the samples themselves have probably got the - you know, they're probably the best informed to know how many different samples to take to cover, you know, the range of different, with the scenario in the given case but, yes, I mean I think that's right, anybody who has a stakeholder or an interest in that particular, you know that particular

work flow, bringing those groups together is beneficial.

MS HEDGE: And what about victim survivor groups or victim support groups or do you see this as more science focused as opposed to the trauma focused approach that Associate Professor Kramer spoke of?

DR KOGIOS: I think it's always beneficial to broaden our engagement to consider all voices and I think that the group that you've mentioned there --

MS HEDGE: I'm sorry, we've just lost the sound there. So just hold one moment if you can still hear me. Do you want to try now? You've come back on, so you might need to start that answer again. Do you want me to repeat the question?

DR KOGIOS: No, I think I had the question. I mean I think that there's benefit in bringing together different groups to deal with different issues. In terms of creating a kit and answering questions like which type of swab should we use in a kit, I mean, you know, your scientists are going to be best placed to be able to provide that information.

I do think, though, that the group that you mentioned are absolutely a vital voice and a vital, absolutely should be part of the conversation and the consideration about what does best practice look like. So you might look for opportunities to engage with groups more broadly across the sector to answer different questions and to do an overarching check on the model and the process, but in terms of bringing everybody together to answer every single question, that might not necessarily be the right way forward.

MS HEDGE: All right, thank you. Would you expect this interagency group to be like a standing group or is it to stand up, deal with the issues that exist right now and then stand down, or is it to persist and maintain a sort of watching brief over this area?

DR KOGIOS: I think there's benefit in both. I think the idea of having a standing group is really important because again it creates that environment, it creates that connectivity, it gives the opportunity for all voices to be heard and considered, and that is of vital importance, and

I think perhaps there might be scenarios where you might stand up a separate group or smaller group to do a particular piece of work and I think this particular question about, you know, a SAIK composition, you know that might be the first, the first port of call or the first piece of business for a dedicated group to look at and then from there, there might be consideration to establish a sort of a standing interagency group to consider all sorts of issues more broadly than just SAIK composition.

MS HEDGE: Thank you. All right, Ms Baker, did you have anything to add to the interagency group recommendation?

MS BAKER: No, I don't, thank you.

MS HEDGE: Can I just return briefly to recommendation 34 before we leave this topic. In paragraph 172 that we've been to you identify a number of things that should be included in the kit, but then recommendation 34 recommends that QHFSS undertake some research. So I wanted to ask whether you considered this should be done in a two stage way, that is stage one, put into the kit the things you've recommended in paragraph 172, that could be done as soon as the consumables and other items are sourced, and then stage two, undertake the research. Do you see it occurring in that way?

DR KOGIOS: I think there is some - look, I think that there is some work that could be done relatively quickly to engage with the practitioners and make sure, you know, things like the right number of swabs are present, the right level of instructions. The broader research that we're talking about here, you know, that's really keeping an eye on what is best practice in terms of the best type of swab that you could use.

There's lots of evidence, lots of papers in the literature about the availability of different swabs and how some may perform better than others. There is some literature out there that suggests that rayon swabs may not be as effective as some of the other types of swab that could be used. Again, we don't know what's in the kits across Australasia. We'd expect that there would be some variation. One would imagine that rayon swabs would be being used. You know, there's no reason that we can see to stop using rayon swabs, but it may well be that some research undertaken, you know, periodically would be

helpful to make sure that, you know, the kit composition remains best practice. So I think the answer to that question would be, yes, it could be certainly a two phased approach.

MS HEDGE: But is that what you recommend, that they, as you say, do something relatively quickly with the things you've identified and then research in an ongoing way to ensure that they keep up with best practice, is that the recommendation?

DR KOGIOS: Yes. And that second piece is, you know, it applies broadly. It's always important for forensic science providers to be maintaining a watching brief on emerging best practice for, you know, everything that we're doing, including the consumables that we're using, and including in relation to sexual assault case kits.

MS HEDGE: And in terms of time frames for that first stage of obtaining the things that you recommend should be in the kit and undertaking the consultation you described immediately before that, is that something that could be done in a matter of weeks or months?

DR KOGIOS: Well I think the working group could be stood up pretty quickly and then from there it would come down to availability of the individuals involved in the working group, but I would have thought that that would be something that could take place over a matter of months.

MS HEDGE: Yes. Thank you. Ms Baker, did you have anything to add to that topic of sexual assaults investigation kits?

MS BAKER: Not specifically, I think I would echo Professor Kramer who said this has to be patient centric approach and we appreciate how very traumatising it is to go through such a medical examination, so any help that forensics can contribute to making that sort of as efficient and minimising the trauma to the patient is to be encouraged.

MS HEDGE: Yes. And to make clear the sort of division of your expertise between yourselves and Associate Professor Kramer, she was looking at the collection side, whereas you're looking at this really from a forensic DNA side and that's why you're focused on the actual kit and so on, but that, of course, has some impact on the patient centred

trauma focused approach, is that correct?

MS BAKER: Absolutely. So what may well be optimal for us in terms of number of swabs to be collected and covering all bases from a forensic perspective may lead to an incredibly lengthy examination for a patient that in some cases either may not be warranted or may be not appropriate given how that patient is, so I think we also appreciate the flip side of what we do, which is the best (indistinct) certainly doesn't trump actually being patient centric and focused on that individual.

DR KOGIOS: And I think that that would largely come down to the discretion and the training of the practitioner. So the scientist's approach might be to help or to contribute knowledge to build the best kit possible to cover the different scenarios and then, you know, to furniture the person doing the collection with those best kits and then how that kit is used in any particular given case, that would need to be really at the discretion of the person conducting the examination through that lens of that trauma centric approach.

MS HEDGE: Thank you. Commissioner, that's the end of that topic. I see the time. Would now be a convenient time for the morning adjournment?

THE COMMISSIONER: Yes, all right. We'll adjourn until 20 past.

SHORT ADJOURNMENT

THE COMMISSIONER: Ms Hedge.

MS HEDGE: Thank you. Can you see and hear me, Dr Kogios?

DR KOGIOS: Yes, I can.

MS HEDGE: All right. And Ms Baker?

MS BAKER: Yes, I can.

MS HEDGE: Fantastic, thank you. All right, can we turn to the third section of your report now which is part C, Laboratory Management and Culture, which starts on p73. Again, you deal with a number of aspects under that section but I won't deal with all of them with you in oral

evidence. So can I first deal with the matter of Quality Management which starts on p82, Quality Culture, and can I turn to p83 and direct this to you, Dr Kogios. In paragraph 206 you identify the aspects of the SSM, that is the quality manager of FSS?

DR KOGIOS: Yes.

MS HEDGE: And in 207 you deal with the role description and information you were given about the Senior Scientist Quality and Projects, which is the person who sits within the Evidence Recovery and Quality Team underneath Ms Brisotto?

DR KOGIOS: Yes.

MS HEDGE: So those paragraphs set out what those persons' role is. And then can we turn over to p84. I'm sorry, I should say something about that. Back to p83. That is that the quality manager of FSS described her role as advisory in nature, with limited influence in quality within the forensic DNA lab because the group was very self sufficient?

DR KOGIOS: Yes.

MS HEDGE: You also note that she has - and this is in paragraph 205 - the person who holds that role has a broad portfolio, including both forensic, public health and other FSS related quality issues?

DR KOGIOS: Yes, that's right.

MS HEDGE: All right. And then in paragraph 207, in terms of the senior scientist, you note that they have a limited capacity - what that role is, that role has a limited capacity of independent oversight and doesn't have oversight of all quality responses or all projects and so on?

DR KOGIOS: Yes, it was more a limited ability to enforce standards because of that lack of independence that's sort of embedded within the casework team.

MS HEDGE: Yes. And also in terms of reporting line or line of responsibility, that is the person who holds that role reports to Ms Brisotto who then reports to Ms Allen,

so that's where the lack of independence comes from?

DR KOGIOS: Yes.

MS HEDGE: And I note that in paragraph (a), 207(a), the senior scientist described her limited ability, particularly insofar as they related to at level or senior staff?

DR KOGIOS: That's right.

MS HEDGE: And that position is a HP5 position?

DR KOGIOS: Yes.

MS HEDGE: And so there's quite a lot of staff that are at level or senior, aren't there, in the lab?

DR KOGIOS: Yes, that's right, staff --

MS HEDGE: And in fact - I'm sorry, you go on.

DR KOGIOS: Yes, just to say that's right and that those staff are involved in casework as we understand it.

MS HEDGE: Yes, but also all the staff who are at level or senior, they're likely to be the ones who would be dealing with the quality incident, like managing a quality incident?

DR KOGIOS: Yes, that's right, they're likely to have a role, you know, in directing the work that's done as part of the rectification of the issue.

MS HEDGE: Yes. So the level of that position may also play a part in the limited ability to effect quality outcomes?

DR KOGIOS: Yes.

MS HEDGE: All right. Can we turn then to p84. And in paragraph 209 you set out some general principles about quality roles, the first being the first sentence, that the quality role should have power to influence practice?

DR KOGIOS: Yes.

MS HEDGE: And, secondly, in the second sentence, there must be independent oversight, and by that do you mean independent oversight of the laboratory's functions?

DR KOGIOS: What we meant by that was really independence of the casework function, so somebody sitting outside of the casework group looking in.

MS HEDGE: All right. And then in the third sentence of that paragraph you identify that resourcing needs to be sufficient to provide capacity for proactive quality management, not just reactive quality management?

DR KOGIOS: Yes. This is absolutely the ideal state.

MS HEDGE: And in the fourth sentence you deal with connectivity to the broader forensic community to maintain awareness of emerging best practice and actively drive implementation, do you see that?

DR KOGIOS: Yes, that's right. There's a particularly active body at the national level, the QSAG, the Quality Specialist Advisory Group, very active, and there's a growing body of knowledge around best practice and quality. So in an ideal state then your forensic quality lead in the forensic science provider would be really well connected into that community.

MS HEDGE: And those principles in paragraph 209, is that a description of what a best practice quality management system would look like?

DR KOGIOS: Yes.

MS HEDGE: Now, can we turn then to p85 and look at your recommendation in this area, recommendation number 38. You suggest the creation of two particular roles. The first is a quality manager role dedicated solely to forensic casework. So could you explain what you imagine that role would involve?

DR KOGIOS: Yes. And it might be helpful to speak specifically about the Queensland lab. I mean there was a lot that we saw that was positive in relation to the quality culture, lots of comments around quality being everybody's business, each staff member has quality featuring in their role description and there was a sort of

statement really of intent around quality that was present in the laboratory, but I guess we make this recommendation when considering that we felt that the current arrangements in the laboratory were not sort of sufficiently robust in terms of empowering that proactive continuous improvement approach to quality.

And again it's important for us to say there is no such thing as a universal accepted best practice organisational structure for quality. But in terms of the FSS lab, you know, we did observe that the senior scientist's quality in projects, you know, whilst highly experienced and knowledgeable has that limitation around her role in terms of ability to set an enforced practice, as we've just discussed. She's also got lots of other roles and lots of other functions so difficult for her to be as proactive as she would like to be is how she described that to us. And then the laboratory does have this dedicated quality manager role, and that's good and that role does exist and it reports direct to the Executive Director which is ideal. But the problem there is that that portfolio is just so broad. I mean not only does that role have responsibility for quality management in relation to the forensic sciences, so not just DNA and chemistry, it also has responsibility over the Coronial stream and also over the public health stream of work as well. We just felt that, you know, given the complexities around forensic science that, you know, just DNA alone, has this Commission has heard, and given the level of risk really that arises in relation to quality in forensics, we felt that this laboratory would be better served by having a quality manager dedicated solely to forensic case work.

MS HEDGE: All right. Just dealing then with your answer about the quality manager, that is the one which reports directly to the Executive Director in the current position, you were advised of the portfolio or functions that she has under her responsibility?

DR KOGIOS: Yes.

MS HEDGE: Which you've just told us. But would it be fair to say you don't have much information about how much quality demands come from those other functions because we're only dealing with the lab here?

DR KOGIOS: Yes, that's right, we didn't take a close look

at that but one could imagine that they would be significant.

MS HEDGE: Yes, so the assumption you've made is that she has significant demands from all of those different streams?

DR KOGIOS: Yes.

MS HEDGE: All right. Moving back then to your recommendation and the quality manager role. Assuming that the laboratory is situated in the same place within the Queensland Health hierarchy, just assume that for the moment, do you think that that quality manager role would sit in a similar position as the FSS quality manager, that is reporting to the Executive Director?
A. Yes, that's right, that's right.

MS HEDGE: All right. When you say that it should be dedicated solely to forensic case work, is that forensic DNA as opposed to forensic chemistry and other things or do you mean that more broadly?

DR KOGIOS: No, more broadly. More broadly. Focused on the work that falls into the forensic category at FSS. That might encompass the Coronial work as well because absolutely there's a link there, but we would think that the public health responsibility would be carved out of the role.

MS HEDGE: All right. So from your experience and expertise it would be possible for someone to be the quality manager of Coronial, chemistry and DNA and achieve those best practice things in paragraph 209, including proactive quality management?

DR KOGIOS: I think that it would be possible to have broad oversight of those areas. There may be a need for a quality team to support that person depending on the level of work that's involved. The other half of this recommendation speaks to establishing what we're calling quality lead roles within each of the relevant teams. Obviously we confined ourselves to the DNA analysis unit because that what is we were asked to do, but one could imagine a sort of a network type arrangement whereby the overarching quality manager has access to a network of quality leads embedded in all of the teams right across

their portfolio, and that provides a way of having that close connectivity through to the actual work group themselves and a way of bringing in that expert specialist knowledge that relates to each individual work group within that organisation.

MS HEDGE: All right. That quality manager role, just keeping with that, and we will come to the quality leads so don't be concerned. The quality manager role, would you imagine that that role would have a significant amount of work to do after this Commission, by that I just mean will there be a higher demand in the short-term for that role?

DR KOGIOS: Look I think so. I think that, you know, whilst many of the issues that we've talked about in the Commission have been sort of policy considerations, I think that this work group has been under significant pressure for a sustained period of time and, you know, one shouldn't underestimate the challenge ahead for this particular laboratory in rebuilding and moving beyond this particular point in the Commission. I think it would be really helpful to have this role anyway, for any laboratory to have this dedicated quality manager function I think is really a requirement, but I think particularly moving beyond this stage I think there's going to be lots and lots of work for this quality capability moving forward.

MS HEDGE: All right. What level of qualifications would you expect that quality manager to have?

DR KOGIOS: Quality managers often have a background as practising forensic scientists and then do, you know, specific training to equip them with the requisite skills to go off and, you know, be quality professionals. Other quality managers might come in from other quality related industries but already, you know, with that quality knowledge. There's no one, you know, right answer. It really comes down to the individual and, you know, how it works in their jurisdiction.

MS HEDGE: All right. That position as it currently is, that is the FSS quality manager as I understand it is a HP6 position, which is the same level as say Mr Howes and Ms Brisotto, just in terms of orienting yourself with those levels. You understand that?

DR KOGIOS: I accept that, yes. I can't recall that but

yes.

MS HEDGE: Ms Allen is a HP7 level and then the Executive Director is off that scale in a different part of the public service arrangements?

DR KOGIOS: Right, yes.

MS HEDGE: So do you think that that level is appropriate, that is a lower level than the managing scientist of the laboratory?

DR KOGIOS: Well I think the most important thing is having that direct line to the Executive Director. The actual level of the role, I think that's something that, you know, would be scored in line with the broader public sector arrangements in the state of Queensland and it's not probably not something I can comment on. It really would be a question of looking at the role description, the position description and seeing how it compared across the QPS, sorry, the Queensland Health public sector and the broader Queensland public sector. But the most important thing is the appropriate level of seniority and that direct line through to the ultimate accountable officer.

MS HEDGE: Okay. You mentioned that often people who hold these roles were originally practising forensic scientists before undertaking other training in the quality space. Do you think it would be possible for that role to be held or fully operated by someone who doesn't have forensic DNA experience?

DR KOGIOS: Well I think so. I mean as long as they've got a strong quality background, you know, have that close connectivity and the support that would come through the network of quality leads who could bring that subject matter expertise from the forensic perspective. I think that could work absolutely fine.

MS HEDGE: Let's go on to these quality leads. You described that as within each of the DNA analysis unit teams. By that do you mean - you understand beneath Ms Allen there's two larger teams, one under Mr Howes, one under Ms Brisotto, evidence recovery and quality on one side and reporting and intelligence on the other?

DR KOGIOS: Yes.

MS HEDGE: Is what you meant by teams or did you mean the lower fine grained teams of reporting team 1, reporting team 2?

DR KOGIOS: I mean I think ideally you'd have a quality lead within each of your sort of functional teams. You may not need one each in the two reporting teams but you might, you know, one in the evidence recovery team, one in the analysis team and then perhaps one to cover the two reporting teams. It really is the idea of having a dedicated person, you know, whose primary focus really is quality in each of those teams. What we're describing here is, you know, not necessarily something that would be in place in all Australasian jurisdictions, we just think it would be really helpful in this laboratory.

MS HEDGE: Yes, I understand. So when you say that the primary focus would be on quality, would that mean that that quality lead would not do case work?

DR KOGIOS: No, I actually think it is important to stay close to the case work because that's how you maintain contemporary knowledge about the, you know, the issues that are potentially coming up in your case work. I wouldn't necessarily see the two as being separate. I think the benefit of having this quality lead model is that that is a person who is sufficiently connected to the work of that particular work group that enables them to, you know, appropriately guide quality. That then also helps them support the overarching quality manager because they do have that specific knowledge relevant to the case work.

MS HEDGE: All right, I understand. I assume at least by primary you mean at least more than half of their time would be dedicated to quality?

DR KOGIOS: I mean I think, you know, on any given week how much time they were spending on quality would depend on what was going on. It would need to be the understanding was that quality issues would take primacy. So it wouldn't be a nominal role. Let's say that, you know, they were expected to do, if case work permitted, it would be more that they would be expected to be the one who would be driving the quality issues and how much time that would take at any given time really just depends on what's on their plate at that moment.

MS HEDGE: All right. Would they be involved in both the reactive and proactive aspects of quality?

DR KOGIOS: Yes, ideally. Again, what we're describing here is really the ideal state. So we're talking about giving people the bandwidth to be able to do exactly that. You know, not just timely progression of quality issues when they arise but that proactive piece, you know, it's that preventative element I guess. And you really do need time and space to be able to do that work.

MS HEDGE: All right. If we think about some of the more proactive aspects of quality that currently exist in the lab, for example projects and audits, who would have overall responsibility for them with these new roles that you've proposed?

DR KOGIOS: Well ultimately the quality manager, they have the overarching responsibility to make sure that things are being done with the frequency they would be required to be done. They'd also sort of play that overarching role to kind of, you know, periodically look into, you know, the audit, you know, that sort of check-in role if you like just to make sure things are moving. None of this takes away the responsibility of the managers themselves though. These are additional supports. Your management team are always going to be the ones who are responsible for making sure that, you know, the business is operating according to sound scientific practices. So, you know, how you would split the roles and who's responsible for what, ultimately you still have to have responsibility tracking back to your managers. It's more that just what we're doing here is creating capacity, creating a network that enables people to be suitably connected to the case work but also independent of and having that capacity to drive the proactive work.

MS HEDGE: All right. So just to confirm with the current roles. These quality leads, they would be instead of the current quality team within the lab or are they additional to the quality team? That is there's a senior scientist and a scientist in the quality team at the moment, positions I mean, I don't people, I mean the positions exist. So would these positions that you're proposing of quality leads be instead of those two positions?

DR KOGIOS: Yes, we're proposing a different model for the management of quality within FSS.

MS HEDGE: Yes, all right. Thank you. Can we deal with another aspect of quality which is accreditation?

DR KOGIOS: Yes.

MS HEDGE: Could we turn to page 92. We'll start on 91 please. At paragraph 232 you state that one way to demonstrate commitment to a culture of quality is through accreditation and that QHFSS is accredited with NATA, the National Association of Testing Authorities, to ISO standard 17025.

DR KOGIOS: Yes.

MS HEDGE: You set out there's regular assessments and requirements and so on. You also identify at the bottom of that paragraph other things that QHFSS does, proficiency testing, peer review, internal auditing and exercising document control?

DR KOGIOS: Yes.

MS HEDGE: The proficiency testing is something that's done externally?

DR KOGIOS: Yes.

MS HEDGE: You deal with that in another part of your report, but the other things there are all internal measures?

DR KOGIOS: Yes, that's right, yes.

MS HEDGE: Now we can turn over to page 92. In paragraph 233 you say that you've inspected NATA assessment reports for 2022, 2020 and 2018, all of which showed a very high rate of compliance with the criteria against which QHFSS was assessed, is that right?

DR KOGIOS: Yes.

MS HEDGE: ISO 17025 is a standard for testing laboratories, is that right?

DR KOGIOS: Yes.

MS HEDGE: It's not a forensic standard specifically?

DR KOGIOS: That's correct.

MS HEDGE: And it's not a forensic DNA standard specifically?

DR KOGIOS: No.

MS HEDGE: All right. Could you just tell us what the focus is of 17025, what sort of things accreditation would involve looking at?

DR KOGIOS: General testing and calibration really for laboratories that offer those sorts of services. It was a whole range of aspects that are examined under the standard and it relates to things like (indistinct) control and internal audits, the facilities, it's very broad.

MS HEDGE: And 17025, just for example, is also the standard that the chemistry lab is accredited to, is that your understanding?

DR KOGIOS: I believe so, we didn't look at the chemistry lab but that would be my expectation.

MS HEDGE: Yes. When NATA come and accredit a laboratory they have an overall assessor and also a technical assessor, is that right?

DR KOGIOS: That's right.

MS HEDGE: The technical assessor who would look at the DNA lab would be a forensic DNA scientist?

DR KOGIOS: Yes, they would.

MS HEDGE: But their job, that is the technical assessor's job when they come to the lab would be to assess the lab against 17025?

DR KOGIOS: Yes.

MS HEDGE: So it's not part of NATA's assessment to determine whether a lab is operating in accordance with

best practice?

DR KOGIOS: No, that's right. And as we've said, you know, what is best practice? There's no sort of universal, "This is best practice for the operation of a forensic science provider that covers all aspects of a laboratory". So it would be a difficult challenge for a technical lead to perform that level of check.

MS HEDGE: Yes, but as I perceive it you accept that there are in some parts of the operation of a laboratory things that are within the range of best practice, for example, not having YSTR, you've accepted that that falls outside the range of best practice?

DR KOGIOS: Sure, according to the framework that we developed for the Commission, for the work that we were doing here in the Commission.

MS HEDGE: Yes, and that's not something that NATA would have - well, that's not something that NATA's ever raised with the lab, is it? In those three accreditations you looked at, 2022, 2020, 2018, they didn't raise that issue?

DR KOGIOS: I don't believe so. I might check that with Ms Baker.

MS HEDGE: I'm not being critical of anyone, but that's just not their job, is it, to find out whether the lab has all the methodologies that are best practice?

DR KOGIOS: No, it is not.

MS HEDGE: They just wouldn't have looked at that?

DR KOGIOS: They are not there to look at that. They are there to look at the ISO standard. I'm just trying to recall whether in any of the documentation that we looked at from the assessment report if there was any to YSTR. I don't think there was but Ms Baker may know, may recall.

MS HEDGE: We can go on a little if you like, Ms Baker, so you've got a few minutes to look that up. Does that suit you or did you want to answer that directly?

MS BAKER: No, if you could go on that would be great, I'd just like a couple of minutes to clarify that.

MS HEDGE: Yes, thank you. That is why you said earlier I think that accreditation is just one aspect of a good quality system, it can't be relied on as the only aspect?

DR KOGIOS: Well that's right. I mean if you have a sort of an ideal approach which involves, you know, pro-activity and continual improvement, then NATA is one of the things that you're doing. NATA come in every two years. So, you know, that can't be the only thing that you're doing. Quality can't be a set and forget. So accreditation through NATA is good but it can't be the only thing that a forensic science provider is doing in relation to quality.

MS HEDGE: All right. Now the proficiency testing involves effectively like a test sample going into the lab and being processed through the lab and then you report your results back to the provider of that test, just simply put?

DR KOGIOS: Yes, that's right.

MS HEDGE: You know, the test sample might include some blood or some saliva and then you report back what profile you've got and you get told whether you were within the range of what you should have got and other labs got, or you might get told that you're well outside what other people received, is that right?

DR KOGIOS: That's right.

MS HEDGE: Those two types of external review that the laboratory undergoes, neither of them are an assessment against best practice, taking into account what you've said about whether there is a best practice in all categories?

DR KOGIOS: No, in the purist sense that's correct. The NATA assessment is assessment against the international standard and the proficiency test is an assessment of the ability of the laboratory to obtain the results that would be expected in that proficiency test.

MS HEDGE: You might have seen that in this area Dr Taylor, Dr Duncan Taylor recommended that validations be externally reviewed, reviewed by someone outside the laboratory to check that they were done in accordance with best practice?

DR KOGIOS: I'm trying to recall that part of Dr Taylor's

report.

MS HEDGE: I'll just obtain that. We can bring it up on the screen but if you just assume it from me for the moment and if I'm wrong then the premise of the question will be removed. But do you think there are other areas of the laboratory's operations that also need some sort of extra external review to check that they're best practice?

DR KOGIOS: Not necessarily a formal external review. I mean I think that we all benefit from informal engagement with other forensic science providers outside of our own, a bit of a sense check if you like, and certainly the specialist advisory groups that are coordinated by the National Institute of Forensic Science are very good at doing that. You know, there's a sort of a regular review right across the forensic (indistinct) if you like in terms of who's doing what and how things are done. So there is already a degree of sort of informal review and comparison, if you like. The need for any further external review, well it wouldn't be a bad thing.

The other thing that's probably worth considering is it might be that there could be occasions where a particular external review could be of benefit. So if, for example, you're seeing something in case work that's proving a bit of a struggle, we talked about bones earlier, mixtures in bones, you know, that might be an occasion where you might say, "Oh, let's get another laboratory to have a look at what we're doing", and we heard some evidence of FSS having done that with the SR in relation to sperm testing.

So I think, you know, a situational type of approach is probably a good idea and that, you know, managers of forensic science providers could certainly think about calling upon others to come in and have a look if the situation warranted.

MS HEDGE: All right. Just dealing with that mention you just made of the ESR report relating to sperm microscopy, are you aware of the breadth of that request of external review?

DR KOGIOS: I have not looked at that in any detail.

MS HEDGE: It was a desk top review of one - well, not of

one but of a number of Standard Operating Procedures where ESR weren't advised of the actual problem that was occurring in the laboratory.

DR KOGIOS: I understand that.

MS HEDGE: Given that information would you use that as a good example of an external review?

DR KOGIOS: So I'm not using it as a good example per se, just using it as an example of a laboratory reaching out for external review in response to a problem. As a general concept that is a good thing to do. How it was done in that particular case, yeah, that's not what I'm seeking to comment on.

MS HEDGE: I understand, and I don't think you were briefed with that material.

DR KOGIOS: No, that's right.

MS HEDGE: If we talk more generally, just putting that to one side, talk generally about when - if as you suggest the laboratory identifies an issue and decides to proactively seek an external review, is it the case that the external reviewer would need to be told in detail of the problem that was occurring within the laboratory to do a proper review?

DR KOGIOS: It just depends on the scenario or on the circumstance, the reason why you're bringing someone in and what you're hoping to achieve.

MS HEDGE: All right. That process that you've just described of internally at the laboratory deciding whether they need an external review, that relies on a really strong quality culture inside the laboratory, doesn't it?

DR KOGIOS: Yes, that's right.

MS HEDGE: Your other recommendations about the quality manager role, the quality leads, the embedding of quality at all levels, that would all have to be going well because otherwise things just wouldn't be referred out?

DR KOGIOS: Yes, that's right. We're talking about a proactive continual improvement approach to quality.

MS HEDGE: Thank you. I've just got Dr Taylor's recommendation now, so it's EXP.0003.0001.0080. Could we go to the next page. Do you see recommendation 7 at the bottom of that page? Can you see that, Dr Kogios?

DR KOGIOS: Yes, I can.

MS HEDGE: So that was a recommendation and then we asked, I asked Dr Taylor in his evidence what external to the group meant and he said outside of the laboratory, outside of forensic DNA?

DR KOGIOS: Yes, this is - I understand now. I thought you were meaning external as in from another jurisdiction. But I believe what Dr Taylor is referring to here is outside of the actual work group. So drawing upon the resources that might be available to you, perhaps DNA analysis going into chemistry or going into another part of Queensland Health for some sort of external oversight. I believe that's the basis of his recommendation here.

MS HEDGE: Yes, he gave both of those examples, so within Queensland Health outside forensic DNA, or interstate or international. So he considered, you know, there was a number of ways it could be obtained. What I'm asking you is whether there's other parts of the laboratory's operations that you think should also have an external review on top of NATA and proficiency tests?

DR KOGIOS: Well look, it can never hurt. I mean fresh eyes coming in and looking at what you're doing is always a good thing. The extent to which people do that as part of their regular activity, it's hard to say. I would expect that it would be something that would be given consideration to on a case by case basis if a particular issue had arisen in a laboratory.

MS HEDGE: All right. So you don't recommend some sort of five yearly review or something of that nature? You don't recommend it in your report, I'm just asking?

DR KOGIOS: We haven't turned our mind to that, we haven't made a recommendation around that in the report. I mean I think if you've got your external accreditation happening every two years through NATA or through your accreditation body and you've got that, you know, really strong,

proactive continual improvement approach to quality happening in-house, then I think that that's sufficient.

MS HEDGE: Yes, all right. When NATA do raise an issue it must be dealt with, mustn't it, by the laboratory to maintain their accreditation?

DR KOGIOS: So they have different tiers and certainly if they raise something up to a certain level then it is absolutely mandatory that the laboratory take it on board and address it and provide evidence of having done so back to NATA.

MS HEDGE: So maybe another example of something that NATA didn't enforce change on is the DIFP range. They did a number of accreditations while DIFP was in force and they didn't require the laboratory to remove it?

DR KOGIOS: Yes, I think they did two, would that be right? I'm not sure when in 2018 the NATA review took place, whether the DIFP threshold --

MS HEDGE: Yes, let's say at least two.

DR KOGIOS: At least two, yes. No, I don't believe that there was any recommendation made in relation to the DIFP threshold.

MS HEDGE: Yes. Is that another example, a fair example of NATA not identifying a really significant concerning issue in the laboratory?

DR KOGIOS: So the threshold --

MS HEDGE: Because of what (indistinct words)?

DR KOGIOS: Well I mean the threshold really is a matter of policy for the laboratory, more so necessarily than the actual science. I'm talking here about the DIFP threshold not the limit of detection threshold.

MS HEDGE: Yes.

DR KOGIOS: It's more a matter of policy than it is a matter of science.

MS HEDGE: Ms Baker, did you have a chance to see whether

NATA recommended or raised any issue with the lack of YSTR in the Queensland laboratory in the last five years?

MS BAKER: I did, yes, and there's no reference to it.

MS HEDGE: All right. So if someone was to give advice that being accredited by NATA means there's no problem with the science in the laboratory, that wouldn't be good advice, would it?

DR KOGIOS: I mean I don't think you can rely on NATA alone. I think there are other things that you need to have in place. I don't think it would be possible for NATA to coming in once every two years pick up everything that they would necessarily need to pick up. I mean they are very much focused on compliance with the standards.

MS HEDGE: Yes, all right. Can we turn then to what you do recommend about standards. Can we go to page 92 of your report, and in paragraph 234 you identify that NATA also offers assessment against four Australian Standards, which are all part of AS5388, forensic analysis?

DR KOGIOS: Yes.

MS HEDGE: Do these four standards involve much more - is this only forensic DNA or is it forensic chemistry or Coronial and other issues as well?

DR KOGIOS: Forensic broadly.

MS HEDGE: All right. So are there specific requirements for forensic DNA in these standards?

DR KOGIOS: There are specific requirements that relate to forensics in general and forensic DNA is part of that.

MS HEDGE: So there's not some specific section that says, "And these are the things for forensic DNA separate to the others", it's done at a higher level than that?

DR KOGIOS: Yes, it's a broader forensic discipline agnostic approach.

MS HEDGE: All right. But much more tailored to what the forensic DNA laboratory does than ISO 17025?

DR KOGIOS: Yes. These standards really expand the original ISO standards and provide extra specific information that relates to the forensic environment.

MS HEDGE: You say in paragraph 235 and also in recommendation 43 that you recommend they consider broadening the scope of accreditation to be assessed against those standards. Would there be any good reason not to be assessed against those standards?

DR KOGIOS: The standards are relatively new. It's certainly my understanding that not all Australasian forensic science providers are accredited to these standards as yet. It's something that we recommend consideration be given to.

MS HEDGE: Okay, but just coming back to my question. Would there be any good reason not to accredit to the standard? Presumably there would have been some significant development process for this standard. You would have no concerns about the content of the standard, would you?

DR KOGIOS: No.

MS HEDGE: So would the only reason not to accredit be a resourcing cost question?

DR KOGIOS: That is really a question for every individual jurisdiction to answer. There may be reasons that they have for not having pursued this as yet. It might be a question of these are new standards, let's see, let's wait and see, keep an eye on it, keep a watching brief on it. I can't speak for each jurisdiction as to whether they would have a reason not to. I recommend that consideration is given to it because I personally can see benefit.

MS HEDGE: I see. Perhaps I should ask it this way to take out the policy aspect of it. Would there be any scientific reason not to accredit to those standards?

DR KOGIOS: Any scientific reason not to accredit to the standards? I'm just trying to understand your question.

THE COMMISSIONER: So am I, Ms Hedge.

MS HEDGE: Well perhaps I'll rephrase it in a different

way. Assuming the laboratory wants to operate at a level of good practice, good to best practice, let's say, so a really high level of operation, would you agree that accrediting to those standards would have assisted in that aim?

DR KOGIOS: Yes, and that's why we've made this recommendation that consideration be given. Because these standards are available and they are specific to the forensic industry, so we recommend that it is something that is actively given consideration to and then potentially actively pursued.

MS HEDGE: All right.

DR KOGIOS: The next step of course would be to have a look at the standards and see what the gap is between what you're currently doing and what that standard is and then developing a bit of a plan for what that might look like in terms of how you would plug gap, and that might inform your decision about when would be the right time to go ahead and pursue that consideration. So what we're calling for is consideration of this as a way forward.

MS HEDGE: Do you have anything you want to add to that, Ms Baker?

MS BAKER: No. I guess, yes, I use a different accreditation modelling so my expectation would be those standards, you know, they're available for forensic laboratories so I would recommend the laboratory pursuing them. And that there are alternative accreditation providers as well, so it really depends on what the laboratory feel they would like to be accredited in and the level of accreditation that they wish to attain and then finding a provider that suits their needs.

MS HEDGE: All right. Can I just look quickly at paragraph 236. You note there that there was a UK House of Lords report about forensic science and the criminal justice system?

DR KOGIOS: Yes.

MS HEDGE: It states that those standards, international standards, do not confer accreditation on individuals working within an accredited organisation?

DR KOGIOS: Yes.

MS HEDGE: They go on to say that those standards cannot ensure the accuracy of every result of any given examination of forensic material?

DR KOGIOS: Yes.

MS HEDGE: You adopt those comments I assume and that's consistent with what you've said today, Dr Kogios?

DR KOGIOS: That's right, and that's why we've included this in our report. I mean it just really reinforces our belief that, you know, you must take an ongoing continual improvement proactive approach to quality and that's the best line of defence.

MS HEDGE: All right. You also note a paper which states that the notion of quality has become synonymous with accreditation based on ISO standards but Ross and Neuteboom consider that notion is too limited and you agree with that also, that that's too limited an approach, it must be a much broader approach to quality management?

DR KOGIOS: Yes.

MS HEDGE: All right. Can I turn to something else now. Can we turn to page 75, and this is under a heading described as "organisational structure" but can I just deal with two aspects of what you deal with in terms of organisational structure. The first of those is the development of a technical lead. In paragraph 179, if we zoom in on that paragraph, about two-thirds of the way down you recommend appointing a technical lead with authority of set and dry practice around the science to address the current condition where decision making by consensus with the quorum is challenging. Do you see that there?

DR KOGIOS: Yes.

MS BAKER: Yes.

MS HEDGE: This effectively means that there is a - what you're recommending in this paragraph is a splitting of responsibility, splitting management and science, which would be a different situation to the current position

where Ms Allen has responsibility for both management and science?

MS BAKER: Yes.

DR KOGIOS: Yes. We formed the view that there's an awful lot of responsibility sitting on the shoulders of the managing scientist. She's responsible for chemistry as well as DNA science. She doesn't have a single direct report sitting under her in DNA analysis and, you know, she doesn't have a dedicated research development and innovation team. We felt that - again, no such thing as universal best practice in terms of an organisational structure for the delivery of forensic science, and particularly forensic DNA, but we felt that with this particular lab, in this particular time, given the issues that have been discussed at this Commission, we felt that this model would be really helpful for the laboratory moving forward.

MS HEDGE: All right. Do you have something to add to that, Ms Baker?

MS BAKER: I agree with Dr Kogios and I think an independent technical (indistinct words) can be really helpful for not only ensuring (indistinct) is working, but also to (indistinct) emerging best practice in the forensic field and being connected into that and other forensic service providers to make sure that your lab is operating in that best practice range and has the tools available to it to keep it within that range. And also that individual having a very strong sort of research and development focus and thinking about what's coming next in forensics, you know, where are the next sort of, you know, DNA profiling-esque technologies coming from and making sure that the lab is sort of best placed to either be sort of a leader or an early adoptor of those technologies to remain current.

MS HEDGE: Still with you Ms Baker, can we talk about the structure then. Would this technical lead person be at the same level as the manager person?
A. Ideally, yes, to reflect the importance of the client's decisions.

MS HEDGE: All right. And as you mentioned I think, Dr Kogios, you would have this structure only for forensic

DNA, so there wouldn't be this dual responsibility for chemistry and DNA with either of these people; is that right?

DR KOGIOS: So our view is that it would be better to have one, a single role with responsibility for DNA analysis and a separate single role with responsibility for the chemistry area, which we understand already exists. Then you would potentially have an overarching manager sitting with responsibility over the two, but these are sort of two separate issues. We were calling out what we saw as a gap in the current organisational structure, that underneath the managing scientist you've got two direct reports (indistinct words) DNA analysis, whereas really what you need is one overarching manager there. What that would do is it would stop some of the issues that are currently filtering up, it seems, to the managing scientist from coming up to the managing scientist, and it's probably by virtue of the fact that this particular managing scientist has a background in DNA so, you know, is well equipped to deal with some of those issues that are coming up to her. Maybe more issues are coming up to her from DNA than they are from chemistry.

But we certainly looked at the organisational chart and we saw two gaps really, one gap around this issue of one single person owning all of biology as their sole focus, not also owning chemistry as well, but also we saw this need for this separate role, the technical lead role, to be really that custodian of the scientific health of the laboratory insofar as the DNA analysis is concerned.

MS HEDGE: I see, thank you. So going back to you then, Ms Baker, in terms of how this all sits together. Just putting aside the current people who are - just not including any individual personalities or people, just assume the top role of forensic biology is called managing scientist, just assume it has that title, is the technical lead to the side of that person at the same level or is there two people below that technical lead and head manager?

MS BAKER: No, I would expect the technical lead to be sitting aside the managing scientist and I guess, you know, there should be a very, it should be a support to the management role and it should be a very collaborative relationship, ideally between the managing scientist or a

technical lead and your quality manager. I think those are three really critical roles who, if working effectively together, would produce a very strong scientific workforce.

MS HEDGE: And then if we go down one level from that, and assume there are those two big teams and there's a team leader of evidence recovery and an analytical - to remove quality from that for a moment and assume there's a team leader of forensic reporting and intelligence, do those roles also need to be split into science and management or would those roles maintain that joint focus?

MS BAKER: No, I don't see that they would need to be split, I think they could maintain their joint focus. Again, by having that technical lead role, some of the - it's an awful lot of tasks that those individual team leaders currently have, so some of those tasks can be taken aside and held with the technical lead and, again, the big part is you're not relying on the (indistinct words) to make a decision, you've actually got somebody who is empowered and authorised to make those decisions.

MS HEDGE: I see. All right, so that technical lead who would be sitting to the side of the managing scientist would effectively take some of the science out of those two team leader roles to ease the burden on them, on that role, is that what you're saying?

MS BAKER: Yes, effectively, yes.

MS HEDGE: All right. And what Dr Kogios said earlier, and answer Dr Kogios if you need to, about there being a lot of responsibilities on the managing scientist, was that also your view about those team leader roles, that they also had a lot of roles? Or was it just the managing scientist role that you formed that view about? Perhaps I should have Dr Kogios answer that.

DR KOGIOS: We didn't turn our mind specifically to the individual team leader roles, but I think it's fair to say that what we've done is we've called out some key additional roles that we think would be really beneficial to the operation of this particular laboratory. Inevitably that's going to take some pressure off the people who are in those team leader roles because they've now got access and they can tap into that extra support that - you know, the dedicated quality lead, the dedicated quality manager,

a dedicated research and development function, and this technical lead to drive and set best practice insofar as DNA analysis is concerned.

Obviously that's going to remove a lot of pressure from those individuals and I think we have heard evidence, this Commission has heard evidence about some of the experiences of those team leaders and how their role has changed over time from being predominantly about the casework and becoming more and more so about the administrative aspects to their roles.

You know, the administrative aspects to these roles, they are incredibly time consuming and you know there is no doubt in our minds that the individuals in those roles and those roles themselves would be benefited enormously through having these additional functions and capabilities and roles within the laboratory.

MS HEDGE: All right, thank you. Now, back to you, Ms Baker. Can you tell us, is that idea of a technical lead separated from the management, is that something that exists in many other laboratories in Australasia in your experience?

MS BAKER: It does. It's not the only way to do it but it certainly does exist. Also (indistinct) I know of laboratories that have that technical lead role. We probably call it something different. But in essence it's a person who is almost empowered to make those (indistinct words) to keep the lab operating in that best practice range and to make sure that they are sort of always scanning for what's the emerging best practice or the new technologies, so I know from personal experience that it works incredibly well in an operating model and I know that they're not unique to one or two forensic laboratories.

MS HEDGE: Thank you. Now perhaps a linked topic is the recommendation you make about developing a research development and innovation capacity or capability at the laboratory. So can we turn to p96 and, Ms Baker, maybe you could just tell us in recommendation 45 and - in recommendation 45 you recommend resourcing of a dedicated research development and invocation capability to support proactive access to an up-to-date fit for purpose suite of forensic techniques and ensure QHFSS remains contemporary in terms of scientifically valid service delivery. So can

you tell us just a little about, you know, in a best practice way how you would image that would operate?

MS BAKER: Yes. We're painfully aware that the laboratory - I mean obviously they're operating under incredibly challenging times at the moment and this laboratory needs to be supported through the Commission phase and beyond. There are obviously a number of projects on the go currently. Some are taking an incredibly long period of time and the laboratory is quite limited in terms of its forensic commitment.

So the reasoning behind this sort of separate research development and invocation capability is to ensure that those validations, those projects actually get pushed through within a reasonable time frame, that the staff are removed from casework to do that, and to ensure that business as usual can continue and it's not down to individual staff to be torn between project work and casework. We sort of felt that in this particular situation for FSS and the unique sort of set of charges and demands on their capabilities at the moment this would be a very helpful way of ensuring that they get up to speed with respect to their forensic tool kit and also maintain themselves in that best practice range with respect to their forensic service provision.

MS HEDGE: How big would you imagine that group of people is compared to the whole overriding lab?

MS BAKER: It would probably grow in strength depending on what type of work was being done. So, for example, if work was being done on a particular technique it could be that a scientist that has some of those kills or a lot of experience in that field might be seconded into the group, for example, for three or four months or a year, so it's not that there has to be a separate (indistinct) group and it's actually a great benefit for staff experiencing projects and that experiment, the design and that validation, it's a way of individuals to be able to gain experience in that. But the idea is once you're in that group and working on a specific project, your time is ring fenced and you're actually able to press through with that without having a lot of other competing demands.

So I mean how many people will depend on how many projects the lab has on the go. Ideally you'd have

continuity with that group so that there are individuals with excellent experience and knowledge around experimental design, statistics, validation, who sit predominantly within that group and (indistinct) and perhaps other scientists getting seconded in and out depending on what their own individual skills that they can bring to the project are.

DR KOGIOS: I was just going to add that blended model is really attractive because it means that you've got that dedicated resource who, you know - the core members of the group who it is their job, it is their day job, so they are absolutely engaged into the broader community and maintaining that watching brief on best practice, but then it also, as Ms Baker said, it gives that opportunity for your case working scientists to rotate in and out and to have that extra level of exposure to some research project. It's a fantastic aspect of career development, professional development, and just brings that extra level of variety, I guess, to their roles.

People who do that sort of thing, they go back to their casework roles, you know, in a stronger position because they've had that little break, they've had that broader awareness and that opportunity to sort of get back to basics, if you like, with the science, the thing that they trained to do at the outset. Forensics scientists become very sort of applied in their work, that is the nature of casework, and having that opportunity to step back into some sort of research environment and to learn new skills is really really helpful.

MS HEDGE: All right, thank you. Could I turn now to p60 of your report. This is recommendation number 27, which is a recommendation that there be an external review of the use of STRMix and then you identify in (a) to (f) particular things that should be considered as part of that review.

Now is it the case - I might direct this to you Ms Baker if that's suitable - is it the case that you would have completed this review of the use of STRMix by the laboratory as part of your terms of reference to consider the current operation of the lab but for receiving material too late for that to be completed?

MS BAKER: Exactly, yes. Unfortunately it's a substantial

piece of work and we didn't receive the material in time to do it justice.

MS HEDGE: Yes. And so is the reason for this recommendation that in your view there has not been a full review of the current operation of the lab until this piece of work is done as well?

MS BAKER: Absolutely, it's a really critical part of DNA interpretation and the way in which results are presented at court, so it's vital that somebody does do that review for completeness.

MS HEDGE: And when you say external, do you mean by people such as yourselves, that is from outside of Queensland? Outside of Queensland Health I should say?

MS BAKER: I would think ideally it is, in fairness and to be consistent with the rest of the approach that we've taken across this review.

MS HEDGE: All right. And by making that recommendation is it the case that you have not formed a view that the lab is not applying STRMix correctly or is outside of best practice in some way, but it's rather you're recommending the review because you haven't had the opportunity to do it yourself?

MS BAKER: Exactly, the latter, yes. I just feel that we haven't had a chance to do that and it is very important. I don't have any specific sort of preference or alarm bells going off with respect of this, I genuinely haven't had time from when the material was provided to when the report was due to do a sufficient deep dive into that material.

MS HEDGE: Thank you. Can I deal now with the impact on results, and I'm sorry, is there one of you I should ask specifically about this topic?

DR KOGIOS: Perhaps start with me and we can bring in Ms Baker if required.

MS HEDGE: All right. So can we deal in an overall - well perhaps, can I start in this way. Can I turn to p99 of the report and paragraph 258. And this brings in - these are part of your closing remarks and this brings in something you said earlier, Dr Kogios, that there will be extensive

work required at the laboratory if they are to implement your recommendations and the recommendations of other experts engaged by the Commission.

DR KOGIOS: Yes.

MS HEDGE: And you set out there that there is revisiting validations, retesting samples, addressing fractured relationships and cultural issues are all significant endeavours. Do you see that there.

DR KOGIOS: Yes.

MS HEDGE: And you call on the broader Australasian forensic community to support Queensland Health Forensics and Scientific Services and also indicate in the last sentence that it's vital that Queensland Health provide ongoing investment. Do you see that?

DR KOGIOS: Yes, absolutely.

MS HEDGE: In terms of what must be done moving forward, there is extensive work to be done, as you describe. Can I ask you though, overall, thinking in that overall way of all of the issues that you've found and the issues that other experts have identified that you've been briefed with, can we talk generally about the impact on results and by results I mean results that are reported to the police or a court through someone giving evidence. So do you understand what I mean by the word result in this context?

DR KOGIOS: Yes.

MS HEDGE: So can we deal first with results that have been reported as DNA insufficient for further processing or no - well let's start with that. Is it the case that consistent with your recommendation to retest those, or consider retesting those samples depending on case context, those results are not something that you would recommend reliance on?

DR KOGIOS: Do you mean the lack of results from samples in that DIFP range is not something that should be relied on?

MS HEDGE: No, I mean the result being there is insufficient DNA to test, that statement is not something that should be relied on in your view?

DR KOGIOS: That's right.

MS HEDGE: Yes. And for no DNA, because of the issue with the limit of detection in the validation, it's your view that those results should not currently be relied on until there's been a proper validation done?

DR KOGIOS: Yes.

MS HEDGE: So now can we move on to other sorts of results that the laboratory puts out into the public sphere for the police or the courts.

The next type of result is a match between a crime scene profile and a reference sample. So where, for example, there's a single source profile and the laboratory reports that it matches a reference sample and gives a likelihood ratio. So that sort of result. Was there any issue that you identify, Dr Kogios first, which could have resulted in any of that sort of result being unreliable?

DR KOGIOS: So we've just talked about the fact that we didn't have the opportunity to do that deep dive into the STRMix, the use of STRMix. In the absence of that work, so that's obviously the caveat on this, I think it's fair to say that our observations speak more to missed opportunity to harness forensic evidence and to produce results than they do to concerns that we have about the actual DNA results that have been reported.

MS HEDGE: All right. And, Ms Baker, do you have anything to add to that?

MS BAKER: No, I concur. It's a missed opportunity that we've highlighted in our report that will require that retrospective review and possible retesting.

MS HEDGE: All right. And now focussed particularly on the likelihood ratios that have been reported. Does that have the same answer, that is subject to the STRMix work there's nothing that you've seen that would make you concerned about all likelihood ratios being reported being unreliable? There's a couple of negatives in there. Did you understand that question?

DR KOGIOS: Yes. The same answer applies from my

perspective.

MS BAKER: I agree.

MS HEDGE: All right, thank you. Can we finally deal with a matter that's slightly outside the lab and that is earlier - while you were not briefed to look at QPS collection methods, some of those methods necessarily were part of the material you considered because of the interplay between QPS and Queensland Health in this phase, is that a fair summary?

DR KOGIOS: Yes.

MS HEDGE: And have you identified two particular issues about which you draw no firm conclusions but consider that further work should be undertaken?

MS BAKER: Yes.

MS HEDGE: Can I put a document on the screen. It's EXP.0007.0002.0001_R. This is an email from you, Ms Baker, to me dated 1 November 2022, is that right?

MS BAKER: Yes.

MS HEDGE: And you wrote this email?

MS BAKER: I did, yes.

MS HEDGE: And the first issue that you raise is about sampling technique using rayon swabs and the use of 70 per cent ethanol. Could you describe that issue for the Commission?

MS BAKER: Yes. I guess it struck me as a little bit unusual. So regardless of what capability you have downstream, the most important thing is what happens initially is your ability to recover DNA and also the ability of whatever you've used to recover that DNA that released the DNA for downstream processing.

I haven't come across a combination of rayon and 70 per cent ethanol. I understand that the ethanol is used to moisten a swab before a sample is collected. I'm aware of a few pieces of published work, and I will say there's not a huge amount on the literature, but the published work

I've seen says that in a lot of respects alcohol or ethanol can actually reduce the amount of DNA that's recovered and obviously that's not optimal and I guess - so it was just a case of making sure that that combination of rayon swabs with 70 per cent ethanol to moisten the swab before you collect a sample I guess has been validated and has been shown to be sufficient in terms of what it's recovering.

So I'm thinking of a situation where you're using a swab that's moistened with 70 per cent ethanol to swab up a bloodstain, and I understand from some of the work that's been carried that the dehydrating effects of the ethanol leads your bloodstain to get, suddenly get very flakey and then it's really hard to actually collect it on a swab head. And like I said, ideally you want to be able to recover the most material you can to give yourself the best chance of detecting the DNA further down stream.

So it's not a criticism as such, it's just something that I noticed and thought that that was a slightly unusual approach, but if it's been validated and shown to work well that's fine my me.

MS HEDGE: All right. And when you say the use of these swabs, this is in the use of collecting crime scene samples to your understanding?

MS BAKER: Yes.

MS HEDGE: It's not in SAIKs, for example?

MS BAKER: I'm not sure about the SAIKs actually, whether they are - I know they've got wooden sharps which I believe there's a sort of health and safety aspect to because unfortunate they do have a tendency to break in some circumstances.

MS HEDGE: Yes. Are they not dry swabs in the SAIK? At least the internal swabs to be dry swabs, would that be right?

MS BAKER: They wouldn't be moistened with anything first because they would be naturally moist once they'd been collected and then you would want them to dry out.

MS HEDGE: Yes. Dr Kogios, did you want to add something there?

DR KOGIOS: Yes. That's right, Ms Hedge, the combination of the rayon and the 70 percent ethanol is in the crime scene sampling, not in the SAIK kits.

MS HEDGE: All right, thank you. Now can we scroll down, please, Mr Operator, and back do you Ms Baker. Down on to the next page there should be a table. This table sets out the literature that you were describing, Ms Baker?

MS BAKER: Yes, it does. Just to give an idea of what's out there sort of in the scientific published domain and just to highlight for the majority of cases ethanol isn't performing particularly well in terms of recovery of DNA, compared to, for example, water.

MS HEDGE: And scroll down a little further please until you get to the next heading. You'll have to go above the table I think now. We'll just stay there. Can I just confirm the conclusion - well, you haven't drawn a firm conclusion about the swab issue, but it's your view, as I understand your previous answer, that that should be validated to use rayon swabs with 70 per cent ethanol should have been - should have some validation that sits behind it and your question is: is there one?

MS BAKER: I guess so, and it's really important to show that that combination is helpful across a range of different body fluids, so you've got obviously you know blood, saliva, semen, down to trace DNA, and it would just be interesting to know that that has been fully explored and that is considered an optimal method for the DNA recovery, because as we've talked about, there are numerous steps downstream of that that can be tweaked and optimised, but really your ability to recover your DNA on to a substrate that's then able to release that DNA is critical.

MS HEDGE: All right, thank you. Now, Mr Operator, can we zoom on that part Reporting DNA on p3. So this is a second issue that you raise, and that is that in some circumstances forensic officers report DNA results in their statements, as you understand it, from Standard Operating Procedures, but you understand they simply report what the lab has reported, they're not doing their own analysis or profile interpretation or anything like that, but they're including in their statements something that someone else has done?

MS BAKER: Yes, that's my understanding. That was just something I became aware of when I read through that particular swab and I guess there's the question of whether that is reported when the results come through the Forensic Register or is it reported when a statement has been provided by FSS, and I guess downstream if somebody's at court or answering questions as part of that investigation, who is best placed to provide that DNA expertise or expert evidence? And to make sure that if it is the QPS forensic officers that are sometimes asked to give DNA evidence, that they are suitably trained and able to do justice to that.

MS HEDGE: All right. And so the issue that you're raising here is one of transparency of reporting, that is who's reporting, what their qualifications are, what work they've done to lead to that report?

MS BAKER: I guess so, and really one of who's best placed to be providing that evidence in that respect.

MS HEDGE: Yes. If, for example, these statements were in briefs of evidence with a DNA statement also from the DNA scientist, then you would have no concern?

MS BAKER: I've seen situations, for example, that blood pattern analysis situation where it is helpful for the person giving BPA evidence to actually incorporate some of those DNA profiling results so you can talk about, you know, how the blood may have got there and what mechanisms may have produced that bloodstain pattern and whose blood it is likely to be, so I can see those situations where it would be helpful, but I just - guess I was interested to know that there is clear delineation of expertise and who is responsible for providing that DNA evidence and crucially, I guess, answering questions on that at court.

MS HEDGE: Yes. And I suppose that also brings in matters of the laws of evidence, that is if this person who is a forensic officer is not a DNA scientist, then the laws of evidence may prevent them from giving that opinion in court, you understand that?

MS BAKER: Yes, absolutely.

MS HEDGE: So there's a broader context here of which the

Commission hasn't briefed you is all I'm seeking to understand.

MS BAKER: Yes. I'm very aware that I'm coming from a place of very limited information when I'm saying this, so I'm more than happy to be proved that everything is actually fine, but just from the small snippets of information that I had available to me I felt obligated to raise those two concerns.

MS HEDGE: Yes. And you raised them with the Commission in the sense of saying the Commission might look into these, as opposed to raising them as something that needs immediate QPS attention or something of that nature, it was more directed towards the Commission; is that correct?

MS BAKER: It was, yes, because there may be other people who have looked into this that I'm not aware of, so just to make sure that it was being captured so it doesn't fall through the cracks.

MS HEDGE: Yes, thank you. Thank you Dr Kogios. Thank you Ms Baker. Those are my questions.

THE COMMISSIONER: Thank you. Mr Hunter.

<EXAMINATION BY MR HUNTER: [12.47 pm]

MR HUNTER: Dr Kogios and Ms Baker, can you see and hear me?

DR KOGIOS: Can hear you, yes, and don't have a close-up but can you see you in the courtroom.

MR HUNTER: Can I just ask you about the last matter we were talking about. And this is question directed to both of you. If it were the case that a police officer who was setting out in a statement a conclusion about a DNA result did so in a way that transparently indicated the source of information, that is a DNA scientist, that would allay any concerns you had about that?

DR KOGIOS: It certainly would go a long way to allaying those concerns and then, of course, you know, it would be incumbent upon that person not to be drawn down a line of questioning perhaps in a courtroom environment where they were outside their area of expertise, that's true of any

forensic expert giving evidence in court. So there's certainly nothing that we've seen that gives us any cause for concern that that is happening.

MR HUNTER: Ms Baker, do you have anything to add to that?

MS BAKER: No, not at all. If that's the case, and I guess it's important that as well as the sort of DNA attribution to an individual in a statement that if there were any particular caveats that were included in that DNA scientist's statement that those two were available in the officer's statement as an example.

MR HUNTER: And I take it you haven't seen, neither of you have seen any material that would suggest the extent to which this is happening, that is forensic officers with the QPS are purporting to report DNA results?

MS BAKER: No. As I've said, we're coming from a very limited scope of information in terms of those SOPs. We have very limited information around any of the QPS side of things.

MR HUNTER: Can I then ask about the sampling media, in particular the choice of swab and the choice of moistening liquid. Is it right that you would expect that the QPS would take advice from experienced scientists at the laboratory when making a decision about what sort of swabs to use and what liquid would be used to moisten them when necessary?

DR KOGIOS: That absolutely would be a sensible approach and again, you know, it does speak to a matter that we've mentioned several times in our evidence, that need for really good communication and collaboration between QPS and FSS. So I think that's right, I think you would look to the literature, you would look to your trusted colleagues, the experts over at FSS, and then maybe do some testing as well as to how it perform in your own hands. It would be a combination of those things.

MR HUNTER: I see you're nodding, Ms Baker. Do I take it you agree with that?

MS BAKER: I do. I think that's a really safe way to sort of make sure you look at all options, so what's in the published literature, what your own laboratory are using,

perhaps what other laboratories are using, and are making sure that in-house validation has been carried out.

MR HUNTER: And am I right in thinking that the published literature doesn't really arrive at a consensus view in terms of what sort of swab is best and what should be used to moisten it?

DR KOGIOS: It's certainly the case that there is not a lot of information out there. The literature does show that there's no such thing as the one best swab and wetting agent for every single scenario, there is a variation, and it is certainly the case that there is some conflict within the literature but that said, when we specifically went looking for this particular combination, the 70 per cent ethanol and the rayon swab, we found limited information, limited published peer review papers, but the ones that we did find were indicating that samples for substrates like blood are perhaps not ideal.

MR HUNTER: So is it the recommendation then that there be sort of validation study with respect to the way in which sampling for blood in particular is undertaken?

DR KOGIOS: Yes, some sort of consideration in-house at QPS. It may well be that that work has already been done. As we've said, we've had very limited line of sight into what's happening within QPS. It certainly could be the case that that has already been done, in which case this is asked and answered. If not, then we would recommend that it is done and, you know, a broader consideration with a look to the literature around other options.

MR HUNTER: Is it your view that any sort of validation study should be done by the police or is it the laboratory better placed to do that study?

MS BAKER: I'd like to see that as collaborative study because to my mind the first aspect of that is the combination of what the (indistinct) use and the (indistinct) would use, but also you need to be able to test the downstream impact of those combinations and that involves putting those samples through DNA testing.

MR HUNTER: All right. And on the issue of collaboration then, I'm particularly interested in what appears in paragraph 40 of the report. If we could have that, please.

It's on p20, thank you. Here there's reference to safeguards in cases of crimes like sexual assault and other complex cases including cold cases where maximizing evidential value may be more important than a fast turn-around time. In particular at paragraph (c), you suggest that if results are reported prior to preparation of a statement there ought to be a flag or caveat to indicate that the result is interim and subject to change. Now my query relates around the timing of that. As things presently stand a statement isn't prepared until very late in the piece, that is after a person has been charged and the brief's been put together. And my issue, I guess, is whether it's okay to wait that long before acting upon a result?

MS BAKER: I think the statement from the lab's perspective can come once that testing is completed. I think what we're suggesting is that there are quite a few pitfalls with that sample (indistinct words).

MR HUNTER: What about the situation where what's reported is a single source profile. Is there a need for caution when a single source profile's reported?

DR KOGIOS: Most of the issues that we see relate to number of contributors which is an issue that presents itself in the case of mixtures. So broadly speaking single sources are a different kettle of fish. Our thinking here was that a flag might be helpful for QPS if they were going to take some action in relation to a particular result, like go out and do an arrest. Obviously you don't have a court statement at that point in proceedings, but if there was some complexities apparent in the sample and QPS really needed to rely on that sample, then a flag might be a way of alerting the QPS member to the need to engage in through to the laboratory and the laboratory could pull that one out and do a deeper check on that one in a whole of case perspective before QPS then went and took some action in relation to that sample.

MR HUNTER: That's likely to occur in the case of a complicated mixture, yes?

DR KOGIOS: Yes, I think that's right.

MR HUNTER: What it was a two person mixture, would there be a need for the same sort of caution?

DR KOGIOS: Well I mean it's a two person mixture that a person or a scientist and the peer reviewer have deemed to be a two person mixture, but I think, you know, we've heard evidence before the Commission about the complexities that sit around DNA interpretation and another scientist might look at that same electropherogram and say, "I think there's evidence of a third person here". So it's difficult to be definitive. I can understand the need for or the desire to have a (indistinct words) single source is fine, two person is okay. I think it's probably - each one would turn on its merits.

MR HUNTER: Dealing with the collaborative approach that you recommend. I'm just wondering about the practicalities of that, how that would work in practice. Do you suggest that what should happen is that a collaboration between the scientist on the one hand and the investigators on the other should occur directly or should it be coordinated through, for example, a single point of contact like a DNA management section within the QPS?

DR KOGIOS: I think what we've tried to do is sort of call out the principles that we think or the safeguards that we think would be appropriate. It's hard for us to be specific and proscriptive about exactly how it would work in the State of Queensland because we're not intimately familiar with the way QPS operates, for example, so it's probably most hopeful for us to say these are the types of things that you can think about and then, you know, the very smart people at QPS and the very smart people at FSS could then take that and turn that into and actual operating model.

MR HUNTER: All right. Would I be correct in thinking that you would recommend that whatever happens in terms of collaboration, it needs to be documented?

DR KOGIOS: Yes. I think we would say that role clarity is really important here, both players need to understand who's responsible for what and then to have faith that the other party is doing those things.

MR HUNTER: And you understand it, I take it, that the sampling is done, particularly in the case of very serious offences, by scientific officers who have higher training in forensic science?

DR KOGIOS: Yes.

MR HUNTER: And they make informed decisions about what to sample?

DR KOGIOS: Yes.

MR HUNTER: And that they have, for the most part, actually been to the crime screen and have a pretty good understanding about what may or may not have happened?

MS BAKER: Yes.

DR KOGIOS: Yes.

MR HUNTER: So my question then is: in the end who should have the final say about what does or does not get done with a sample that's been submitted to the laboratory?

THE COMMISSIONER: You mean the degree to which it's tested?

MR HUNTER: Yes. Should that be up to the police, based obviously on advice?

DR KOGIOS: The final say? So police and FSS have got knowledge, both agencies and individuals in both agencies hold knowledge that is relevant to the question. The ultimate decision, one would imagine, would sit with QPS because it's QPS that's building a case and building a brief. I think case context is really important because, you know, there may not be so much benefit in working a particular sample to the nth degree when there could be other exhibits that could give other evidence, you know, perhaps a single source profile that could be equally of value to a particular case, so you really do need that broader case context in conjunction with the diagnostic information that the scientists has when looking at that particular sample. It's a decision that would need to be made with inputs from both practitioners.

MS BAKER: Can I add to that there is also many times when, for example, the DPP or equivalent would be involved and would make recommendations for additional testing, and so I don't think it's just down to two parties. Again, it's nuanced to each individual case to mention.

MR HUNTER: I suppose the particular context that I'm thinking of where this might arise most acutely is where there's a likelihood of exhausting a sample if a particular type of testing is done. In those circumstances do I take it that you would agree that the ultimate decision about what should happen should be up to the QPS?

MS BAKER: I would hope that that would be a reasoned discussion between the groups, not only in terms of getting to exhaustion but have we used the most appropriate testing either available to the in-house laboratory or to an outsourced laboratory. A lot more collaboration and discussion prior to that point.

MR HUNTER: I'm not suggesting that this would be some sort of reflex response from the QPS at all. I'm suggesting any decision would be in the context of this advice and collaborative discussion. But ultimately someone has to have responsibility for what is or is not done with a particular sample?

DR KOGIOS: Yes, and sometimes that does mean exhausting the sample and, you know, if you've brought to bear all of the relevant techniques, methodologies, and at the end of that the sample is exhausted, that's probably better in some case circumstances than hanging on in the hope that in five, ten years' time there'll be some new technique that could be applied. You've got to give it your best opportunity, you know, at the time. We heard many times that QPS owns the samples, we don't have any reason to doubt that, and if that is indeed the case, then ultimately, yes, it does make sense QPS would have knowledge of and ultimately responsibility for saying we understand that the sample will be exhausted if we go down this path, and we accept that.

MR HUNTER: Ms Baker, do you have anything to add to that?

MS BAKER: No, like I said it would be - it would come after a series of discussions around that, and if the best science approach means that that sample is exhausted, then I hope that's what would be chosen. If there's a consideration down the track of different types of testing that may be available, then a different outcome might be the case, but it's done in a very transparent way with a collaborative approach to what is best for this particular

sample.

MR HUNTER: Thank you.

THE COMMISSIONER: It's really a hypothetical question, isn't it, because you would passport in automatic every case there would be a consensus.

MR HUNTER: You would hope so.

THE COMMISSIONER: But if there isn't, a scientist says, for example, "Let's exhaust a sample and do this", and if police say "We don't want to do that", you wouldn't dream of the scientist going ahead and doing it. So it's not going to happen.

MR HUNTER: True. Those are the questions, that I have Commissioner.

THE COMMISSIONER: Thank you, Mr Hunter. Mr Rice.

MR RICE: I have a few questions, Commissioner.

THE COMMISSIONER: Yes.

<EXAMINATION BY MR RICE:

MR RICE: Dr Kogios and Ms Baker, I represent Queensland Health, I just have a few questions, and they concern operational model and governance. The first matter is one that you haven't been asked about and haven't commented on in your report, and it concerns the question of funding. You do make some brief reference in your report at paragraph 20, perhaps I could bring that up. Page 11 if you can, Mr Operator. See in paragraph 20 you've described the different sources of funding for the FSS Laboratory and made no comment at that part of your report or elsewhere about that funding. But you may be aware that Professor Lindsey Wilson-Wilde has made some comment to make about that funding, and I'll just inform you. She's ventured the view that that kind of funding model where at least a proportion of the money comes from the Queensland Police Service, is that to promote a client/provider relationship, which can focus attention on the provider solely on the services and processes required by police and not the wider considerations which you advocate for. She goes on to say that kind of a model can reduce independence of

decision-making in the laboratory. I wonder, firstly, if you agree with the description of those risks; and, if so, what mitigation measures would you suggest should be in place to guard against the risk of quality being subordinated, for example, the turn around time?

DR KOGIOS: I think Professor Wilson-Wilde raises a good point and certainly there is the potential for myopic on the one group that is providing funding to you. I think a way of dealing with that is cultivating a mind-set amongst your practitioners that, you know, we are not here to service a particular agency, we are here to service the broader criminal justice system regardless of where the funding comes from, and actually the practitioners themselves don't really need to concern themselves with where the funding comes from. That really is a matter of import for the managers, the executives of the laboratory. I think cultivating that mind-set of to whom are we providing services, yes, there's an investigative service that goes out the door more quickly to support police (indistinct words).

MR RICE: We just lost your sound.

DR KOGIOS: (Indistinct) and their investigations, and that is that I would caution against looking at turn-around times being (indistinct).

THE COMMISSIONER: Sorry, we just lost the first part of that answer.

DR KOGIOS: Okay. Can you hear me now?

MR RICE: Yes, we can.

DR KOGIOS: I'm not sure how much of it you got. There are risks, potential risks that arise as a result of a myopic focus on who is paying the bills. I think the way that you can mitigate against that is by cultivating a mind-set amongst your practitioners that they are there to provide a service to the criminal justice system. So, really, the funding, where the funding comes from, that's a matter for the executive and for the managers. Practitioners don't need to necessarily concern themselves with that at all, and they shouldn't. They should be focusing on the case work. So cultivating a mind-set of "to whom are providing a service", and it's helpful to think about it as being

police is one end user, and that would be for your rapid investigative style work, where police are relying on the lab to give them some quick information about a match. But then, of course, there's whole that other stakeholder, that whole other end user, being the courts, and that's where the role of the forensic scientist is to furnish the courts with the information that is relevant to the case. Forensic DNA scientists often talk about, you know, the numbers of people that get exculpated through the use of DNA evidence as much as the people, you know, where a case is built on the basis of DNA. So it's about cultivating that mind-set that we're not here to support the police, or here to support the prosecution, we're here to support the broader criminal justice system.

MR RICE: Presumably cultivating that mind set, like a lot to issues to do with values in an organisation, commences with leadership, followed with appropriate messaging?

DR KOGIOS: Yes.

MR RICE: Do you agree?

DR KOGIOS: Yes, agree.

MR RICE: One difficulty that springs to mind is that it's human nature really, in that there is a pervasive influence in all of our lives where we are regular purchasers of services, that a view exists that the customer is always right, and when we buy services we expect quality according to what we want, and that notion is so pervasive in our lives I wonder if it's placing too much trust in the mechanism that you suggest of simply cultivating a particular mind-set?

DR KOGIOS: Well, I think from my experience at FSS we saw a staffing cohort that is incredibly professional and incredibly interested in supporting the broader criminal justice system, so I certainly didn't see any evidence of my time with this staffing cohort that they were just trying to find a result with police. What they were actually interested in was mining as much possible information from their cases as possible, regardless of whether those results were inculpating or exculpating a particular person that police might be looking at. I mean I think there are other ways as well that you can deal with this issue, and one of those ways is through transparent

reporting, so providing your statement, but also then, you know, providing a full narrative that accompanies your statement that speaks to things like the limitations and the testing that you provide, it provides information on error rates. The more transparent and open you can be as a forensic science provider I would think the greater level of trust that all members and all users in the criminal justice sector can have in your laboratory and in your products and your services.

MR RICE: I notice at paragraph 22 of your report that you make mention that during the site visit you heard many references to police as a client. You don't accompany that with any comment. I wonder, what was the point of making reference to that?

DR KOGIOS: We were specifically asked about that, that was part of our instructions, you know, to look at that particular issue. And I think our view on that is that, you know, it is beneficial for forensic science providers to keep the end users of their products and services in mind because that's how you devise the best products and services that can add value to those end users. Now, police is, of course, only one of the various end users of the products and services that a forensic science provider provides. So, you know, from my perspective having a focus on police as a user of the product, that's not a bad thing. You need to also be giving consideration to the other end users of your products and your services.

MR RICE: Do I take it then that your observation in paragraph 22 that you did hear many references to police as the client wasn't intended to have some negative connotation?

DR KOGIOS: No.

MR RICE: Is there anything you want to add, Ms Baker?

MS BAKER: No, thank you.

MR RICE: Thank you. There's one other matter of accountability that you may be able to help with, and it concerns accountability for the performance of the role of managing scientist. The model that exists here and has done for many years is that the managing scientist reports to an administrator, being the Executive Director, who

history tells us has not been one qualified in forensic DNA analysis, and with due respect to all those people who have occupied the position of Executive Director, it emerges that oversight of the role of managing scientist is problematic because the Executive Director does not have a deep or really any real appreciation of the merits of scientific issues that may arise. I just wonder what's your experience, either in your own organisations or in those that you're aware of, as to how to exercise quality control over the performance of the role of managing scientist by someone who is not qualified to the same degree?

DR KOGIOS: So there's a variety of models out there, there's certainly no, you know, one right way of doing it.

MR RICE: We're interested, I think, to hear all of them?

THE COMMISSIONER: Sorry, Mr Rice?

MR RICE: We'd be interested to hear what they all are if you're able?

DR KOGIOS: I mean there's many forensic science providers across the world. Look, I guess what I would say to you is, it certainly wouldn't be the case that one would expect an Executive Director in an organisational structure like the one you have at QHFSS to be an expert in all areas within her portfolio. I mean such a person just does not exist. You do as an executive have to place reliance upon - I'm speaking in general terms here, you have to rely on the people who are reporting to you and their expertise. It does help, if you were overseeing a forensic science provider, it would be helpful to some practical forensic experience, and then also to be able to rely on those people beneath you. I think it is about cultivating a risk radar that is fit for purpose, that is appropriate to the environment, and broader ecosystem in which you are operating. Your question was specifically around quality, and I think, you know, in our report we have gone some way to try to set out you know what we think best could look like in terms of the quality space, but having those dedicated resources with the right, you know, the bandwidth to be able to be proactive as well as reactive, with the right authority, the right independence, the right sort of cut through, those things would be really, really helpful to any Executive Director.

MS BAKER: Yes, perhaps if I could answer that as well. I've had experience in working in models where we've had effectively scientists in those roles and also nonscientists who have come in externally. I will say that the nonscientist, and we're in that particular situation at the moment, has an incredible interest and depth of knowledge in our field and has put the time in to do that. So that's worked particularly well to be able to bring a whole lot of managerial and innovation skills, and that kind of fresh eye perspective to a laboratory, but also to be interested enough to really get to grips with a huge amount of detail across a range of different forensic groups. So it's not that one size fits all. Having sort of been in a team with both of those models, they've both got the ability to be incredibly effective if the people involved choose to afford themselves of that level of knowledge.

MR RICE: Those are the questions, Commissioner.

THE COMMISSIONER: Thank you Mr Rice. Mr Hickey.

MR HICKEY: No questions.

THE COMMISSIONER: Anybody else? Ms Hedge, anything else?

MS HEDGE: Just one short point.

<EXAMINATION BY MS HEDGE:

MS HEDGE: You can both see and hear me again?

DR KOGIOS: Yes.

MS BAKER: Yes.

MS HEDGE: You were asked a number of questions about the interaction between the lab and the forensic, the criminal justice community, I should say, and you were particularly asked by Mr Hunter about who would have decisions about exhaustion or about testing. Could I ask from your experience in other jurisdictions or from your knowledge of how other jurisdictions operate, what role defence lawyers might take in asking for testing to be done of samples? That seems to be a stakeholder who hasn't been mentioned yet, their interest in having samples tested or exhausted?

MS BAKER: I think it's a really important stakeholder. I'm not aware of the sort of defence culture within Queensland, as to whether there are forensic scientists who carry out those roles. But from a forensic science perspective, regardless of who is asking for the work to be done, we do look (indistinct) regardless. There are opportunities to do defence work, it is sometimes challenging if you've already done work for the Crown in a case, (indistinct) that could make it difficult but there's got to be that balance of doing the amount of testing you can to get the best science result, and do you always leave something behind in case the defence would like to do testing of the sample themselves? I would hope that would be a discussion that's had on the way through, because to just have sample remaining in every single case for every single sample, on the off-chance it may be required to me doesn't seem incredibly effective, but I think to have access to those samples and to accredited providers of forensic service from a defence perspective is an absolute must.

DR KOGIOS: And I would just add to that, I mean you wouldn't want to be exhausting samples on a regular basis. This would not ideally be happening on a regular basis. It as a matter of principle would be good to have something remaining where possible. But there are some instances where that is the key sample in the case and there just is no option but to exhaust that sample. There are other means then that would be open to defence. They could certainly come in, have a look at the laboratory, have a look the at case file, you know, observe the scientists, observe their practice. So not as good as having a sample themselves that they could then go off and test, but it wouldn't necessarily mean that's it, there's no opportunity for any kind of scrutiny.

MS HEDGE: All right. Is it the case that having the opportunity for other stakeholders, such as defence lawyers, but also potentially courts, and the DPP I think were already mentioned, as well as police, to be involved in testing is necessary for the independence of the laboratory?

DR KOGIOS: I think defence would be coming into play on a case-by-case basis. If there was a particular case that was contentious that was going through the court, then

defence absolutely would have an interested in that, and ideally if there was some sample that was left for them to test that would be a good thing. But in terms of the day-to-day operation of the lab, was that your question?

MS HEDGE: I didn't confine it in either way, but I understand your answer.

DR KOGIOS: Okay.

MS HEDGE: You see the defence influence or impact, or involvement, I should say, to be the court end as opposed to at the early stages?

DR KOGIOS: On a case-by-case basis, yes. But I mean ideally, yes. We are calling for broad engagement right across the criminal justice sector. In our report we talk about some learned bodies that exist that bring defence practitioners together with prosecution, with judges, with forensic scientists. Honestly, the more we can get those sorts of people together in rooms to discuss ideas, improvements, the better from our perspective. Forensic science can't operate in a silo, and the products and services, we're there to support the broader criminal justice system, and we need to be engaged with all voices across that sector, ideally.

MS HEDGE: If there exists currently no mechanism for defence to request testing of a sample, then your view is that some work should be done to establish a mechanism and establish the parameters of that and the appropriateness of it?

DR KOGIOS: Yes.

MS BAKER: (Indistinct words) alternative proposition towards the scientist and (indistinct words) to investigate an option or evaluate it, and sometimes it's, in a forensic perspective you're left not knowing what an alternative is for the findings that you've got. So you've only had sort of one scenario put to you. So it's actually very helpful when you have an alternate scenario put to you because you can target the type of testing that you do to evaluate the likelihood of each (indistinct).

MS HEDGE: Might that be something that the forensic science advisory board that you described, or you

recommend, might have some part to play in bringing together the stakeholders necessary to do that work and come to some mechanism?

DR KOGIOS: Yes.

MS BAKER: I agree with Dr Kogios, the more voices at that table who can have input and authority and impact over criminal justice system the better.

MS HEDGE: And that may not be confined to defence but to other stakeholders depending on what comes out of that consultation?

DR KOGIOS: Yes.

MS BAKER: Yes.

MS HEDGE: Those are my only questions. I didn't tender the email that Ms Baker sent about the QPS issue. Could I tender document EXP.0007.0002.0001_R which is an email from Heidi Baker to Susan Hedge dated 1 November 2022.

EXHIBIT #216 DOCUMENT EXP.0007.0002.0001_R WHICH IS AN EMAIL FROM HEIDI BAKER TO SUSAN HEDGE DATED 1 NOVEMBER 2022

MS HEDGE: That's all for the evidence of Dr Kogios and Ms Baker.

THE COMMISSIONER: Thank you both for your comprehensive and detailed report, and thank you for your time and for the trouble you've taken. You've been of enormous assistance to all of us here.

DR KOGIOS: Thank you.

THE COMMISSIONER: You're free to switch off any time you like.

<THE WITNESS WITHDREW

THE COMMISSIONER: Thanks. Yes, Mr Hodge.

MR HODGE: Commissioner, that brings module 5 to a close and that's the conclusion then of these first five rounds

of hearings. The only hearings that will remain at this point, we'll have a further short hearing, my present expectation is some time in November, probably the end of November, in relation to the DNA testing for the Shandee Blackburn murder investigation, but otherwise that will be the end of the oral hearings. I've consulted with the counsel for all of the parties that you've given leave to appear, none of them seek to have oral submissions to you, Commissioner, and as you know we have consulted as well and I understand from your perspective you are content for this to proceed by written submissions.

THE COMMISSIONER: Provisionally, in the sense that I expect that that's how it will be. If something arises in the written submissions that we receive that I think I should hear from counsel, then we'll arrange to do it in a way that's most convenient to everybody.

MR HODGE: Thank you, Commissioner. Then otherwise the Commission will write to the parties, and I've had some discussions with counsel already about what the time frames will be for those submissions. It won't surprise you to hear the time frames will be quite short but not unreasonable, and there'll be page limits that we'll also discuss with counsel.

THE COMMISSIONER: Thank you all for that.

MR HODGE: Otherwise that concludes the hearings for now, Commissioner.

THE COMMISSIONER: Thank you. Thank you to all counsel and solicitors for your assistance in how you've conducted your clients' cases. You've been most helpful to me. All right, we'll adjourn then.

AT 1.26 PM THE COMMISSION ADJOURNED