Uwe Klima *v* Singapore Medical Council
[2015] SGHC 97

Case Number	: Originating Summons No 113 of 2014
Decision Date	: 13 April 2015
Tribunal/Court	: High Court
Coram	: Sundaresh Menon CJ; Chao Hick Tin JA; Andrew Phang Boon Leong JA
Counsel Name(s)	: N Sreenivasan SC and Lim Min (Straits Law Practice LLC) for the applicant; Josephine Choo, Emily Su and Wong Shu Yu (WongPartnership LLP) for the respondent.
Parties	: Uwe Klima — Singapore Medical Council

Professions – Medical profession and practice – Professional conduct

13 April 2015 Judgment reserved.

Andrew Phang Boon Leong JA (delivering the judgment of the court):

Introduction

1 This is an appeal by Associate Professor Uwe Klima ("the Appellant") against the decision of a Disciplinary Committee ("the DC") constituted by the Singapore Medical Council ("the Respondent"). The DC convicted the Appellant of professional misconduct under s 45(1)(*d*) of the Medical Registration Act (Cap 174, 2004 Rev Ed) ("the MRA") in respect of two charges brought by the Respondent. The allegation of misconduct contained in the first charge was that he had administered cardioplegia ("CPG") solution to the patient ("the Patient") without first diluting the CPG solution. The second charge was that he had failed to personally supervise an emergency operation performed on the Patient by another surgeon who was a conditionally registered medical practitioner (hereinafter referred to as a "conditional practitioner").

Facts

2 The Appellant is a foreign medical degree holder who graduated from the Medical School of University of Vienna, Austria in 1988. He practiced General, Thoracic and Cardiovascular surgery at several medical institutions across Europe and the United States of America before joining the National University Hospital ("NUH") on 6 April 2006 as a cardiothoracic surgeon. As mandated under s 21 of the MRA, his foreign medical accreditation and training only allowed him to practise in NUH as a conditional practitioner. Amongst other requirements, conditional practitioners can only work under the supervision of a supervisor approved by the Respondent. On 10 May 2006, Professor Lee Chuen Neng ("Prof Lee") became one of the six supervisors assigned to the Appellant.

3 The proceedings before the DC concerned two separate but related surgical operations performed on the Patient on 19 December 2007. The first operation was pre-arranged but the second operation arose out of an emergency. The Patient was a two-year-old infant with a medical history of aneurysmatic right coronary artery with multiple fistulae at birth. In simpler terms, the right coronary artery of the Patient's heart was diseased, resulting in an unequal distribution of blood which flowed into the right ventricle. On or about 15 October 2007, a panel discussion convened between paediatric cardiologists and cardiac surgeons identified the Patient's condition as requiring surgical

intervention. The operation was scheduled to take place on 19 December 2007. In the period leading up to the operation, Prof Lee requested that the Appellant take over as the principal doctor and surgeon in charge of the Patient to accommodate Prof Lee's schedule. This arrangement was entered into with the consent of the Patient's parents.

The first operation

4 The Appellant performed the first operation on 19 December 2007. He was assisted by two assistant surgeons. One of them was a cardiothoracic surgeon named Associate Professor Kofidis Theodoros ("Dr Kofidis"). The surgical team also consisted of an anaesthetist, Dr Sim Chin Keng ("Dr Sim"), a scrub nurse, Yiew Chin Thai, as well as two perfusionists. Tan Cheng Lee was the main perfusionist and Lim Kim was the assistant perfusionist.

5 The surgeons, anaesthetist and the scrub nurse were stationed at the operating table. Beside the operating table sat a heart-lung machine where the perfusionists were stationed. Their job was to set up and manage the heart-lung machine as well as prepare medication – including CPG – for the surgeon to administer to the patient. They were also in charge of monitoring the various parameters reflected on the heart-lung machine. Amongst other responsibilities, the scrub nurse served as a liaison between the surgeon and the perfusionists and would hand over medication prepared by the perfusionists to the surgeons.

6 At the commencement of the operation, the Patient was put on a heart-lung machine cardiopulmonary bypass and his heart was induced into a state of arrest in order for the heart to be safely operated upon – a process which involved the administration of CPG solution. CPG is procured and stored in concentrated form, referred to by some witnesses as "neat CPG". However, when it comes to its administration, it is undisputed that cardiothoracic surgeons and perfusionists alike have been trained to *never* administer *neat* CPG (*ie*, CPG in an undiluted state). Undiluted CPG is potentially fatal due to the high levels of potassium found within the medication itself.

7 We pause to observe that there are, in general, two ways to dilute CPG. The first method is to dilute CPG with the patient's blood. This variant of diluted CPG is commonly referred to as "blood CPG". The second method is to dilute CPG with another chemical known as Hartman's solution or Ringer's solution (hereinafter referred to as "Hartman's solution"). This variant of diluted CPG is commonly referred to as "crystalloid CPG". It is undisputed that the dilution of CPG is almost always performed by perfusionists.

8 Returning to the present operation, about 23 minutes after the Patient was put on cardiopulmonary bypass, on the Appellant's instructions, the perfusionists administered CPG in its concentrated form into the heart-lung machine. Dilution occurred when the CPG solution mixed with the Patient's blood as it made its way through the machine before entering the Patient's aortic root in the form of blood CPG. The use of the heart-lung machine to administer blood CPG is known to the witnesses as the "Calafiore method" or the "syringe-pump method".

9 The Appellant chose to employ a semi-closed system for the operation. This was because he did not expect the operation to take more than 15 to 20 minutes and the system was "easy to control". The limitation of a semi-closed system was that the perfusionists were unable to draw sterile blood from the Patient to dilute the CPG solution. It is, however, disputed whether the Appellant himself was able to draw sterile blood from the operating table – a point to which we shall return later in this judgment.

10 The operation turned out to be longer than expected. About 30 minutes into the operation, the

heart had to be "re-cardiopleged". The left coronary artery was re-cardiopleged by running the blood CPG *via* the heart-lung machine through the aortic root. As the proximal right coronary artery anastomosis had not been completed, blood CPG administered to the left coronary artery could not reach the right side of the heart. Unlike a multi-tail system which utilises a "Y-connection", the semi-closed system uses only one single line to release CPG into the left coronary artery, leaving no free end for the Appellant to perfuse the other side of the heart. As a result, he decided to *manually* administer CPG to the right side of the heart.

11 The Appellant asked the perfusionists for "cardioplegia solution" (or according to some witnesses "cardioplegia"). According to the perfusionists, it was unusual for a surgeon to request for CPG solution using such terms. Unsure of how the CPG was to be administered, Lim Kim opened an ampoule of CPG and passed it to the scrub nurse (in its original concentrated (*ie*, *neat*) form). She claimed to have mentioned twice that it was "neat" and the scrub nurse testified that she had echoed the same when Lim Kim passed the ampoule to her. However, the scrub nurse admitted that the Appellant was engrossed in suturing when that remark was made and so she could not be sure whether he had heard her. The scrub nurse then drew the contents of the ampoule into a syringe and passed it to the Appellant.

12 According to the Appellant, he was expecting the perfusionists to prepare *crystalloid* CPG (as opposed to *blood* CPG) in the manner set out in the NUH Protocols & Guidelines for Perfusion Practice. He was given a clear solution in a syringe. Thinking that it was crystalloid CPG (as it takes the form of *a clear solution*), he administered the solution directly into the right coronary vein bypass to protect the right side of the Patient's heart. According to the Appellant, he confirmed with the scrub nurse and the perfusionists thrice that the syringe contained "cardioplegia solution" before administering it to the Patient. It turned out that the syringe actually contained *neat* CPG. At this juncture, it is important – for reasons that will be apparent below – to note that, like crystalloid CPG (which the Appellant had thought he was administering), *neat* CPG *also* takes the form of *a clear solution*.

13 At the end of the operation, a routine check of the Patient's blood showed a high concentration of potassium at 10.01 mmol/L, when the usual reading would be 3.5 to 4.5 mmol/L. The Patient was started on haemofiltration to bring down the level of potassium in his body and was then sent to the Paediatric Intensive Care Unit ("PICU") ward. However, his condition continued to deteriorate. The administration of neat CPG formed the subject of the first charge preferred against the Appellant.

The second operation

14 When the Patient was in the PICU ward, a Paediatric Intensivist named Dr Graeme MacLaren ("Dr MacLaren") found him to be in an extremely unstable condition. A meeting was convened between Dr MacLaren, the Appellant, and two other doctors, and a decision was made to perform a second operation on the Patient to save his life. They decided to deploy an Extracorporeal Membrane Oxygenation Device ("ECMO") in order to support the Patient's cardiac and respiratory functions. It is not disputed that deploying an ECMO was a lifesaving procedure for the Patient.

15 The second operation was to be conducted by the Appellant on the evening of the same day. However, he did not carry out the intended operation. Due to a migraine attack which he had allegedly suffered shortly before the commencement of the operation, he requested Dr Kofidis, who had assisted him in the first operation, to conduct the operation on his behalf. Even though the notice given (approximately 30 minutes) was short and Dr Kofidis had little time to be briefed or be prepared, he nevertheless acceded to the Appellant's request. The operation was performed from 6.20pm to 8.45pm in the absence of the Appellant, during which time Dr Kofidis had to make several calls to Dr MacLaren and the Appellant to seek their advice on the conduct of the operation.

16 Dr Kofidis was also a conditional practitioner whose supervisor was Dr Christie Tan ("Dr Tan"). In delegating the role of the principal surgeon to Dr Kofidis, the Appellant did not seek the approval of his supervisor, Prof Lee. Neither was the Appellant present in the operating theatre during the operation; instead, he went back to his office to rest. The Appellant's failure to personally supervise Dr Kofidis formed the subject of the second charge.

Post-operation

17 The second operation saved the Patient's life, but serious long-term medical complications crippled his ability to lead a normal life. He had to attend a special school and depends on external care to carry on with his daily activities. The Patient's dire condition deeply aggrieved his father, prompting him to file a complaint with the Respondent on 4 March 2008. It was in this regard that the Respondent preferred the two charges against the Appellant.

18 Both charges are heavily contested by the Appellant. To appreciate some of the arguments levelled by the Appellant, it is useful to set out the salient portions of both charges. The first charge reads as follows:

> That you PROFESSOR KLIMA UWE are charged that on 19 December 2007, you, being the principal surgeon, were in ***wilful neglect*** of your duties to your patient, one Tan Zhi Heng ("the Patient"), in that during an operation on the Patient for ligation of right coronary artery ("RCA") fistula to right ventricle ("RV"), you administered neat cardioplegia solution directly to the Patient's RCA bypass.
>
> …
>
> and that in relation to the facts alleged, you have been guilty of professional misconduct under section 45(1)(d) of the [MRA].
>
> [emphasis added in bold italics]

19 The second charge reads as follows:

> That you PROFESSOR KLIMA UWE are charged that on 19 December 2007, you, being the principal surgeon, were in ***wilful neglect*** of your duties to your patient, one Tan Zhi Heng ("the Patient"), in that you instructed and allowed the First Surgical Assistant, namely, [Dr Kofidis], a medical practitioner under conditional registration, to perform an operation to insert an [ECMO] in the Patient, ***in your absence and without your personal supervision*** .
>
> Particulars
>
> …
>
> (e) The surgical team decided to carry out an operation to insert an ECMO in the Patient.
>
> (f) The ECMO operation was carried out by [Dr Kofidis] at about 6.20 p.m. ***You were not present throughout the entire ECMO operation*** .
>
> (g) At all material times, you were aware that [Dr Kofidis], being a medical practitioner under conditional registration, was only allowed to practise under certain conditions stipulated by the

[Respondent].

(h) The [Respondent's] letter dated 17 November 2006 stated that the Respondent had approved [Dr Kofidis's] application for the grant of conditional medical registration for the period of his employment contract with National University Hospital (NUH), subject to, *inter alia*, ***the condition that he works under direct supervision*** .

(i) Paragraph 4.1.1.4 of the Singapore Medical Council Ethical Code and Ethical Guidelines states:-

> ***"4.1.1.4 Delegation of duties***
>
> A doctor may delegate care to another doctor, nurse, medical student or other health care worker to provide treatment or care of his behalf, but this person must be ***competent*** to carry out the care or procedure required. A doctor retains responsibility for the overall management of the patient when he delegates care. If the person delegated to is not duly registered as a practitioner, this must be in the context of a legitimate training programme and the doctor must exercise effective supervision over this person."

and that in relation to the facts alleged, you have been guilty of professional misconduct under section 45(1)(d) of the [MRA].

[emphasis added in bold italics]

Findings of the DC

20 The DC convicted the Appellant of both charges after a 16-day trial spanning a few tranches during the period between 6 February 2012 and 29 October 2013. The written grounds ("the GD") were delivered on 14 January 2014.

Admissibility of findings made by a Committee of Inquiry set up by NUH

21 First, there was an evidentiary issue of whether certain findings made by a Committee of Inquiry ("COI") set up by NUH to investigate the two incidents that formed the subject of the two charges were admissible for the purpose of the proceedings before the DC. The COI opined that the Appellant had not been negligent and instead pointed to a breakdown in communications as the real cause of the incidents. Not surprisingly, the Appellant wanted to adduce the documents pertaining to these findings as evidence in the proceedings before the DC to assist in proving that he had not been negligent. The DC held that the documents pertaining to the COI's findings were inadmissible under certain provisions in the Private Hospitals and Medical Clinics Act (Cap 248, 1999 Rev Ed) ("PHMCA"). It also held that, in any event, the opinion rendered by NUH's COI was not useful as "it is unclear as to the nature of the evidence … or the issues that were presented or canvassed in those proceedings" (see the GD at [41]).

First charge

22 The DC found that the Appellant had asked for "cardioplegia solution", after evaluating the evidence of the main perfusionist, Tan Cheng Lee, the scrub nurse and the assistant perfusionist, Lim Kim, all of whom stated that they had heard the Appellant asking for "cardioplegia" or "cardioplegia solution". It appears that the Appellant had argued before the DC that cardioplegia solution was synonymous with "crystalloid cardioplegia". This argument was rejected by the DC as none of the

documents relied upon by the Appellant defined the term as such. The Appellant's argument that the word "solution" meant that the CPG was "diluted" was also rejected. In so far as the DC was concerned, the word "solution" meant no more than a fluid that is a homogenous mixture of various substances and did not necessarily correlate with the concentration of the solution as such. It found support for its interpretation in the manufacturer's insert of the CPG concentrate which described neat CPG as a "solution".

23 The above finding led the DC to conclude that, even if the Appellant had asked for "cardioplegia solution", his instruction was ambiguous and unclear, it being capable of at least three possible interpretations, *viz*: (a) blood CPG, (b) crystalloid CPG, or (c) neat CPG. Of the three interpretations, the perfusionist adopted option (c) and proceeded to prepare neat CPG, which was in turn administered to the Patient by the Appellant. The DC found that the Appellant had not applied his mind to these various possibilities and had, instead, assumed that he would be handed crystalloid CPG. The Appellant's assumption that the CPG in the syringe was diluted was unwarranted in the light of several clear warning signs that should have alerted him to the possibility that it was, in fact, undiluted:

(a) First, preparation of crystalloid CPG involves the dilution of CPG with Hartman's solution and cooling the solution to a low temperature of 4ºC. The process of cooling the solution would have involved the use of an ice bucket or a cooler. The absence of such apparatus in the operating theatre should have alerted the Appellant that the solution was not crystalloid CPG, as would the significant disparity between the temperature of the syringe and the operating theatre, which should have been apparent to his touch.

(b) Secondly, preparing crystalloid CPG would have taken the perfusionist at least 20 minutes. The fact that the Appellant was given the syringe soon after his request was another sign pointing to the absence of a dilution process.

(c) Thirdly, using two methods of delivering CPG in a single operation (blood CPG, followed by crystalloid CPG) was unusual (see the GD at [19]). The norm was to use only one type of diluted CPG in an operation. It was even more unusual for the Appellant to deviate from the usual method of delivering CPG *via* the heart-lung machine in NUH, *ie*, the Calafiore or syringe-pump method (see the GD at [27] and [28], as well as above at [8]). These two deviations from the norm triggered a corresponding increase in the obligation on the Appellant to check the contents of the syringe as he could no longer rely on what was routinely done (see the GD at [29]).

24 For completeness, the DC also considered the possibility that when the scrub nurse passed the syringe of CPG to the Appellant, she had sounded the caution that the syringe contained "neat cardioplegia" (see the GD at [32]). According to the DC, even if she had not sounded this caution, the circumstances were glaring enough for the Appellant to check whether the CPG had been diluted.

25 Given the potentially fatal consequences of administering neat CPG (*ie*, undiluted CPG), the DC held that the Appellant ought to have checked what type of CPG was in the syringe which had been handed to him by the scrub nurse, but he had failed to do so. It would have taken no more than a short question: "Is this crystalloid cardioplegia?" or "Is this diluted?" to discharge his duty, but the Appellant did not ask any questions at all. The gravity of this failure, according to the DC, was one that exceeded the threshold of mere negligence and established the charge that the Appellant was in "wilful neglect" of his duty to the Patient. In so far as the law was concerned, it accepted the Respondent's submission that wilful neglect "implied conduct, in which if there is not conscious wrongdoing, there is a very marked departure from standards by which responsible and competent people … habitually governed themselves" (citing the Supreme Court of Canada decision of *McCulloch*

v Murray [1942] SCR 141 at 145, which was referred to by the English Court of Appeal in *Great Scottish & Western Railway Company Ltd v British Railways Board* (5 April 1993) (Unreported, transcript available on LexisNexis)). It found that the litmus test for a finding of "professional misconduct" in *Low Cze Hong v Singapore Medical Council* [2008] 3 SLR(R) 612 ("*Low Cze Hong*") had been satisfied on the facts of the present case.

Second charge

26 The second charge concerned the Appellant's delegation of the second operation to Dr Kofidis. The DC stated at the outset that it was "in no position to doubt or accept the [Appellant's] migraine attack" (see the GD at [45]). Therefore, it was of the view that the gist of the second charge was not the Appellant's absence but, rather, his *act of delegation*.

27 The DC found that Dr Kofidis was not "competent" in so far as the second operation was concerned. Two reasons were given for the lack of competence. The first was the Appellant's lack of authority to delegate his responsibility. When the Appellant deemed himself unable to carry on with the second operation, he ought, in the DC's view, to have sought the authorisation of his supervisor, Prof Lee, before delegating the task to Dr Kofidis. All that was needed was a phone call to Prof Lee but such a call was not made. The Appellant could have also called Dr Kofidis's supervisor, Dr Tan, but he had failed to do so. As a conditional practitioner, the Appellant had no authority to delegate the role of a principal surgeon to Dr Kofidis, who was also a conditional practitioner. The failure to obtain authorisation from his superiors undermined the system of conditional registration in the MRA, the purpose of which was to ensure an appropriate system of supervision of overseas trained medical practitioners practising in Singapore's medical institutions. Part of this supervision process meant that only supervisors are entitled to assign work to conditional practitioners as and when it was deemed to be within their abilities.

28 The finding in the preceding paragraph, according to the DC, was sufficient to hold the Appellant guilty of the second charge. It nevertheless went on to discuss the second reason for finding Dr Kofidis's "incompetence" in relation to the second operation; this related to Dr Kofidis's inability to conduct the operation. It came to the view that the documents adduced concerning his experience and training in deploying the ECMO did not bear out his competence in this field. In addition, the way the operation was conducted was indicative of Dr Kofidis's lack of competence in this particular regard:

(a) First, he had to call Dr MacLaren and the Appellant for advice during the operation itself.

(b) Secondly, the operation took more than two hours.

(c) Thirdly, there was a failed attempt to insert the cannula for the ECMO device into the femoral artery.

However, as Dr Kofidis did not testify as a witness, the DC *caveated* that its view was given without the benefit of Dr Kofidis's evidence as to how he had conducted the second operation (see the GD at [57]). As a consequence of this particular caveat, we do not think that this particular finding ought to feature in our analysis of the second charge. We are also of the view that, without having given Dr Kofidis an opportunity to respond to these allegations, it is unsafe to make any finding as to whether Dr Kofidis had the requisite expertise to carry out the second operation.

29 Apart from the above findings, the DC mentioned by way of parenthesis that the Appellant was not present in the operating theatre during the second operation, but was in any event not

competent or authorised to "supervise" Dr Kofidis to begin with (see the GD at [54]). We will address the significance of this observation in the course of our analysis at [81] below.

Sentencing and costs

30 Having found the Appellant guilty of both charges, the following sentences were meted out by the DC:

(a) In respect of the first charge, that the Appellant's registration in the Register of Medical Practitioners be suspended for six months and that the Appellant be fined the sum of $7,000.

(b) In respect of the second charge, that the Appellant's registration in the Register of Medical Practitioners be suspended for three months and that the Appellant be fined the sum of $3,000.

(c) Both periods of suspensions (referred to above at (a) and (b)) were to run consecutively.

(d) That the Appellant be censured and that he provides a written undertaking to the Respondent that he will not engage in the conduct complained of, or any similar conduct.

31 In meting out the above sentences, the DC took into consideration: (a) the serious consequence of the Appellant's conduct which impacted the Patient's safety; (b) the undermining of the regime of supervision behind the conditional registration of medical practitioners; and (c) the decision of this court in *Gan Keng Seng Eric v Singapore Medical Council* [2011] 1 SLR 745 where the surgeon was suspended for six months for wilful default of his duties and gross mismanagement of his patient.

32 The DC also ordered the Appellant to bear the costs of the inquiry, including the costs of the Respondent's solicitor and the legal assessor.

The issues

33 Two broad issues arise from the parties' submissions in relation to the present appeal:

(a) Whether the Appellant's conviction of the first charge should be set aside ("Issue 1").

(b) Whether the Appellant's conviction of the second charge should be set aside ("Issue 2").

If, of course, the Appellant was found guilty of either or both of the aforementioned charges, the further issue of sentence ("Issue 3") would need to be considered.

The parties' arguments

Issue 1

34 Counsel for the Appellant, Mr N Sreenivasan SC ("Mr Sreenivasan"), made a number of arguments on behalf of his client. In essence, they may be divided into two categories. The first related to the alleged substantive defects in the first charge itself, whilst the second centred on the basic (and fundamental) submission that, as it was clear that the Appellant wanted to inject crystalloid CPG *instead of* blood CPG *directly* into the Patient's heart, he was *entitled to assume* that the syringe handed to him by the scrub nurse (and which originated from the perfusionists) *must* have contained *crystalloid* CPG (and *not neat* CPG, which was in fact the case). This *must* have been so,

Mr Sreenivasan argued, because *everyone* knew (or ought to have known) that *neat* (*ie, undiluted*) CPG *cannot* be administered *directly* into a patient's heart as it might lead to complications, such as in fact occurred in the present case. Put simply, *because only crystalloid CPG (which was diluted)* could be administered *directly* into the Patient's heart, *that* was *the only possible type of CPG which could have been handed to the Appellant and he was therefore entitled to assume that that was in fact the case when he was handed the syringe containing the CPG*.

35 Returning to the *first* category of arguments relied upon by Mr Sreenivasan, these stemmed from the decision of this court in *Low Cze Hong*, where it was stated (at [37]) that professional misconduct can be made out "in at least two situations": first, where there is an intentional, deliberate departure from standards observed or approved by members of the profession of good repute and competency; and, secondly, where there has been such serious negligence that it objectively portrays an abuse of the privileges which accompany registration as a medical practitioner.

36 The basic thrust of Mr Sreenivasan's submission was as follows: in so far as the first charge contained a reference to alleged "wilful neglect" on the part of the Appellant, it was based on the *first* limb in *Low Cze Hong*. However, it was clear that the evidence led related, at best, to the *second* limb in the aforementioned case. Hence, in the circumstances, Mr Sreenivasan argued that the Appellant could not be convicted under the first charge as the evidence led was insufficient to establish a conviction beyond a reasonable doubt. Let us turn now to the Respondent's arguments.

37 Counsel for the Respondent, Ms Josephine Choo ("Ms Choo"), however, argued that in so far as Mr Sreenivasan's *first* category of arguments was concerned (as briefly set out in the preceding paragraph), whilst the phrase "wilful neglect" was used in the first charge, the Respondent had made it abundantly clear on the very first day of the trial before the DC that the charge was not based on the first limb in *Low Cze Hong* but, rather, on the *second* limb. Put simply, the use of the word "wilful" in the first charge was *not* intended to connote an intentional, deliberate departure from standards observed or approved by members of the profession of good repute and competency but, instead, referred to conduct on the part of the Appellant which, whilst unintentional, nevertheless constituted serious negligence that objectively portrayed an abuse of the privileges which accompany registration as a medical practitioner pursuant to the *second* limb in *Low Cze Hong*. Put simply, the word "wilful" referred only (in a literal sense) to the physical actions on the part of the Appellant and *not* to his state of mind which accompanied those actions. In any event, the clarification on the first day of the trial meant that the Appellant was clearly aware of the case against him in so far as the first charge was concerned and he had suffered no prejudice in any way.

38 In so far as the *second* category of arguments was concerned, Ms Choo argued that, whilst it was true that CPG was being administered by the Appellant directly into the Patient's heart and therefore had to constitute ***diluted*** CPG, it was *not clear* that *only crystalloid CPG (which was diluted with Hartman's solution instead of blood (the latter would have constituted blood CPG)) could have been so administered.* Ms Choo argued that there was an ***alternative*** method of administering *diluted* CPG to the Patient in the circumstances: *the Appellant could also have diluted neat CPG by mixing that neat CPG with blood at the operating table itself (in order to produce **blood** CPG instead (which, it will be recalled, is an alternative form of diluted CPG (the other form of diluted CPG being crystalloid CPG)))*. That being the case, Ms Choo further argued that *the Appellant ought to have clarified whether or not he was being handed crystalloid CPG or neat CPG since it was unclear to the perfusionsists which method he was going to utilise*. Indeed, as we have already noted (see above at [12]), ***both*** *crystalloid as well as neat* CPG take the form of *a clear solution*, and therefore the Appellant could not assume that just because the solution in the syringe was clear, it had to be crystalloid CPG. Ms Choo further argued that the perfusionists' confusion as to which of the two

methods the Appellant was going to utilise was compounded by the following circumstances:

(a) The Appellant did not conduct a pre-operation briefing;

(b) The Appellant's instruction to prepare "cardioplegia solution" was too vague;

(c) Whilst there was no prohibition against using crystalloid CPG, in NUH itself, crystalloid CPG would only be utilised in exceptional circumstances, such as for patients with cold blood agglutinin factor; and

(d) Even the Appellant's expert, Dr Joseph Sheares ("Dr Sheares"), agreed that it was unusual for the Appellant to use two different types of CPG solution, *viz*, blood CPG followed by crystalloid CPG, in a single operation.

39 Let us now turn to the parties' arguments with respect to Issue 2.

Issue 2

40 In so far as Issue 2 was concerned, Mr Sreenivasan argued that there were no evidence or details setting out precisely whether or not the Appellant had a duty to supervise Dr Kofidis in the first place, as well as what exactly the *standard* of supervision was (assuming that there was a duty to supervise).

41 Mr Sreenivasan also argued that Dr Kofidis had performed similar operations on a day-to-day basis as well as whenever he was on call. Indeed, the precise operation which Dr Kofidis performed on the Patient entailed the deployment of an ECMO in the Patient. The ECMO was also inserted by Dr Kofidis in the Patient in a situation involving an *emergency*.

42 In response, Ms Choo argued that the Appellant ought to have called Dr Kofidis's supervisor but had, instead, delegated the performance of the second operation to Dr Kofidis without doing so. Further, having delegated the performance of the operation to Dr Kofidis, the Appellant was *not present* during the operation itself.

Issue 3

43 In so far as the sentence meted out by the DC against the Appellant was concerned, the Appellant argued that it was manifestly excessive as no dishonesty or moral turpitude was present. It was also argued that a substantial portion of the proceedings before the DC was irrelevant to the subject matter of the two charges preferred against the Appellant and thus unnecessarily lengthened the hearing before the DC, incurring legal costs for both parties and for the legal assessor which the DC then ordered the Appellant to bear. In the circumstances, the Appellant argued that the Respondent should not, if successful, be given full costs and that costs should be fixed instead.

44 The Respondent, on the other hand, argued that the sentence meted out by the DC was within the range of sentencing precedents as well as commensurate with the seriousness of the misconduct. The Respondent also argued that it was the Appellant who had unreasonably protracted the proceedings by failing to comply with the DC's directions and had made it difficult for simple logistical issues such as hearing dates to be confirmed. The Respondent also disagreed with the Appellant's argument that a substantial portion of the proceedings was irrelevant to the subject matter of the two charges preferred against the Appellant.

Our decision

Issue 1

45 Let us turn to Mr Sreenivasan's *first* category of arguments, centring on the nature of the first charge itself.

46 We acknowledge that in proceedings such as these (where the Appellant's livelihood and reputation are at stake), the various ingredients of the charge concerned ought to be clearly stated. However, we are also of the view that the court should not descend into (needless) semantical debate. The same word can have different meanings, depending on the context in which it is used. And this is precisely the point which Ms Choo was making (see above at [37]). Indeed, it is clear from what transpired on the first day of the trial before the DC that the Appellant and his counsel knew what the gravamen of the first charge was and, in particular, that the Respondent was proceeding under the *second* limb in *Low Cze Hong* and *not* the first. It might have been preferable if the word "wilful" had been omitted from the first charge. However, it should be equally noted that the reference was to "wilful *neglect*" and the Respondent had clarified that this was a reference to the *second* limb in *Low Cze Hong*, which, it will be recalled, related to a situation where there has been such serious *negligence* that it objectively portrays an abuse of the privileges which accompany registration as a medical practitioner. Put simply, *it was effectively a question of which word in the phrase "wilful neglect" utilised in the first charge ought to govern.* Looked at in this light, the Respondent clarified which word (and, hence, limb in *Low Cze Hong*) governed right at the outset of the trial. *More importantly, the Appellant knew precisely what the case was against him in so far as the first charge was concerned.* It could not therefore be said that the Appellant had suffered any prejudice. We therefore *reject* this (first) category of arguments proffered by Mr Sreenivasan on behalf of the Appellant.

47 That having been said, we observe that it might be prudent that, in future cases, the Respondent does not (absent exceptional and needful circumstances) utilise words such as "wilful", "intentional" or "deliberate" in a charge where it intends to proceed under the *second* limb in *Low Cze Hong*. If it is indeed necessary to utilise such words, then it should make it clear beyond peradventure that it is proceeding under the *second* limb in *Low Cze Hong*, and *not* the *first*. We should nevertheless emphasise the fact that one is to generally look at the *substance* – as opposed to merely the *form* – of the charge(s) concerned.

48 Let us turn now to what we consider to be the crux of Issue 1. The basic thrusts of the arguments of both the Appellant and the Respondent are, at bottom, fairly straightforward and have been set out above (at [34] and [38]). To recapitulate in the briefest of fashions, Mr Sreenivasan argued that because *everyone* knew (or ought to have known) that *neat (ie, undiluted*) CPG *cannot* be administered *directly* into a patient's heart as it might lead to complications such as in fact occurred in the present case, the Appellant was ***entitled to assume*** that the syringe handed to him ***must*** *have contained* ***crystalloid (ie, diluted)*** *CPG*. Ms Choo, however, argued that there was, in fact, an ***alternative*** method of administering ***diluted*** CPG to the Patient: the Appellant could have mixed *neat* CPG with the Patient's blood *at the operating table* in order to produce *blood* CPG (which was an *alternative* form of *diluted* CPG), and therefore the Appellant was ***not*** entitled to assume that the CPG in the syringe had been diluted.

49 It is clear that the Appellant asked for CPG at the operating table *and* that all concerned (including the perfusionists) *knew and understood* that the Appellant was going to *administer* CPG *at the operating table itself*. This meant, as Mr Sreenivasan argued – and we agree – that *everyone knew (or ought to have known) that only diluted CPG (whether diluted with blood (ie, blood CPG) or with Hartman's solution (ie, crystalloid CPG)) could be administered in this manner.* In this last-

mentioned regard, we should emphasise the fact that the reference to "everyone" did *not, literally*, include everyone in the operating theatre at the material time – but only to those who were *expected to have the necessary expertise* in this matter. For example, this would include the Appellant and the perfusionists, but *not* the scrub nurse. *In any event*, it was clear to us, having regard to the evidence on record, that *everyone who mattered in fact knew (or ought to have known) that only diluted CPG (whether in the form of blood CPG or crystalloid CPG) could be administered in the manner just referred to.*

50 We further find that there is ***no evidence*** on record that the CPG which the Appellant intended to administer directly into the Patient's heart *could in fact be diluted with Hartman's solution at the operating table itself (thus producing crystalloid CPG)* – although Ms Choo sought to argue that there *was* in fact *an alternative method* which we will consider in a moment (*ie*, diluting the neat CPG with *the Patient's own blood*, thus producing *blood* CPG, which, as we have noted above, was *an alternative (and viable)* form of preparing *diluted* CPG). *If*, *however*, this alternative method (mentioned by Ms Choo) did *not* exist on the facts of this case, it would follow that the Appellant was *entitled to assume* that the syringe handed to him by the scrub nurse *must have contained crystalloid CPG.*

51 We therefore find Mr Sreenivasan's argument to be a very persuasive one in the absence of any other explanation to the contrary. *However*, as already noted, Ms Choo had argued that the Appellant was ***not*** entitled to make the assumption referred to at the end of the preceding paragraph because there *was another possible method* of administering the CPG which entailed the utilisation of *neat CPG instead* (and which, as mentioned, would entail the Appellant diluting the neat CPG with blood at the operating table itself, thus producing *blood* CPG which could be used (*instead of crystalloid* CPG, which is an *alternative form of diluted* CPG)). Indeed, Ms Choo stated that, because the Appellant was operating in *a semi-closed system*, *the operating table* was the *only sterile* venue at which *neat CPG* could be diluted with *blood*. At this juncture, we should observe that Ms Choo's (related) argument to the effect that the Appellant ought to have checked whether the CPG was neat or diluted was *also* due to the fact that the administering of CPG directly into a patient's heart (instead of through a heart-lung machine) was *not* a *routine* procedure (see above at [23(c)]). Whilst this may in fact be the case, we are of the view that this does *not* detract from Mr Sreenivasan's argument that, *if CPG* is *in fact administered directly into* a patient's heart, then *everyone* knew (or ought to have known) that ***only diluted*** CPG *can be administered in such a manner*; correlatively, ***neat CPG cannot*** *be administered in such a manner*. We also note that there was *no* suggestion that what the Appellant did was *either illegal or otherwise prohibited by any hospital procedures*. And so this brings us back to Ms Choo's first argument which we have set out at the outset of the present paragraph. We should state that we find that this argument is, at first blush, *a persuasive counterpoint* to Mr Sreenivasan's argument. Put simply, if there were indeed ***two alternative methods*** of administering CPG in a ***diluted*** form – *one* of which involving the use of ***already*** *diluted* CPG (in the form of ***crystalloid*** CPG), the *other* involving the use of *neat* CPG (which would be *diluted* with *blood at the* operating *table itself*, thus producing ***blood*** CPG instead) – then we agree that the Appellant had a ***duty*** to ***check which type*** *of CPG* was in the syringe that was handed to him by the scrub nurse *since crystalloid CPG* ***and*** *neat CPG are* ***both colourless*** *in form* (see also above at [12] and [38]).

52 As already noted above (at [9]), the Appellant was operating on what was termed a *semi-closed system*, which did ***not*** allow the perfusionists to draw sterile blood. However, it appears from the evidence that the ***absence*** of a Y-line or multi-tail ***did not preclude the Appellant*** from drawing blood from the Patient ***at the operating table itself*** and ***mixing*** it with ***neat*** CPG in order to produce ***blood*** CPG (which could then be safely administered to the Patient). That this was in fact possible seems to be borne out by the evidence on record. We would, however, observe at the outset that

the evidence in this regard came across to us as tangential references. Put simply, the possibility of the Appellant preparing blood CPG at the operating table never appeared to a central plank in the Respondent's case before the DC. The significance of this will be examined in greater detail below (at [64]).

53 We turn to examine the evidence with regard to the possibility of preparing blood CPG at the operating table. At the hearing of this appeal, Mr Sreenivasan submitted that, under a semi-closed system, there was no way that the Appellant could have drawn sterile blood at the operating table to dilute neat CPG, and that he was therefore entitled to assume that the CPG in the syringe passed to him by the scrub nurse had already been diluted by the perfusionists. He relied on the following excerpt from Dr Sheares's testimony, given during the trial by way of examination-in-chief, to support this point:

> … And because he has a semi-closed system, he felt that there is no way he could get the blood to mix with this subsequent [CPG] solution. So the syringe he asked for, he expected it to be dilute [CPG] solution as per protocol … So he didn't expect it to be coloured with blood because he said it was no way he could mix blood with it. …

54 At first blush, we found Mr Sreenivasan's argument to be persuasive, until Ms Choo pointed out in her oral submissions that it was actually possible for the Appellant to draw sterile blood at the operating table. In fact, the Appellant was the only person in the operating theatre who had access to sterile blood, given the semi-closed system which prohibited the perfusionists from drawing sterile blood from where they were stationed. Having reviewed the circumstances and the evidence as a whole, we are of the view that the evidence appears to support Ms Choo's point. Conversely, there is actually little evidence to support Mr Sreenivasan's point.

55 First, we are not persuaded by Dr Sheares's evidence in respect of this point, given that Dr Sheares appears to have observed to the contrary later on during cross-examination. His following testimony suggested that it was probably possible for a surgeon, in a semi-closed system, to draw sterile blood and prepare blood CPG by himself:

MS CHOO:	If it was a *single line system*, all right, is it possible for the surgeon to actually *draw sterile blood and prepare blood [CPG] himself*?
A.	Ah, so he would have to draw blood himself from some source.
Q.	Yes.
A.	Yes, he has to draw it from some source, and then he will have to mix it 4:1.
Q.	Right.
A.	Yes.
Q.	So that is also a *possible option*?
A.	*Yes*, but I mean it's, you know, once the surgeon had made up his mind that he was going to give dilute crystalloid [CPG] into the vein graft, there is actually no essential reason to mix it with blood. …

[emphasis added]

56 That drawing sterile blood was not only possible but could only be done at the operating table is corroborated by Dr Sriram Shankar's ("Dr Shankar") testimony as follows:

> A. … The only two people who have access to this cannula is either the surgeon or the assistant. The perfusionist is far away. So if you want an extra dose of [CPG], you have two choices. *Either you make it yourself, which is what they preferred to do*, or you can take it from -- disconnect the connection they already have and take some extra volume …
>
> …
>
> A. … [T]he perfusionist cannot draw blood because the moment he draws blood, the syringe is not sterile any more. How is he going to pass it to the surgeon? *So if anything has to be done in the operating table during the time of surgery, the surgeon has to do it himself.* It can't be done by the perfusionist.
>
> Q. *So the surgeon has to draw the blood?*
>
> A. *Yah, through the -- either the aortic cannula …* or you want [CPG] solution, you can get it through the cardioplegic cannula, you have two choices.
>
> [emphasis added]

However, it is also important for us to caveat that Dr Shankar only made a passing reference to the possibility of drawing sterile blood from the Patient and preparing the blood CPG at the operating table. No further evidence was given on the *actual mechanics or practicality* of doing so given the ongoing operation. In fact, he had observed that diluting a "separate solution on table is very unusual, [and] not normally done".

57 The Appellant also accepted that he was the only person in the operating theatre who had access to sterile blood:

> Q. Okay. Now, can you tell us, what was in your mind when they handed you the syringe …?
>
> A. Okay. I looked at the [CPG] solution. Because I knew it's a semi-closed system. Semi-closed systems [mean] that the perfusionist is not able to draw blood in a sterile manner and mix it with the [CPG] solution. It technically is not possible, yeah? So I knew I would get diluted [CPG] solution, which is clear in colour and not blood-stained because *it would have been up to me to dilute it if I wanted to, with blood, because I'm the only one to have access to … get direct sterile blood from the operation side.*
>
> [emphasis added]

However, we note that the main point the Appellant was making was that he thought he had been given diluted CPG solution when he was handed the syringe.

58 In another portion of his testimony (given in another tranche of the trial which took place almost five months later), he stated as follows:

> Q. The perfusionist cannot draw blood in a sterile manner --
>
> A. Mm hm.

Q. -- but you can?

A. *If I take a needle and put it directly into the ascending aorta here during the surgery, yes, I can.*

Q. *So you can draw blood from --*

A. *Yes.*

[emphasis added]

While the Appellant unequivocally admitted that he could draw sterile blood at the operating table, it is equally important to note that the focus here was on whether the perfusionists could draw blood in a sterile manner. The emphasis did not appear to have been on the Appellant's ability to draw sterile blood from the Patient. Notably, Ms Choo did not pursue the mechanics and the practicality of doing so.

59 To summarise, we have thus far concluded that the Appellant was probably ***wrong*** to ***assume*** that because the perfusionists knew that only diluted CPG can be administered, the CPG found in the syringe passed to him by the scrub nurse *must* have *been diluted*. This was because the evidence suggested that it might have been possible for him to have prepared blood CPG (which is another form of diluted CPG) at the operating table by drawing sterile blood from the Patient. To that extent, he probably bore a duty to check whether the CPG solution in the syringe was diluted or not. We pause to mention that we use the term "probably" because, as we note below (at [64]), whilst it might have been possible for the Appellant to have prepared blood CPG at the operating table, this did not appear to have been the dominant case theory advanced by the Respondent in the proceedings before the DC and, in particular, the Appellant was never asked about the *mechanics and the practicality* of drawing sterile blood from the patient. Put simply, there was insufficient evidence on record for us to make a clear finding as to whether the Appellant had a duty to check and, if so, whether he had fulfilled this particular duty.

60 We note – parenthetically – that, apart from manually preparing crystalloid CPG and manually preparing blood CPG at the operating table, the evidence suggested that there were at least two further alternative methods of administering blood CPG to the right side of the heart in the circumstances. This point was not pursued by the Respondent before us. However, even assuming that these two further alternative methods were available, this does not impact our analysis in any way. For completeness, we set out the two alternatives before explaining why they are not relevant to our analysis.

61 Dr Sheares gave evidence suggesting that, notwithstanding the single-line set-up, the Appellant could have disconnected the cannula from the aortic root and fed it into the vein graft instead. As Dr Sheares explained, doing so would have enabled the Appellant to perfuse both the "left and right systems almost simultaneously". Yet another way, according to Dr Shankar, was to disconnect the cardioplegic cannula and "take some extra volume". While he gave no further elaboration on this method, Dr Shankar might have meant that the Appellant could have drawn blood CPG from the cardioplegic cannula after disconnecting it momentarily from the aortic root, and that once sufficient blood CPG has been drawn, he could reconnect it to perfuse the left side of the heart. The right side of the heart could then be *manually* perfused using the blood CPG extracted from the cannula. In this manner, both sides of the heart could be perfused despite the absence of a multi-tail or Y-line.

62 *Even assuming* that these two further (and alternative) methods were available, this does *not* impact our analysis (see also above at [59]). The Appellant had made it clear to the perfusionists, by asking for CPG separately in a *syringe*, that he was *not* going to utilise any of these alternative methods. This is because neither of these two methods required the use of a syringe. But this does not detract from the fact that preparing blood CPG at the operating table appeared to remain an option available to the Appellant, and therefore he probably still had a duty to clarify with the perfusionists whether the syringe contained neat or diluted CPG solution.

63 Returning to the analysis proper, as already noted above (especially at [59]), the Appellant was probably wrong in thinking that, because it was inconceivable for the perfusionists to have passed him anything other than *diluted* crystalloid CPG (given that everyone knew only diluted CPG could be administered), there was no need for him to check the contents of the syringe. We find that it was *not* inconceivable for the perfusionists to have done so because there remained the *other possibility* of preparing blood CPG *at the operating table*, which would entail the perfusionists passing him *neat* CPG in a syringe. Therefore, as we have also noted (see above at [59]), *the Appellant probably had a duty to* ***clarify what type*** *of CPG was being handed to him in the syringe. We are further of the view that since* ***both*** *crystalloid* ***and*** *neat CPG are (as we have already noted above at [12], [38] and [51])* ***colourless in form*** *, it was even more incumbent on him to clarify the type of CPG that was in the syringe*.

64 Whilst the Appellant had probably failed in his duty to check with the perfusionists, this cannot be the sole ground relied upon to convict the Appellant. This is because the fact that the Appellant could manually prepare blood CPG at the operating table did *not appear* to have been the dominant case theory advanced by the Respondent in the proceedings before the DC. Even though some evidence in this regard surfaced during the course of the trial, they appeared to have been fleeting mentions only (as we have observed above at [53]–[58]). Importantly, the Appellant was never asked about the *mechanics and the practicality* of drawing sterile blood from the Patient, a point which carries equal or greater significance than the *possibility* of drawing sterile blood. Indeed, this was probably the reason why the DC did not convict the Appellant based on this ground. In fact, there was no mention of this point in the GD at all. In the circumstances, we are of the view that the possibility of preparing blood CPG at the operating table was never a live issue before the DC and therefore it is unsafe to convict the Appellant – given the ***quasi-criminal nature*** of the proceedings – on this ground alone.

65 However, *assuming for the sake of argument that this was a live issue before the DC*, there is a ***further*** reason why the Appellant should *not* be found guilty of professional misconduct, notwithstanding his failure to check with the perfusionists. The Appellant was operating in a system where the Appellant and the perfusionists *each* had a duty to ensure that CPG would *not* be administered neat. In other words, whilst the Appellant probably had a duty to check the type of CPG he had been given, the perfusionists *also* had a duty to inform him that the CPG was neat. Such a duty arose on the part of the perfusionists because, whilst it was not unreasonable for them to think that the Appellant might want *neat* CPG in order to mix it at the operating table with the Patient's blood in order to dilute the CPG (thereby producing *blood* CPG to be administered to the Patient), *it was also not unreasonable for them to realise that, whilst an unusual procedure, the Appellant could possibly have wanted, instead, crystalloid CPG in order to administer directly to the Patient at the operating table without the need for a further process of dilution*. *Unfortunately, just as the Appellant did not check with them what type of CPG had been given to him in the syringe, so also was the Appellant not warned that he had been given neat CPG.* It bears mentioning that there would have been ***no need*** for the Appellant to check with the perfusionists *had it been brought to his attention that the syringe contained neat CPG*.

66 It is true that the evidence led suggests that the perfusionists did attempt to tell the Appellant that the syringe that had been prepared contained *neat* CPG. *However*, there does ***not*** appear to be a clear finding by the DC as to whether the caution was in fact sounded. As can be seen from the following observations, the DC made it clear that the conviction was ***not*** premised on such a finding (see the GD at [32]):

> ***If*** there were these cautions by the staff, then all the more so the risk of administering neat [CPG] would have been glaring to the [Appellant] and yet he failed to appreciate it. [emphasis added in bold italics]

67 We are further of the view that *even if* the perfusionists (and the scrub nurse) had sounded the caution that they were passing the Appellant "neat" CPG, such a caution obviously did not register with him. The evidence suggests that the Appellant was "engrossed in suturing" when they sounded the caution.

68 That is not to say the perfusionists should have done more to bring the Appellant's attention to the fact that the CPG given to him was neat. We recognise that the assistant perfusionist (*ie*, Lim Kim), in voicing "neat" when handing over the ampoule of neat CPG, must have intended this as a warning. Thus, whilst we observed in the preceding paragraph that the perfusionists did not successfully inform the Appellant that he was given neat CPG, from the perfusionists' point of view, perhaps there was not much else they could have done to warn the Appellant. As Tan Cheng Lee testified, "we already tell him this is the neat solution. And on the table through our experience, they won't entertain any question from us." Hence, even though the perfusionists *also* bore a responsibility in ensuring CPG would not be administered neat, it may be unfair to single out the perfusionists as the persons solely responsible for the administration of neat CPG.

69 In our judgment, we find that this is a case where the system comprising two layers of safeguards against the administration of neat CPG had failed as a result of a breakdown in communications between members of the surgical team. There was obviously a disconnect between the Appellant and the perfusionists – the Appellant thought he was given crystalloid CPG as he expected the perfusionists (who had a duty to safeguard against the administration of neat CPG) to inform him otherwise if he had been given neat CPG; the perfusionists thought they had done their part to inform the Appellant by relaying the "neat" warning to the scrub nurse. The scrub nurse was the intermediary between the perfusionists and the surgeons, and there was insufficient evidence before us to suggest that she knew CPG could not be administered neat. Hence, she likely would not have appreciated the significance of being told it was neat. Even if she did repeat it was neat, she would have had no reason to (and evidently did not) ensure that the surgeons did appreciate that the CPG was neat or stop the Appellant from administering neat CPG to the Patient. In this regard, we find it apposite to reproduce the following remarks found in Dr Shankar's report:

> 4. There is ***serious system failure*** in the process by which [CPG] was given to the surgeon. The perfusionist was wrong to hand over undiluted solution. The surgeons (both the principal and the assistant are experienced doctors) should have checked it and not relied by saying they trusted the Nurse. This ***defeated the system process of 2 people testing drugs administered to patients*** . …
>
> …
>
> 8. This case highlights the difficulties when operations are done in an environment where ***teamwork has failed*** , as in the Operation Room that day.

[emphasis added in bold italics]

70 Given the breakdown of communications that had transpired between the Appellant and the supporting staff, we pause to observe from an outsider's perspective that the designated chain of communication seems counterintuitive, but we say no more in the absence of further evidence on this matter. Suffice to say, in the context of evaluating the operating system for procedures of this sort, this may merit consideration from the relevant agencies in due course.

71 In summary, whilst the Appellant was probably wrong to assume crystalloid CPG was the only CPG variant that the perfusionists could possibly have given him, such an oversight – having regard to the breakdown of communications and systemic failure that had transpired – is insufficient to constitute professional misconduct. It bears emphasis that the proceedings before us are ***quasi-criminal*** in nature. In the circumstances, we are not satisfied that there is sufficient evidence to find that there was *such serious negligence* on his part that it objectively portrayed an abuse of the privileges which accompany his registration as a medical practitioner – bearing in mind that the Respondent bore the burden of proving its case *beyond a reasonable doubt*. In the circumstances, we are of the view that the Appellant's appeal with regard to Issue 1 should be ***allowed*** . It is, however, important to emphasise that it ***does not follow*** that, where there has been a *systemic failure* (such as in the present case), the medical practitioner would (when he has himself been negligent) be *automatically* exonerated in the context of disciplinary proceedings. ***Everything would depend, in the final analysis, on the precise facts and circumstances concerned*** **.**

72 There are only three remaining points. First, the Respondent also argued that, as *diluted* crystalloid CPG can only be administered at 4ºC and therefore had to undergo a *cooling* process, the Appellant ought to have ascertained whether or not the syringe which was handed to him by the scrub nurse was cool to the touch. With respect, we do not agree. Given that the Appellant's hands were necessarily gloved and given that he was in the midst of operating in an operating theatre that was itself also air-conditioned, we do not find it reasonable to insist that the Appellant ought to have ascertained whether or not the syringe which was handed to him was cool to the touch.

73 Secondly, the DC had noted that preparing crystalloid CPG would have taken the perfusionists at least 20 minutes and the fact that the Appellant was given the syringe containing the CPG soon after his request was another sign pointing to the absence of a cooling and dilution process (see above at [23(b)]). Whilst it may be true that the perfusionists would require between 20 and 30 minutes to prepare crystalloid CPG, we find that the DC's reasoning is, with respect, flawed on two counts:

(a) First, the DC failed to address Dr Sheares's evidence that crystalloid CPG need not, invariably, be administered at 4ºC. Dr Sheares opined that crystalloid CPG can be administered across a range of temperatures, from cold to warm.

(b) Secondly, even if crystalloid CPG must be administered cold, the Appellant gave evidence that both neat CPG and Hartman's solution could have been taken out of the fridge so as to dispense with the need to undergo a separate cooling process. Whilst the Appellant did not appear to find corroboration for this piece of evidence, we are of the view that the DC ought to nevertheless have addressed this particular point.

74 This court has held that it is incumbent on the DC to not only state conflicting medical evidence, but also explain why it preferred the conclusion it arrived at over conflicting evidence it decided to reject (see *Ang Pek San Lawrence v Singapore Medical Council* [2015] 1 SLR 436 at [84]). As the DC had failed to do so with regard to the two matters stated in the preceding paragraph, we

find that its decision to fault the Appellant for not noticing the absence of a dilution process was unsafe and contrary to evidence, and therefore cannot be relied upon to convict the Appellant.

75 Thirdly, the Respondent argued that crystalloid CPG could *only* be administered to patients who have *cold blood agglutinins*. This does not appear, however, to have been considered by the DC, let alone been a ground for the decision that they arrived at and therefore ought not to be taken into account at this stage of the proceedings.

76 Let us now turn to consider Issue 2.

Issue 2

77 As noted above, Mr Sreenivasan had argued that there was no clear existence of a duty on the part of the Appellant to supervise Dr Kofidis and that there was no clear standard articulated with respect to such a duty if it indeed existed in the first place.

78 In our view, however, there is a *more fundamental difficulty* with the second charge (which has been set out above at [19]). It will be recalled that the second charge alleges that the Appellant "instructed and allowed" Dr Kofidis to perform the second operation "in [the Appellant's] *absence and without* [the Appellant's] *personal supervision*" [emphasis added]. The second charge also alleges that Dr Kofidis, being a conditional practitioner, could only work "under direct supervision". Hence, the gravamen of the second charge is that the Appellant should have supervised Dr Kofidis by being present at the operating theatre. Indeed, the Respondent's opening case, which was delivered on the first day of the trial before the DC, was, *inter alia*, as follows:

> [The Appellant] should have closely monitored the patient personally. Now, under the circumstances, all the more [the Appellant], as the principal surgeon, should have carried out the second operation, or at the very least, have been present to supervise the operation.

7 9 *However*, the ***grounds relied upon by the DC*** in respect of this particular issue relate to ***a completely different point*** . Its conviction of the Appellant with respect to the second charge was premised on *the Appellant's failure to obtain authority to delegate the task of carrying out the second operation to Dr Kofidis* (at [45]–[48] of the GD). As the DC stated:

> 45 ... [T]he gist of the Second Charge is not the reason for the absence of the Respondent, but his delegation of the Second Operation to [Dr Kofidis]. On this aspect, this Committee is of the view that, when the [Appellant] deemed himself unable to carry on with the Second Operation, he should not have acted on his own volition and requested [Dr Kofidis] to carry out the Second Operation. He ought to have contacted his supervisor, [Prof Lee], but failed to do so. …
>
> …
>
> 48. … [A]s a [conditional practitioner], the [Appellant] did not have the authority to delegate [Dr Kofidis] … to manage the [P]atient. … This, in our view, is ethically wrong and constitutes professional misconduct.

80 It is clear, in our view, that *there is* ***no clear nexus*** *between the particulars of the second charge and the grounds relied upon by the DC to convict the Appellant on this particular charge*. Whilst the second charge states that the Appellant must have personally supervised Dr Kofidis in so far as the second operation was concerned, the DC convicted the Appellant of the second charge on

the ground that the Appellant failed to obtain his supervisor's authority for Dr Kofidis to perform the second operation.

81 Further, *even if* we take the second charge on its own terms, it should be noted that the Appellant had claimed that he had been suffering from a severe migraine and that this resulted in him not being able to perform the second operation. This could also explain why he was also not present in the operation theatre during the second operation itself. Ms Choo argued, however, that (as the DC itself found at [54] of the GD) the Appellant did in fact keep in touch with Dr Kofidis when the latter needed help during the second operation. This might well have been the case but the DC, with respect, made no definitive finding either way in so far as the Appellant's claim that he had suffered a severe migraine was concerned and (as a result) what the precise consequences of that migraine were *vis-à-vis* the Appellant's duty to supervise (assuming that the DC believed the Appellant's claim in the first place), and in the absence of such a finding, the DC could not fault the Appellant for not supervising Dr Kofidis. In this particular regard, the DC had observed that it was "in no position to doubt or accept the [Appellant's] migraine attack" (see the GD at [45]). Further, the DC even emphasised (at [54] of the GD) that the Appellant was "not competent or authorised to "supervise" [Dr Kofidis] in the first place", which in fact happened to be the exact opposite of the contents of the second charge. These two observations made by the DC buttress the finding of the *lack of a nexus* between the particulars of the second charge and the grounds relied upon by the DC to convict the Appellant of this particular charge.

82 In the circumstances (and bearing in mind the overall legal burden of proof which the Respondent bears of proving the second charge against the Appellant beyond a reasonable doubt), we are of the view that the appeal by the Appellant with regard to Issue 2 must also be *allowed*.

Conclusion

83 For the reasons set out above, we allow the appeal with regard to both Issue 1 and Issue 2. In so far as the issue of costs is concerned, we are guided by the principles set out in our decision in *Ang Pek San Lawrence v Singapore Medical Council* [2015] SGHC 58. In our view, it is clear that the decision by the Respondent to bring the charges was made honestly, reasonably, and on grounds that reasonably appeared to be sound in the exercise of its public duty. We also bear in mind the fact that the Appellant, whilst being acquitted of both charges, was – in so far as the first charge was concerned – also under at least some duty to have checked and confirmed what type of CPG was in the syringe that was passed to him by the scrub nurse. Taking into account all the relevant circumstances, it is our view that there should be no order as to the costs of the proceedings before the DC and that the Appellant be awarded half the costs of the present proceedings. The usual consequential orders will apply.

84 Given our decision to allow the appeal with respect to both charges, there is no need for us to discuss the issue with respect to the admissibility (or otherwise) of the findings made by a COI set up by NUH to investigate the two incidents that constituted the subject matter of the two charges for the purpose of the proceedings before the DC. Even assuming that the findings were in fact inadmissible by virtue of the relevant provisions of the PHMCA, was it nevertheless possible for the DC to look at the findings in a *redacted* form? However, as this possibility was also not explored by the parties in the proceedings below, we say no more about it.

85 It is of course also unnecessary for us to give our views on the respective parties' arguments in relation to sentence (*ie*, Issue 3).

86 We conclude by observing that the adverse medical consequences which afflicted the Patient

himself were extremely unfortunate and we sympathise fully with him as well as with his parents. However, the issue before us in the present proceedings was whether or not the Appellant was liable in professional misconduct for these consequences. For the reasons set out above, we have found that he was not.

87 The various hospitals and/or the Respondent may nevertheless wish to revisit the current protocols relating to the administering of CPG with a view as to whether even more guidance can be furnished (see also above at [69]–[70]). Hindsight is of course 20/20 vision but this ought not, in principle, prevent further improvements whenever and wherever they can be made.