CORONERS ACT, 2003

SOUTH *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 7th and 8th days of September 2005 and the 13th day of October 2005, by the Coroner's Court of the said State, constituted of Mark Frederick Johns, State Coroner, into the death of John Matthew Murray.

The said Court finds that John Matthew Murray aged 35 years, late of 34 Station Street, Murchinson, Victoria died at the Royal Adelaide Hospital, North Terrace, Adelaide, South Australia on the 17th day of October 2002 as a result of pulmonary thromboembolism due to left deep calf vein thrombosis complicating left lower leg and pelvic fractures. The said Court finds that the circumstances of his death were as follows:

1. Introduction

1.1. Mr John Matthew Murray was involved in a road accident at the junction of B80 Highway (formerly Jamestown/Orroroo Road) and Bartlett Road, Orroroo, approximately two kilometres south of the Orroroo General Post Office late in the afternoon of 1 October 2002 (Exhibit C8a). He was riding his Harley Davidson motorcycle, registration number (VIC) ZG238 when he was involved in a collision with a white Toyota Landcruiser, registration number VYT812 which was driven by Mr Joshua Clarke (Exhibit C8a).

1.2. Mr Murray died in the Royal Adelaide Hospital on 17 October 2002. According to the post-mortem examination report of Dr J D Gilbert (Exhibit C3a), the cause of death was pulmonary thromboembolism due to left deep calf vein thrombosis complicating left lower leg and pelvic fractures.

1.3. A photograph of the damaged Toyota Landcruiser appears at page 14 of Exhibit C9a. The vehicle has extensive damage to its left-hand side where the passenger door hinges to the rest of the body. The damage to the Toyota was described by Mr Graham, Vehicle Examiner of the Major Crash Investigation Unit, as follows:

> 'The vehicle was extensively damaged to the left-side. The left front mudguard was pushed in and up at the base of the left A pillar, by about 24cm. The front left chassis base was torn and pushed back, by about 3cm. The floor pan and side ceil were pushed up and in, by about 32cm, directly under the left A pillar. The left door was pushed back and in at the front, by about 30cm, separating the outer door skin from the inner door skin. The left kick pedal was smashed at the front. The left door was pushed back into the left B pillar, by about 4cm and the window broken.'
>
> (Exhibit C10a, p3)

1.4. Photographs were also taken of Mr Murray's Harley Davidson motorcycle and they appear as part of Exhibit C11b. They show extensive damage to the front of the motorcycle. It appears from those photographs that the front wheel of the motorcycle and its associated mechanical components were torn off in the accident.

1.5. At the hearing of this Inquest the oral evidence was confined to the treatment received by Mr Murray at the Royal Adelaide Hospital after the accident. However, I have included this brief description of the condition of the vehicles following the collision to give some idea of the seriousness of the collision.

1.6. As I have stated, there was significant damage to both vehicles. As a motorcyclist involved in such a collision, Mr Murray was subjected to very considerable trauma, involving the dissipation of much force. Mr Murray's injuries included significant leg and pelvic fractures. Mr Anthony Pohl, Orthopaedic Surgeon described the seriousness of Mr Murray's injuries. Mr Pohl commented that any pelvic ring disruption requires 'tremendous force dissipation' (T53). He said that the amount of force that would be required to kill a person is not much greater than that required to fracture the pelvis in the manner suffered by Mr Murray. He stated that a pelvic ring disruption is a life-threatening injury due to the amount of force dissipated. Mr Pohl was at some pains to emphasise this point and he returned to it later in his evidence at T95-T96 where he again emphasised the severity and magnitude of the force necessary to fracture a pelvis. He said:

> 'It's a higher magnitude force, all of which if the bones didn't exit the body, was dissipated in the soft tissues. That includes all the veins in the pelvis.' (T96)

1.7. The severity of Mr Murray's injuries is also apparent from the extent of surgery which was performed upon him following his admission to the Royal Adelaide Hospital. Mr Murray was admitted to the Emergency Department at the Royal Adelaide Hospital at 11pm on 1 October 2002, the day of the accident (T53).

2. Events following admission to the Royal Adelaide Hospital

2.1. Mr Adrian Bauze, Orthopaedic Surgeon, gave evidence at the Inquest. In October 2002 Mr Bauze was employed at the Royal Adelaide Hospital as a Registrar in the Orthopaedic Department and he performed surgery on Mr Murray in the early hours of 2 October 2002. Mr Bauze described Mr Murray's injuries as follows:

> 'He presented with numerous orthopaedic injuries, he had a severe pelvic fracture, he had a very severe fracture of his left tibia with some bone loss and bone exposed and soft tissue loss. He had fractures of both of his wrists and he also had a laceration over his left foot with fractures of his metatarsals or bones in his foot beneath that. We also queried whether he had an injury to his urethra at the time of his pelvic fracture as well. As well as that he had multiple bruises and abrasions.' (T13)

2.2. Mr Bauze and another surgeon operated on Mr Murray between 2:27am and 5:57am (T14). During that operation three procedures were performed, being firstly for the left tibia, secondly a closed reduction of the right wrist and thirdly, debridement and suturing of a laceration over the left foot.

2.3. Mr Bauze again operated upon Mr Murray in the afternoon of 2 October 2002 (T14).

2.4. On 4 October 2002 plastic surgery was performed on Mr Murray (T20). On the same day Mr Murray was also operated upon for the first time by Mr Pohl. That surgery involved reduction of the fractured pelvis and stabilisation which required fixation with plates and screws and the placement of a hybrid external fixator to Mr Murray's tibula fracture (T53).

3. The pelvic fracture anti-coagulation regime

3.1. Mr Pohl gave evidence that one of the big post-operative risks of surgery to correct pelvic ring disruption is thromboembolic disease which he described as a complication that arises when a thrombosis embolises and passes through to the heart where it can block the heart or pass through to a lung and damage the lung. Mr Pohl gave evidence about a protocol developed by him in 1987 which was designed to

address the post-operative risk posed by thromboembolic disease. He identified Exhibit C12e as the protocol.

3.2. Exhibit C12e is quite short and as it plays a major part in this Inquest, I set it out in full below:

> 'PELVIC FRACTURE ANTI-COAGULATION REGIME
>
> Step 1: Check coags, if normal then:
>
> Step 2: Commence Heparin subcutaneously 3500 units TDS 48 hours post-op or post injury or on removal of drainage tubes or when risk of acute bleeding is over. Heparin is given at 0800, 1600 and 2400.
>
> Step 3: After 24 hours at 1200 noon, repeat APTT then adjust dose according to table below:
>
> | APTT | ADJUSTMENT OF HEPARIN DOSE |
> |---|---|
> | <24.5 | +1000 units |
> | 25-28 | + 500 units |
> | 28.5-33 | 0 |
> | 33.5-36 | -500 units |
> | >36.5 | -1 000 units |
>
> (Change dosage for 1600 dose)
>
> Step 4: Repeat at 24-hour intervals until therapeutic and stable then at 48 hour intervals.
>
> Step 5: Commence Warfarin day 7 if indicated (ie not going to theatre again or when the risk of secondary haemorrhage is over) and cease Heparin once Warfarin is therapeutic.
>
> See **Warfarin dose adjustment for pelvic patients** keeping INR Between 2.0 and 2.5 (Howie 1.6 - 2.3)'
>
> (Exhibit C12e)

3.3. There was no evidence about who the author of Exhibit C12e was. There is no doubt that Mr Pohl was the person who developed the regime, but the evidence does not go so far as to suggest that he was the author of Exhibit C12e (see Transcript, p56). It would be curious if he were the author, because Mr Pohl was very insistent in his evidence that his protocol was 'an anti-thrombotic regime' (T73). At T73, Mr Pohl took issue with an observation which had been made by Dr Gilbert in the post-mortem examination report (Exhibit C3a). At page 4 of that report under the heading 'Histology' Dr Gilbert wrote:

> 'Left deep calf veins: Sections from including the intramuscular veins in the left soleus muscle showed recently formed thrombi without evidence of organisation. The left

> posterior tibial veins contained thrombi of variable age. Some were well organised indicating an age of at least a week.'
>
> (Exhibit C3a, p4)

At page 5 of that report Dr Gilbert states:

> 'Obviously, if therapeutic anticoagulation had been achieved earlier, the death might have been prevented.'
>
> (Exhibit C3a, p5)

3.4. Mr Pohl disputed that statement at T73:

> 'It's important to use words precisely. That statement referred to anticoagulation, my patient was not anticoagulated. The patient was kept on an antithrombotic regime.' (T73)

3.5. For obvious reasons, it is ironic that the protocol should have been described by its author as an 'anticoagulation regime'.

4. <u>The development of the Heparin regime.</u>

4.1. Mr Pohl was an extremely impressive witness. He is obviously a leader in his field. He gave evidence (T57) that he has carried out most of the orthopaedic surgery for patients with pelvic injuries within the Royal Adelaide Hospital over last 20 years. He described the surgery as difficult, dangerous and demanding. He has performed that surgery on the vast majority of all patients in South Australia. Furthermore, patients have been referred from the Northern Territory and the eastern part of Western Australian and the western part of the Eastern States. There have been some referrals from Royal North Shore Hospital.

4.2. Mr Pohl gave a statement to Detective McLean which was tendered and admitted as Exhibit C17. In that statement he describes how when he embarked on pelvic and acetabular fracture surgery in 1987 he was concerned about the incidence of thromboembolic disease. He stated that he looked at the experience in one orthopaedic unit over a six month period. In that time, two patients died and three patients lost one lung through massive pulmonary emboli. This was, to use his words, 'an inordinately high risk of thromboembolic disease' (Exhibit C17, p4), so much so that he was concerned about whether he should even be embarking on surgery with these patients. He determined, in conjunction with the then head of the Haematology Unit, Dr John Lloyd, that all possible methods of detecting the presence of thrombi in veins were unacceptable for one reason or another. He therefore was left in the

position in which he had no investigation or test to determine the presence of thrombi. After a review of all literature he came up with a final decision that he would use Heparin on a sliding scale.

4.3. According to eMIMS, Heparin is a naturally occurring mucopolysaccharide with in vitro and in vivo anticoagulant activity. Heparin inhibits reactions that lead to the clotting of blood. Once active thrombosis has developed, larger amounts of Heparin can inhibit further coagulation by inactivating thrombin and preventing the conversion of fibrinogen to fibrin.

4.4. In Exhibit C17 Mr Pohl describes the Heparin regime being used by other medical practitioners. The more commonly used protocol regime for Heparin is 5000 units twice a day (T61). The idea of Mr Pohl was to administer the Heparin subcutaneously in order to maintain a fairly constantly balanced dose that is released into the body over a period of time. At T60 Mr Pohl refers to a study performed at Flinders Medical Centre which showed that patients who were treated twice daily with Heparin would experience wide variations in the amount of anti-thrombotic protection they had over a period of 24 hours. Twenty-five percent of the patients would be in the anticoagulant range and therefore in danger of haemorrhaging. Twenty-five percent of the patients would not be in an antithrombotic range and therefore would be at risk of the development of thrombi. Only fifty percent were in an antithrombotic range.

4.5. Mr Pohl described his regime of a daily dose of Heparin three times per day administered subcutaneously as a regime calculated to prevent rapid swings from an adequate dosage to an under dosage.

4.6. In Exhibit C17 Mr Pohl describes the impact of the regime. He states that from 1987 to 1997 no patient who followed that regime had a pulmonary embolus. He also said that after ten years he did have one patient who developed an embolus despite the regime. He pointed out that because pelvic fracture patients are at high risk of embolus, and because there are periods where he could not administer Heparin, there was, to use his expression, a window of risk. Immediately prior to surgery he would cease the Heparin (if it had already been commenced) and would not commence Heparin until 48 hours after surgery. This was to avoid the risk of bleeding problems during and immediately after surgery that might be created by the presence of Heparin in the patient's blood (Exhibit C17, p6).

4.7. On the subject of risk, Mr Pohl stated at T72 that even using the regime optimally with no complications or problems in the administration of the Heparin the regime is not 100% successful. While acknowledging his success in achieving a period of ten years without any incidence of life threatening emboli, he was careful in stressing that the regime could not be said to be 100% successful. He stated:

> 'The best I could say is that it is better than anything else I know, but I would reiterate there's nothing that's 100% successful.' (T73)

5. The administration of Heparin

5.1. As shown by Exhibit C12e, the regime commences with the administration of Heparin subcutaneously at 3500 units three times per day, 48 hours after surgery or injury or when the risk of acute bleeding is over. The Heparin is given at 0800, 1600 and 2400 hours. After 24 hours at 12 noon blood would be taken from the patient for the purposes of testing the APTT level of the blood. 'APTT' is an abbreviation for activated partial thromboplastin time (T26) and is a laboratory test or measurement of the coagulability of blood measured in time (T61).

5.2. The Heparin dose was intended to be adjusted at 1600 hours following the reporting of the APTT results taken at 12 noon of the same day. The table in Exhibit C12e shows the manner in which the dose is meant to be adjusted according to the regime. At an APTT of less than 24.5, the Heparin dose is meant to be increased by 1000 units for each administration. Where the APTT falls between 25 and 28, the dose is to be increased by 500 units. When the APTT falls between 28.5 and 33 there is to be no increase or decrease in the Heparin dose. If the APTT falls between 33.5 and 36 the Heparin dose is to be reduced by 500 units and if the APTT exceeds 36.5 the dose is to be reduced by 1000 units per administration. This regime continues until stability is achieved at an APTT score of between 28.5 and 33 at which point the patient is being maintained at a therapeutic antithrombotic level.

5.3. At that point, according to the regime, the patient is commenced on Warfarin and Heparin is ceased once Warfarin is therapeutic (see Exhibit C12e).

5.4. The record of the administration of Heparin to Mr Murray during his treatment in the Royal Adelaide Hospital is contained in Exhibit C4b which is entitled 'Medication Chart - Variable Dose Drugs'.

5.5. Exhibit C4b discloses that Heparin was administered to Mr Murray for the first time at 1600 hours on 6 October 2002 and thereafter three times per day until the last dose was administered at midnight on 16 October 2002. Mr Murray's blood was tested on each of the days from 7 October 2002 until 16 October 2002 inclusive. On all of those days apart from 15 and 16 October 2002, the APTT range was less than 24.5 and accordingly, at 1600 hours on each of those days, the prescribed Heparin dosage should have been increased by 1000 units. However, the dose was only increased by that amount on 12 October 2002. On 6 October 2002 and on 12 October 2002 the prescribing doctor was Dr Rami Tadros, one of the interns with responsibility for Mr Murray. On 6 October 2002 Dr Tadros prescribed the correct initial dose of 3500 units. On 12 October 2002 Mr Murray's blood test reported an APTT score of 23 seconds and Dr Tadros prescribed the correct increased dose for that day being an increase of 1000 units.

5.6. On each of the other days, the prescribing doctor was Dr Hassan Hasan. On each of those other days, Dr Hasan's prescribed dose increased by only 500 units when the regime stipulated an increase of 1000 units for the APTT scores on those days. Dr Hasan failed to prescribe the correct dose in accordance with the regime on those days. On 15 and 16 October 2002 the prescribing doctor was also Dr Hassan Hasan. On each of those days the APTT score had achieved a score higher than 24.5 but less than 28.5 and the correct dosage increase was therefore 500 units. On those two days, the dose prescribed by Dr Hasan was increased by that (correct) amount. This happened to be the same dosage that Dr Hasan had prescribed (incorrectly) on each of the preceding days that he had made the prescription.

6. <u>Period prior to commencement of Heparin regime</u>

6.1. Mr Murray's accident occurred on 1 October 2002. He was first operated upon in the early hours of the morning of 2 October 2002. Further surgery was performed upon him on 4 October 2002. The period prescribed under the Heparin regime of 48 hours post surgery did not expire until 6 October 2002. Therefore, to use the expression adopted by Mr Pohl at page 6 of Exhibit C17, there was a 'window' during which Heparin treatment could not be commenced upon Mr Murray due to the risk of bleeding associated with impending, and recently completed, surgery. That 'window' was the period commencing at the time of his accident, and expiring on 6 October 2002 when the Heparin regime was commenced. Certainly during this period Mr

Murray was at risk of developing thrombi, and on the evidence, there was no recognised safe method of guarding against thrombi during this period.

7. Organisation of orthopaedic units at Royal Adelaide Hospital

7.1. After his surgery, Mr Murray was admitted to one of the orthopaedic wards at the Royal Adelaide Hospital, Ward S3. According to the evidence of Mr Bauze there were three orthopaedic wards at that time and patients were admitted to wards according to where the beds were available. The wards were very close to each other and connected by a central hub.

7.2. In addition to being divided into three wards, the Orthopaedic Department was divided into two separate units. Each of the two units could have patients who were accommodated within any of the three wards. Each trauma patient who entered the unit would be under the care of a particular consultant. The consultant in the case of Mr Murray was Mr Pohl. The unit to which Mr Murray was assigned had three registrars, one of whom was Mr Bauze. The unit also had three interns. The intern primarily responsible for Mr Murray's care was Dr Hassan Hasan. When Dr Hasan was not rostered for duty, one of the other interns would look after his patients. The intern who looked after Mr Murray when Dr Hasan was off duty was Dr Rami Tadros. The organisational structure was such that the registrars were not assigned particular patients. The registrars had responsibility for all of the patients. Effectively, patients were assigned to an individual intern and an individual consultant but not to an individual registrar.

7.3. Each unit would normally have between 30 and 50 patients to care for at the relevant time (T18). Each morning there would be a separate ward round conducted by each of the units. The doctors working within a particular unit would visit all of the patients under that unit's care, no matter which ward they were on (T17). The normal practice was for all doctors, apart from the consultant, to attend the morning ward round. The intern responsible for the day to day care of a patient would advise the group of any changes in a patient's circumstances or any concerns they had or any issues which needed to be addressed. The registrars were responsible for dealing with any such concerns or issues. Other staff such as nurses and physiotherapists who were on the ward rounds as well could also raise issues. The patient could raise any concerns also (see T19).

7.4. The consultant would do a ward round the morning after being on-call for trauma and there was also a weekly consultant ward round on a Wednesday morning (see T20).

8. Dr Hassan Hasan

8.1. The Court was told that Dr Hasan was no longer in Australia. Exhibit C13a is a statement from Maris Akermanis, Detective Senior Sergeant. Detective Akermanis states that on 21 July 2005 he made enquiries with the Department of Immigration and Multicultural and Indigenous Affairs relating to Dr Hasan. He was advised that a Hassan Amjad Hassan born 1 October 1965 left Australia on 8 August 2004 from the Tullamarine Airport in Victoria. The destination was believed to be Iraq. Detective Akermanis noted that the spelling of the surname was not the same as other records for Dr Hasan but the date of birth is the same as that for Dr Hasan. I note that the first two names correspond exactly. In the circumstances, I find that Dr Hasan left Australia on 8 August 2004. Accordingly, Dr Hasan would not have had notice of the Inquest in this matter. One might suggest that, as Dr Hasan was interviewed by Detective McLean who identified herself as an investigator attached to the Coronial Investigations Section of the Coroner's Office, he might have expected that there would be an Inquest in due course. However, his familiarity with the South Australian legal system was probably such that one could not safely make such an inference.

8.2. I have already noted that Dr Hassan Hasan was the intern primarily responsible for the care of Mr Murray. Dr Hasan was interviewed by Detective McLean in the presence of his solicitor. The interview was transcribed and was tendered as Exhibit C14a. His statement shows that he obtained his medical qualifications in Iraq in 1990. It appears that shortly after coming to Australia he started work at the Royal Adelaide Hospital as an intern in the year 2002.

8.3. Dr Hasan acknowledged at interview that he was the intern charged with the responsibility of looking after Mr Murray. He was asked about the Heparin protocol and his understanding of why Heparin treatment was indicated for Mr Murray. He stated that it was indicated in order to prevent DVT (deep vein thrombosis) and pulmonary embolus. Dr Hasan acknowledged that he recalled the Heparin protocol and stated that copies of the protocol were available in the nurses station.

8.4. Dr Hasan was asked whether he understood the protocol and what was required of him. He replied that he thought he was doing the right thing because no-one told him otherwise (Exhibit C14a, p5). Dr Hasan was shown the medication chart (Exhibit C4b). He acknowledged his signature for the Heparin prescriptions on 7, 8, 9, 10, 11, 13, 14, 15 and 16 October 2002. When asked why he did not increase the Heparin dose by 1000 units on 7 October 2002 he stated 'that was my understanding at that time' (Exhibit C14a, p7). When asked whether there was someone he could have approached to seek clarification in relation to the protocol he replied 'the registrar' (Exhibit C14a, p12). When asked whether he did that he said:

> 'No, but they should follow up, you know. We are as an intern like a robot. We don't do anything unless they agree about what we should do and unless we got an advice from them to do that, even the, you know, any medication, anything, they should advise us what we can do, what we should do but nothing happened with this thing.'
>
> (Exhibit C14a, p12)

8.5. Later he stated that it was the job of the registrar to monitor the APTT and to advise the interns to increase dosages. He repeated that he thought he was doing the right thing because no-one told him that he had made a mistake.

9. Dr Hasan's language skills

9.1. English was not Dr Hasan's first language. According to the evidence, his first language was Arabic (T133). Mr Doherty, who appeared for Mr Murray's parents, asked questions of Mr Bauze, Mr Pohl and Dr Tadros about the English language skills and general communication skills of Dr Hasan. Mr Bauze gave evidence that Dr Hasan's English was heavily accented. However he stated that although he found conversing with Dr Hasan a little difficult he still felt that he could converse without major problems. He was asked if there were occasions where he did not understand what Dr Hasan was saying to him and he denied that. He was asked if he thought that Dr Hasan may have had trouble understanding him, and he replied that after this incident he began to question whether Dr Hasan had understood 'what we had been talking about' (T39). However, Mr Bauze pointed out his understanding that Dr Hasan had passed the required English test to work as a Medical Practitioner in this State.

9.2. When questioned on the same topic by Mr Doherty, Mr Pohl noted that Dr Hasan's English was more difficult to understand than Mr Pohl's own English but he pointed

out that there are a range of people in the hospital whose command of the English language varies. Mr Pohl stated that he could never recall having to ask Dr Hasan to repeat himself in order that Mr Pohl could understand what he was saying and he also stated that he could not recall an instance where Dr Hasan could not understand what he, Mr Pohl, was saying.

9.3. Dr Tadros was also asked about Dr Hasan's communication skills and he stated that he did not have any difficulty understanding Dr Hasan. He said:

> 'Dr Hasan had an accent but you could still understand him' (T134)

9.4. Ms Shaw, counsel assisting me, tendered the audiotape transcript of the interview of Dr Hasan conducted by Detective McLean (Exhibit C14a) without objection. The audiotape was admitted as Exhibit C19 and I was invited to listen to the audiotape for the purpose of forming a view about the adequacy of Dr Hasan's communication skills. I have taken the opportunity to listen to the tape and having heard it I can certainly understand why Mr Doherty's instructions from the deceased's parents were that they found it very difficult, if not impossible, to understand Dr Hasan. However, the tape does not assist me in forming any conclusions about why Dr Hasan did not follow the Heparin protocol. There was no doubt that he was aware of it, and there was no suggestion that he had any difficulty in reading. In fact, I find it highly unlikely that Dr Hasan had any difficulties in reading and understanding written English.

9.5. Dr Hasan's personnel file was tendered, having been produced by counsel for the Royal Adelaide Hospital in answer to a subpoena issued at the request of Mr Doherty. I have examined the personnel file. It contains a number of documents entitled 'internal evaluation form' which were apparently completed by different supervisors responsible for Dr Hasan during the several intern placements completed by him at the Royal Adelaide Hospital. The file contains a memorandum from Dr Anna Chur-Hanson to Dr Mitra Guha and Ms Adrienne Lewis in relation to Dr Hasan. The memorandum is dated 1 October 2002 and states that Dr Hasan attended four, one hour sessions with Dr Chur-Hanson, to receive feedback on his spoken English and medical communication skills. Dr Chur-Hanson made assessments and observations in relation to Dr Hasan's spoken English and medical communication skills. In relation to his spoken English, she assessed Dr Hasan on eleven parameters of speech, including tense, accent, audibility and fluency. She stated that on a scale of 1 (poor)

to 5 (as a native speaker) Dr Hasan consistently scored 4 to 5. She assessed him as not in need of language skills training. In relation to his medical communication skills she stated that he was weak in the following areas: building rapport, using open ended questions, actively listening, negotiating and demonstrating empathy. She stated:

> 'Across the four sessions there was a tendency to premature closure, with psychosocial issues ignored or minimised in favour of a medical, pharmacological solution. In addition, Dr Hasan showed a lack of knowledge regarding mandatory reporting and appropriate referral services for domestic violence and sexual abuse situations.'
>
> (Exhibit C20)

Apart from recommending that he be given advice on how to deal with mandatory reporting, there was no recommendation for remedial work in relation to his English or communication skills.

9.6. I have considered the intern evaluation forms that are on the file. In March 2002 Dr Kuhn commented that Dr Hasan had 'major problems with communication with patients, relatives and staff'. In May 2002 Mr Dolan noted a steady improvement and a major effort to improve communication skills. He noted that Dr Hasan is 'obviously well motivated. At his present level of progress he should be reasonably ready for registration at the end of the year'. In July 2002 Dr Chia reported that Dr Hasan has 'some language limitation but otherwise he has demonstrated an ability to prioritise work and gets the work done'. Mr Pohl's report for the placement in the orthopaedic two unit assesses Dr Hasan as not having reached an appropriate level of competence for his level of training. Mr Pohl's comments on the intern evaluation form were as follows:

> 'Basic medical knowledge needs to be addressed. Language difficulties are major. I have discussed this with Dr Hanson. This man needs close supervision, and, more training in a big institution. ? should return to student education.'
>
> (Exhibit C20)

In the early part of 2003 Dr Penhall noted that he was performing in a highly satisfactory manner but noted continued problems with written and oral communication. His next placement with Professor Baggoley in the middle of 2003 noted him as an enthusiastic contributor who had tried hard to improve. Subsequently, Professor Baggoley noted as follows:

> 'Great improvement since last attachment. Confident, pleasant and interactive. Inspires confidence.'
>
> (Exhibit C20)

The last evaluation was for late 2003 and in that assessment Dr A Down noted that he was making good progress and was keen to learn.

10. The evidence of Professor Dahlenburg

10.1. Professor Geoffrey Dahlenburg was called to give evidence having provided a report in relation to intern training and supervision within the hospital system. Professor Dahlenburg gave evidence that Dr Hasan would have had to have performed an occupational English test for health professionals or an IELT being an International English Language Test before receiving his provisional registration as a medical practitioner in South Australia. Professor Dahlenburg gave evidence that the test has been tightened since the period when Dr Hasan would have undertaken it. He stated that the test has been made more appropriate to assessing people about their knowledge and communication (T156).

10.2. Professor Dahlenburg described the internship year as one in which the intern works in a supervised position:

> '… well supervised initially and then as the year progresses and it is – they're assessed as being appropriate and competent. Then the supervision is less and they take on more and more responsibility. So that at the end of the intern year they are able to work, still requiring some supervision, but to be able to formulate a diagnosis, differential diagnosis and management plan that is appropriate.' (T158-T159)

10.3. Professor Dahlenburg stated that a consultant has the ultimate responsibility for the performance of the unit under that consultant's charge. However, he stated that the registrars are responsible for the interns on a day to day basis. He stated that if an intern is extremely good, they will require little supervision but it is up to the registrar to assess the person and form an assessment.

10.4. Professor Dahlenburg commented on the Heparin regime in this case as follows:

> 'I think that, because of its special nature, I believe that required special supervision initially to insure that it was carried out. It was appropriately put up in the ward, but I think a new intern, you would have to supervise that.' (T162)

10.5. Professor Dahlenburg expressed the view that a regime such as this Heparin regime needs special supervision and initially at least, the supervision should extend to ensuring that the dose chart recorded appropriate entries. He stated that the ultimate responsibility for this supervision rested with the consultant but the hands-on

responsibility was that of the registrar. Professor Dahlenburg also expressed the view that after three or four days the dose chart should have also been checked by the registrar (T166).

10.6. In questioning at pages T178 to T180 Mr Bonig, counsel for the Department of Health, put to Professor Dahlenburg that there were three registrars on this orthopaedic unit but that no registrar was specifically attached to Mr Pohl for the purposes of attending to Mr Murray. It was put to Professor Dahlenburg that he had assumed that a registrar would in some way be attached to Mr Murray or Mr Pohl, and he stated:

> 'I think that is a correct assumption, however someone senior to an intern must have been supervising the day to day - at a registrar level, supervising the day to day management of Mr Murray in the hospital. If as I've already pointed out, this is a specific protocol, all registrars would be aware of this and someone should have checked I believe, to insure that it is as I said earlier, a special individual Heparin regime, it requires special supervision.' (T180)

Later, Professor Dahlenburg expressed the view that there should be specific responsibilities in a unit where someone does take on the responsibility of supervising an intern (T185).

11. Was the protocol brought to the interns' attention?

11.1. Mr Bauze gave evidence that when a new intern started on a placement the intern would be given an induction handbook by the department which included references to all of the procedures that were specific for orthopaedic including the Heparin protocol. There would be a meeting with the interns and there would be a discussion about what things were different about orthopaedics in comparison with other departments. Particular attention would be drawn to the Heparin protocol to emphasise that it was different to the Heparin regimes that were utilised on other wards. The interns would be shown where the protocols were located (T24). Mr Bauze also gave evidence that there was a protocol book located on each ward in a folder which listed all of the protocols for the orthopaedic department and the interns were advised to familiarise themselves with that book. He also stated that the interns would be introduced to the protocol on their first day and also prior to the protocol being commenced in a particular case (T26).

11.2. Mr Bauze gave evidence that he recalled showing Dr Hasan the protocol and running through it with Dr Hasan on his first day on the ward. He stated that he recalled discussing the protocol again with Dr Hasan and again running through the protocol once Mr Murray was started on the protocol to make sure that Dr Hasan understood it. He stated 'it appeared to me that he did' (T31).

11.3. Mr Pohl gave evidence that it was the procedure when interns arrived in the ward that they would be introduced to the protocols in the ward, including the Heparin protocol (see T97-T98).

11.4. Dr Tadros gave evidence that on arrival at the orthopaedic department the interns were given an oral orientation and were given handouts. He stated that the handouts would include things like protocols. Dr Tadros also gave evidence that the interns were told the reason for the existence of this protocol, namely, to prevent deep vein thrombosis and pulmonary embolism (T191). Dr Tadros returned to the subject later and stated that he and other interns were told that the protocol was an important protocol for the prevention of deep vein thrombosis and pulmonary embolism and that is very important in the setting of somebody who has pelvic fractures because the risk of thrombosis is very high (T192).

11.5. Dr Tadros also gave evidence about a conversation that he had with Dr Hasan shortly after Mr Murray's death in which Dr Hasan admitted that he had prescribed the doses incorrectly. Dr Tadros was asked whether Dr Hasan explained why he did this and Dr Tadros said:

> 'I asked him but he didn't give me an answer so he didn't really say why he didn't actually follow the protocol.' (T195)

Dr Tadros went on to say that he still has no idea why Dr Hasan did not follow the protocol.

11.6. Dr Tadros also gave evidence of having spoken to Dr Hasan shortly after 6 October 2002 when Mr Murray was commenced on the protocol. Dr Tadros told Dr Hasan that Mr Murray had been started on the protocol and that Dr Hasan needed to check the APTT and follow the protocol thereafter. Dr Tadros stated that he showed Dr Hasan that the protocol was stuck on the wall in the wards and told him that was where the protocol would be (T199).

11.7. Dr Tadros gave evidence that he himself understood the protocol and regarded it as straightforward (T200).

11.8. In his interview with Detective McLean it was put to Dr Hasan that the protocol was drawn to the attention of the interns by the registrars. At page 11 of Exhibit C14a Dr Hasan stated that this was not correct. When asked by Detective McLean to tell her what the correct position was he stated:

> 'The correct no one explained to me this protocol, not only to me but all the other interns.'
>
> (Exhibit C14a, p11)

11.9. Later in the interview Dr Hasan was asked by his solicitor, Mr Homburg, whether he wanted to raise any issue as to what the protocol looks like. He was provided with a copy of the protocol and asked about it. He stated:

> 'Yes, I think this one but I think there is more - I think that but maybe more. I can't remember very well but maybe they did more explanation for the protocol. I can't remember honestly. I can't remember what it is exactly here.'
>
> (Exhibit C14a, p13)

11.10. There is therefore a dispute between the evidence of Dr Hasan and Mr Bauze as to whether Dr Hasan was made aware of the Heparin protocol. Dr Hasan was informed by Detective McLean of that part of Mr Bauze's statement which was as follows:

> 'With this particular patient the registrars ask the interns if they understood the protocol and if they were happy with the dosage of heparin and were confident that that was being managed well and they informed the registrar body that they were.'
>
> (Exhibit C14a, p11)

This was the statement which Dr Hasan disputed as incorrect.

11.11. Mr Bauze's evidence at Inquest was even more specific on this subject. There is also a clear difference between Dr Hasan and Dr Tadros on this point. Dr Tadros clearly remembered the protocol and gave evidence that he specifically mentioned it to Dr Hasan. However, this was never put to Dr Hasan. In my view it is not desirable to make a finding as to Dr Hasan's credibility given that he was not present at the Inquest and did not have an opportunity to present his version of events in person. However, I believe that it is legitimate, having regard to the weight of the evidence, to find that Dr Hasan was shown the protocol and was in fact aware of its existence.

11.12. Despite the fact that Dr Hasan was not present at the Inquest and was not therefore afforded an opportunity to explain his remarks at interview, I need to observe that his responses reflect a comprehensive misunderstanding as to the nature of the role of an intern. To describe an intern as a mere robot that never exercised any initiative shows a frightening attitude. Clearly the role of the intern is much more than this. In this respect, Dr Hasan was either being disingenuous or displayed a dismaying, and entirely erroneous, misunderstanding of his important obligations.

12. Dr Tadros' involvement on 12 October 2002

12.1. The evidence shows that it was Dr Tadros who first attended to Mr Murray on 6 October 2002 which was Dr Hasan's day off. Dr Hasan returned the following day, and was on duty for the following days until 12 October 2002 when he had another day off. On that day, Dr Tadros filled in for him once again and looked after Mr Murray. On 12 October 2002, Dr Tadros ordered a blood test for Mr Murray and the APTT score that was returned was 23 seconds. Dr Tadros prescribed an increased dose of Heparin in accordance with the protocol - the increase was 1000 units. That was a correct application of the protocol. It was put to Dr Tadros by Mr Doherty that it would have been a simple matter for him to have looked at the prior entries on the medication chart which would have revealed the previous dose errors by Dr Hasan. Dr Tadros responded by saying that this would have required him:

> '… to actually look at every single APTT and look at what Dr Hasan was doing. My job at that stage was to actually look at the APTT on that day and to prescribe the Heparin dose. I had other patients. I have all of my other patients and Dr Hasan's patients and to be able to check all of the medication that all of Dr Hasan's patients were on would be impossible for me to do and so I had to – my responsibility on that day was to check the APTT and give a Heparin course according to the protocol which I did.' (T137)

12.2. I am reluctant to be critical of Dr Tadros in this situation. I accept that he was a junior practitioner at that time starting out on his career and that it was not unreasonable for him simply to confine his attention to his own task on that day.

12.3. In all other respects Dr Tadros seems to have performed his duties in a conscientious manner and to have had a good awareness of what was expected of him as an intern.

13. Conclusions as to why the correct Heparin protocol was not followed

13.1. I am unable to reach a conclusion on this subject. It is clear that Dr Hasan had the primary responsibility for the correct administration of the Heparin dose. It is also clear that he failed to administer the correct dosage on many occasions. There is simply no explanation for this failure.

14. Responsibility for supervision

14.1. Mr Bauze gave evidence that the intern is required to check his or her patients every day; the registrars would check on what the interns do, and the consultant checks on what the interns do (T168). Later Mr Pohl said of the responsibility for checking Heparin doses:

> 'The dosage should be checked by the intern. The next tier of review would be the registrar, the next tier of review would be the consultant and under that, myself as the consultant consulted by the taking unit would include myself also.' (T102)

Shortly after that passage of evidence Mr Pohl states:

> 'As a consultant who oversees all the registrars, all the consultants involved in trauma and all the registrars under them involved in trauma and all the interns under them in trauma, I cannot physically check everything that everyone has done.' (T102)

14.2. Mr Pohl was asked whether other patients who were on the orthopaedic ward at the time were reviewed, after Mr Murray's death, to ensure that the Heparin protocol they were being given was correct. Mr Pohl answered by saying that he had:

> '... far greater and frequent personal review of those myself. To what degree the registrars did it, exactly in terms of rate, I can't tell you.' (T104)

14.3. Mr Bauze also gave evidence to like effect when he said:

> 'Well, following this particular incident, you know, I discussed it with all of my colleagues and we made sure that we very vigilantly reviewed everything that he did for the remainder of his time on the rotation.' (T46-T47)

14.4. Mr Pohl gave evidence that following Mr Murray's death:

> 'There was a change after the 17th and we followed and followed and it seemed safe. So if it seems safe, I would with the resources I had progressively check less and less and less, presuming that the system was working effectively. That's what I would in all honesty do.' (T108-T109)

14.5. Mr Pohl also gave evidence that he understood that the Royal Adelaide Hospital conducted some form of investigation into Dr Hasan's breach of protocol. He gave evidence at T78 that he recalled that Mr George Potter of the hospital reiterated to all interns the need to follow the protocol. Mr Pohl's evidence is best summarised in the following passage:

> '… if there is an error, it's usually brought to the attention of the people concerned. Mr Bauze informed me, informed the hospital - our department. In dealing with interns, it's usually Mr Potter who would deal with interns and he would deal with that on discussion with the medical education unit at Royal Adelaide Hospital.
>
> What occurred after that if I recall correctly is that Mr Potter got all the interns together and ensured that they all did understand correctly. Now I can't tell you the day, I can't remember after three years but that is my recollection. That is the way that things are addressed. It is usually addressed in conjunction with the Medical Education Department. That's the Medical Education Committee or whatever the term is and the representative of the department will address that and hone down onto it. Then there would be things that are done in one's unit oneself such as re-educating the interns to make sure they understand and ensuring that the next batch understand even more clearly.' (T80-T82)

14.6. There was nothing in Dr Hasan's personnel file to indicate that a thorough investigation was carried out by the hospital following this incident. It would be surprising if the hospital had not carried out some form of inquiry or investigation in the circumstances of this case. Even if the hospital could not be certain that the breach of the protocol caused Mr Murray's death, the very fact that there was a serious breach of the protocol, and that the relevant patient had died at or about the time of the breach, should have been enough to lead to a documented inquiry. No documentation has been produced to show that even some form of audit was carried out on the proper application of the protocol in relation to the other patients. I accept the evidence of Mr Bauze that some manner of check occurred but it is surprising that the inquiries conducted in this matter have not yielded documentary evidence of an audit or other form of check.

15. <u>Was the failure to follow the Heparin regime the cause of Mr Murray's death?</u>

15.1. This was the subject of a considerable amount of evidence, mostly from Mr Pohl. Ms Shaw put the question directly to Mr Pohl. His response was:

> '… only answer would be 'I don't know' because there is no evidence that it would have and there is no evidence that it would not have on the basis of all available published reviews that I have been able to get access to.' (T104)

15.2. Mr Pohl made the point repeatedly that with a scan of all of the literature he could not find a single regime that would report a 100% efficacy. He said:

> '… no matter what you do, you will have a certain failure rate, patients will die.' (T97)

15.3. He stated:

> '… that even with total compliance with everything required, there is not a 100% success. So no one can say death will be prevented, but he said death might be prevented. So now we have to then logically say well, what would be the difference between this dosage of Heparin that is three times what would be achieved elsewhere in other hospitals in other units … No one can say, there is no controlled study, there is no evidence. There's no evidence for, there's no evidence against. ' (T73-T74)

And later:

> 'I cannot say it is and I cannot say it is not, there is no evidence.' (T74)

15.4. On the other hand, Mr Pohl's evidence made it quite plain that during the early period after the accident, between midnight on 1 October 2002 and 6 October 2002 when the Heparin regime was commenced, there was a window during which there was no anti-thrombotic protection. I cannot rule out the possibility that the thrombi which took Mr Murray's life formed during that period.

15.5. At T107 Mr Pohl points to the fact that the post-mortem examination report referred to fresh thrombi and thrombi at least a week old. He said:

> '… there is no treatment with any medication that I am aware of which in trauma can provide a 100% safety. It does not exist. Therefore there is a certain failure rate. We don't know what to do about that. It's a small percentage but that percentage could have - Mr Murray could have fallen within that small percentage … Can I conclude that the treatment received by Mr Murray caused his death? I can't. Logically I cannot do that because if the treatment were correct, it could still happen.' (T107)

15.6. The eMIMS online service contains the following notation in relation to Heparin:

> 'Heparin does not have fibrinolytic activity; therefore, it will not lyse existing clots.'

Therefore, if clots or thrombi had developed prior to the commencement of the administration of Heparin, and there was ample opportunity for that to occur, the subsequently administered Heparin would not have dissolved those clots.

15.7. In the result I am not prepared to find that Mr Murray would not have suffered the embolus which took his life if Dr Hasan had properly administered the Heparin regime.

16. Availability of autopsy findings

16.1. Mr Pohl raised a matter in his evidence which has caused me some concern. He stated (T78) in answer to attempts by Mr Doherty to find out what, if any investigations were carried out after Mr Murray's death, that although he thought that some investigation had been carried out, the results were never conveyed to him. He then stated:

> 'Correct, the results of the post mortem weren't even conveyed to me until many months later. I did not even know what the cause of death was until the agent of the court arrived and only then was I presented with that. This is one of the problems we have in dealing with breakdowns, that there maybe many months that have lapsed before we even can confirm what the problem was and then go back to look at it.' (T78)

16.2. It is always possible for a doctor whose patient has died to contact the pathologist at the Forensic Science Centre who conducted the autopsy and obtain information about the pathologist's findings. Many doctors, I am told, do take advantage of this opportunity. In my view it is in the public interest that doctors whose patients have died while under their care should actively obtain information from the relevant pathologist as to the cause of death (assuming that there is a post mortem). It will only be in rare circumstances that this would not be appropriate. It certainly would have been appropriate in this case. It is surprising that Mr Pohl appeared to assume that it was for others to convey this information to him. I recommend that the Department of Health advise surgeons visiting public Hospitals that they are encouraged to contact the Forensic Science Centre to inquire as to the cause of death in cases where their patients have died and a post mortem has been directed by the Coroner.

17. Issues raised by counsel assisting

17.1. Ms Shaw formulated a number of issues which, in her submission, arise from this inquest. They are as follows.

17.2. First, was Dr Hasan made aware of the protocol and did he in fact understand the protocol?

- I have found that Dr Hasan was shown the protocol and was aware of its existence. I am unable to express a view as to whether Dr Hasan actually understood the protocol. I have found that he was either disingenuous in his interview, or that he did not understand the role and responsibility of an Intern. Because of my inability, in Dr Hasan's absence, to determine whether he was being disingenuous, or genuinely did not understand his obligations, I am unable to express a view as to whether others at the RAH should have noted this issue and done something about it. Obviously if his response at interview was genuine, and he truly had little or no idea as to the level of responsibility that an Intern was expected to accept, then I would have expected that those around him at the workplace would have noticed this and acted decisively.

17.3. Second, who was responsible for monitoring the overall progress of a patient on a protocol such as the pelvic anticoagulation regime?

- The evidence showed that there was a hierarchy of responsibility starting primarily with the Intern assigned to the patient, then moving to the Registrars, then ultimately to the responsible Consultant. The difficulty that arose in this case was that there were three Registrars, and the evidence was that they were collectively responsible for supervising the Interns. Mr Bonig appeared to adopt the position that it was not possible to assign responsibility to any one of them for Dr Hasan's many errors. Mr Pohl very properly accepted ultimate responsibility for supervision of patients under his care, however, it must be accepted that it would not be possible for him to check every action of each intern in relation to each patient under his care. Unsatisfactory as this is, I am left in the position of being unable to resolve the matter of whether there was a failure at an operational level by one or more of the Registrars to adequately supervise Dr Hasan.

- The evidence also showed, as Mr Bonig pointed out in his submissions, that there appear to be at least ten different separate nursing signatures relating to the administration of Heparin to Mr Murray. Mr Bonig was referring to the medication chart, Exhibit C4b, which required that each of the administrations be separately initialled by two nursing staff. One nurse would initial for drawing the dose, and the other would initial for checking that the first nurse had drawn the prescribed dose. None of those nurses observed the errors made by Dr Hasan. I did not take Mr Bonig to be suggesting that the nursing staff bore responsibility for Dr Hasan's errors, nor that they had any obligation to supervise him. His point was made in the context of a submission to the effect that, although the errors might seem obvious in hindsight, they may not have been so obvious at the time. He sought to draw support for this submission from the fact that none of the nursing staff had raised the alarm.

- I do not accept this submission. I do not think that the errors were so obscure that they could not have been noticed by someone exercising a reasonable level of initiative, and a sufficient level of interest in the matter to carry out their duties properly.

- Mr Bonig asked me to refrain from recommending organisational changes to the orthopaedic units for the purpose of assigning responsibility for individual interns to individual registrars. He suggested that there was not sufficient evidence to make such a recommendation. I responded by observing that, as the evidence stood at that stage, Professor Dahlenburg had said that the registrars should take responsibility for the closer supervision by interns of the Heparin regime at an early stage, while on the other hand, there was the assertion that, there being three registrars, it was not possible to assign responsibility for the actions of an intern to a single registrar. I suggested that the matter, if left there, would be adequate to allow me to make findings, and that others could then look at the findings and make what they would of them in relation to the question of what, if any action might be necessary to avoid a repetition of this circumstance in the future. It was Mr Pohl's evidence that a failure of this kind by an intern has not happened before or since Dr Hasan.

- The body most likely to be affected by organisational changes designed to more closely align a registrar with a particular intern for supervision of the intern would

be the Royal Adelaide Hospital. Mr Bonig did not act for the RAH. He indicated that he had taken instructions from Mr Pohl about the matter, and those instructions led to the making of the submission.

- In my view it can hardly be suggested that the RAH was not aware of these proceedings. The Hospital's medical records for Mr Murray had been provided by the Hospital to the court well before the inquest commenced. It must have been within the contemplation of the relevant decision makers at the Hospital that an issue of some significance in this inquest would be the supervision, or lack of supervision, provided by the registrars over Dr Hasan.

- For that reason I am not much moved by Mr Bonig's concerns on behalf of the Hospital. However, I do acknowledge that I might have been assisted had the Hospital presented submissions as to the practicability of methods to improve the orthopaedic unit organisational arrangements to enhance the supervision of interns by the registrars. For that reason, I will refrain from recommending anything specific. I will simply recommend that the hospital conduct a review of the existing structure with a view, having regard to Professor Dahlenburg's evidence, to improving registrar supervision of interns, and to require that responsibility and accountability for the performance of a particular intern be reposed in a designated registrar.

17.4. Thirdly, should the other doctors involved have detected the errors made by Dr Hasan?

- I have already covered this issue.

17.5. Fourthly, did the failure to administer the correct doses of Heparin mean that the treatment never reached or achieved a therapeutic anticoagulant effect as posited by Dr Gilbert?

- The protocol was designed to achieve a therapeutic anti thrombotic effect. The protocol provided that this would not occur until the ATPP level was stable between 28.5 and 33. The highest level that Mr Murray's blood ATPP level reached was 28 on 15 October 2002. The following day it dropped to 25. The fact is that under the terms of the protocol, Mr Murray's treatment never reached a therapeutic anti thrombotic level. It is interesting to note that the ATPP level was

28 on 15 October and only 25 on 16 October. As Mr Pohl said at T99, the level varies. He said a patient can maintain the level and then suddenly it changes. He stated that this is not uncommon. However, I think the overall effect of his evidence is that the expectation of the treatment is that there will be an average improvement such that an anti thrombotic level is eventually reached.

17.6. Finally, would it have been possible to detect the presence of thrombi at an earlier stage.

- Mr Pohl's evidence was that there was no reasonably practicable safe method for the earlier detection of thrombi.

18. Issues raised by Mr Doherty

18.1. Mr Doherty submitted that I should find that if the breach of protocol had not occurred, Mr Murray would not have died. For the reasons previously expressed in these findings, I am not prepared to do that. However, I do acknowledge that it is possible that if the protocol had not been breached as egregiously as it was by Dr Hasan, Mr Murray may not have died.

18.2. Mr Doherty also submitted that I should find that Dr Tadros was remiss in failing to detect the errors that had been made by Dr Hasan. I have dealt with that issue elsewhere in these findings, and for the reasons set out there, I decline to accept this submission.

18.3. I feel constrained to make some observations about the matter of the use of overseas trained doctors in South Australia. While I have not been prepared to find that the breach of the protocol by Dr Hasan was the cause of Mr Murray's death, and while it has not been suggested that there are any other patients who suffered, or who may have suffered, as a result of poor treatment by Dr Hasan, it would be naïve to assume that some comparisons will not be made with the recent experience in other States of poor treatment at the hands of a doctor trained overseas. Of course, there should be no suggestion that the mere fact that a doctor is trained in some place outside Australia, should give rise to any doubts about the doctor's competence. South Australia has the good fortune to have benefited immensely from the work of doctors trained in other countries. However, this case shows that considerable care needs to be taken in ensuring that doctors trained particularly in countries with which the

Australian medical community has limited interaction, are carefully screened and supervised in their early stages of Australian practice. I recommend that the Medical Board of South Australia consider these findings.

19. Recommendations

19.1. I recommend, pursuant to section 25(2) of the Coroners Act 2003 that:

1. The Department of Health advise surgeons visiting public Hospitals that they are encouraged to contact the Forensic Science Centre to inquire as to the cause of death in cases where their patients have died and a post mortem has been directed by the Coroner.

2. The Royal Adelaide Hospital conduct a review of the existing structure of the Orthopaedic Units with a view, having regard to Professor Dahlenburg's evidence, to improving registrar supervision of interns, and to require that responsibility and accountability for the performance of a particular intern be reposed in a designated registrar.

3. The Medical Board of South Australia consider these findings so far as they touch on the registration of overseas trained doctors.

Key Words: Hospital Treatment; Anti-Coagulation Therapy; Deep Vein Thrombosis

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 13th day of October, 2005.

State Coroner