INQUIRY INTO THE FATAL ACCIDENTS AND SUDDEN DEATHS INQUIRY ACT 1976 INTO THE SUDDEN DEATH OF ANNE DENISE CLEGG OR HEFFERMAN

S H E R I F F 'S D E T E R M I N A T I O N

UNDER THE FATAL ACCIDENTS AND SUDDEN DEATHS INQUIRY (SCOTLAND) ACT 1976

INTO THE DEATH OF

MRS ANNE DENISE CLEGG or HEFFERNAN (Date of birth 25.08.48)

Held at AIRDRIE on: 14, 15, 16, 17 and 21 May 2007

SHERIFF'S DETERMINATION

AIRDRIE: 18th June 2007

This Inquiry into the circumstances which led up to the death of Mrs Heffernan on 08 June 2005 was held on 14, 15, 16, 17 and 21 May 2007. The Crown was represented by Mrs Lindsey Dalziel, Procurator Fiscal Depute, Lanarkshire Health Board by Mr Robert Wightman, Doctors Rimmer, Wallers and Litherland by Mrs Helen Kaney and Dr McIlroy by Mrs Laura Donald. Mrs Heffernan's family was not formally represented at the Inquiry but Mrs Dalziel ensured that any points which they wished made or clarified were dealt with. I hope they, as I do, appreciate the thorough, fair and conscientious way in which Mrs Dalziel carried out her task. The high standard displayed by all the solicitors throughout the case helped to clarify the issues which required to be addressed.

The court heard from twelve witnesses including Mr Gregory Heffernan, Mrs Heffernan's husband. At the conclusion of his evidence, which took place on the first day of the inquiry, he raised three particular matters about which he was seeking answers. These were:

1 Why did his wife's condition deteriorate so rapidly in the course of twenty minutes on the morning of 07 June?

2 Why was he not advised that his wife had a skull fracture, information which he only learnt from the police after his wife's death? and

3 Was the warfarin therapy, which he understood was essential for his wife's welfare, continued appropriately while she was in hospital?

A number of other issues arising from the evidence were raised by the Fiscal and the various representatives in their final submissions. I have endeavoured, where it is relevant and within the boundaries permitted by a determination under the Fatal

Accidents and Sudden Deaths Inquiry (Scotland) Act 1976, to respond to Mr Heffernan's concerns and to the issues raised by parties.

Much of the circumstances were not disputed and I am in no doubt that each witness endeavoured to recall matters as he or she recollected them. The passage of time since June 2005 will naturally have affected how each recalled the details. Dr McIlroy returned to Australia in August 2005 and was unaware of many of the concerns arising from the circumstances of 07 June 2005 until the end of 2006. He therefore had less chance to keep matters fresh in his mind.

A copy of the medical and nursing records from Monklands District General Hospital were available and contemporaneous notes and recordings provided a framework of times and findings from which a full picture of the events of 06, 07 and 08 June 2005 was spoken to.

The evidence established that during the afternoon of 06 June Mr and Mrs Heffernan had been in the garden of their home at 108 Tantallon Drive, Coatbridge. Mrs Heffernan consumed a number of gin and tonics. Around 5.00 pm she decided to go into the house but in the course of endeavouring to do this she fell on the slabbed area close to the door leading to the kitchen. She struck the back of her head on an adjacent garden wall. It is not known what caused her to fall.

Mr Heffernan, who was collecting washing from the line, found his wife unconscious on the ground. She was bleeding profusely from a head wound. An ambulance was sent for and arrived seven minutes later at 5.24 pm. After her condition had been stabilised she was taken to Monklands District General Hospital Accident and Emergency Department arriving there at 5.47 pm.

The Scottish Ambulance Service notes of Mrs Heffernan's case (p.64 of Production 1, the Hospital Records) records the staff's findings as "Patient lying on ground in back garden. Fell and sustained head injury. Laceration to back of head. Husband says patient was unconscious for 2 - 3 minutes." There is also noted "Drinking heavily today." Initial readings are recorded including a pulse of 96, blood pressure of 166/123 and a Glasgow Coma Scale finding of 15/15. The pupils of both eyes are noted as normal. The fact that she was on Warfarin is specifically recorded.

On her arrival at the hospital Mrs Heffernan was seen by a triage nurse and further recordings were made. Her pulse was now 84, her temperature normal as were her pupils; blood pressure was 169/100 and again her Glasgow Coma Scale (GCS) reading was 15/15. There is a note recording Mrs Heffernan's use of Warfarin.

At about 7.20 pm she was seen by Dr David Rimmer, who was then a Senior House Officer in the Accident and Emergency unit. He recalled Mrs Heffernan from the Cardiac Unit where she had previously undergone a heart valve replacement. As a result of this she required to take Warfarin, a drug intended to thin the blood and diminish the chances of a clot developing. A recognized side effect is that when a warfarin user sustains a cut that it is more difficult than normal to stem the flow of blood. This is because the normal clotting mechanism has been deliberately lessened.

A blood sample taken from Mrs Heffernan around 7.20 pm showed that her INR (the rate for measuring blood clotting) was 2.6 whereas the figure for a person not receiving an anti coagulant such as Warfarin would be 1. The figure of 2.6 is towards the lower end of the accepted range for a patient on an anti coagulant and *per se* would give no cause for concern.

It is known and recognized within the medical and nursing professions that a person prescribed anti coagulants who sustains a head injury is more susceptible to intracranial bleeding.

Dr Rimmer ascertained that Mrs Heffernan was unsure about the exact circumstances of her fall, "that she had been drinking heavily today" and was unclear whether she had lost consciousness. He was however aware of the terms of the ambulance report which recorded that her husband considered that she had been unconscious for two to three minutes. Mrs Heffernan complained of a dull headache and nausea but had no limb weakness or visual problems. He recorded that she was on Warfarin (this is noted twice in his initial entry). Her GCS was 15/15 and her tone power and reflexes in all four limbs were normal. Her pupils were equal and reacted normally to light and her cranial nerves were intact.

Dr Rimmer thereafter arranged for the nurse to close the wound and awaited the result of the blood tests which he had taken. One of the consultants for the unit, Dr David Litherland, happened to be in the unit at the time and spoke to Dr Rimmer who reported his initial findings. Dr Litherland collected the result of the blood tests and passed them to Dr Rimmer and they discussed Mrs Heffernan's case. Dr Litherland agreed with Dr Rimmer's conclusion that it would be appropriate to obtain a skull X-ray and that there were insufficient grounds for at that stage seeking a CT scan.

In the meantime the nursing staff were experiencing difficulties in closing the wound because of the flow of blood. Dr Rimmer therefore returned to the room where Mrs Heffernan was and examined the injury site again. He was able to confirm that there was no evident sign of a fracture which could be ascertained by touch. By applying pressure the flow of blood was stemmed and a nurse Melanie Johnston closed the wound using six sutures and three staples. Although the haemorrhage was reduced there was still slight bleeding and a pressure bandage was applied.

Mrs Heffernan thereafter had a skull X-ray and the film was examined by Dr Rimmer. The film was a poor one and he failed to recognise that Mrs Heffernan had a skull fracture. The site of the fracture was partly obscured by the presence of the staples and the film was difficult to interpret. The following day it was viewed by a consultant radiologist, Dr Kenneth Wallers, who also failed to appreciate that the film showed evidence of a skull fracture. His report (page 60 of Production 1) indicates "no vault fracture demonstrated."

Although there is no time on the report Dr Wallers indicated that it would not be completed until lunch time on 07 June by which time, due to the dramatic change which had occurred around 11.20 that morning, it would have made no difference whatsoever to the treatment or diagnosis of Mrs Heffernan's case.

Around 10.00 pm on 06 June Mrs Heffernan was transferred from Accident and Emergency to the Emergency Receiving Unit (ERU). This is a thirty-four bedded ward which has a small number of beds reserved for patients who are transferred from A&E. The majority of the patients in the ward had been admitted directly as a result of GP referral. These other patients do not come under the care of the accident and emergency doctors whereas patients such as Mrs Heffernan who have been transferred from A&E remain the responsibility of the A&E medical staff.

The ERU is adjacent to A&E and if nursing staff wish to consult an A&E doctor about a patient for whom the A&E medical staff remain responsible, they can either telephone or walk through to speak to the doctor. The nursing staff in ERU are responsible for all the patients and there is no division as applies in relation to medical personnel between those patients transferred from A&E and the remainder.

Because Mrs Heffernan had been transferred from A&E she remained the responsibility of the medical staff in A&E and accordingly until 12 midnight when Dr Rimmer went off duty he and the other doctors in A&E had medical responsibility for her care. During that time there was an SHO grade 3 (a more senior and experience SHO than Dr Rimmer) on duty. It is believed that he was a Dr Briggs but he appears to have had no part in the care, treatment or diagnosis of Mrs Heffernan.

During the period between 10.00 pm and midnight Mrs Heffernan gave no cause for concern and Dr Rimmer went off duty having instructed that Mrs Heffernan should be subject to regular neurological observations and detained in the ward overnight.

On her transfer to ERU neurological and other observations were continued by the nursing staff. She continued to have a GCS of 15 apart from at 23.30 hours when it dipped to 14. This was attributed to her being naturally sleepy due to tiredness and not in any way due to a diminution in her neurological state, a conclusion which medical witnesses, including two experts agreed was reasonable. Her blood pressure, temperature, her pupils and limb movement gave no cause for concern. Although the appropriate protocol could be interpreted to mean that Mrs Heffernan's readings were taken hourly there was a two hour gap between the reading at 21.50 and 23.30 and another two hour gap before a further reading at 1.50 am. This was due to the considerable work which required to be carried out in a busy ward. It has no relevance to Mrs Heffernan's care in that all the readings were normal.

At 1.50 am Mrs Heffernan complained of feeling sick and vomited. There was a dispute in the evidence between two nurses both of whom claimed that they had been present when this happened and been responsible for the taking of the readings at 1.50. Staff nurse Louise Dass had overall charge of the nursing staff in ERU that night and staff nurse Lorna Smith had direct care of the side of the ward in which Mrs Heffernan was located. Both believe that they had made the entry for 1.50 on the chart (page 32 of Production1) but it was accepted that the entry "vomited" had been made by staff nurse Dass.

Mrs Dass asked Lorna Smith to go to see the duty doctor in A&E with a view to obtaining a prescription for an anti emetic. She also intended that Lorna Smith should advise the doctor of Mrs Heffernan's condition, that she was quite pale and

that because she was a head injury patient on Warfarin, that the doctor should be aware of the position.

The SHO grade 3 on duty within A&E at that time was Dr David McIlroy He had been a doctor for seven years and had experience in A&E emergency medicine and intensive care before returning to Monklands to work as an SHO grade 3 in A&E. An SHO grade 3 is a more experienced and senior doctor at SHO level. Dr McIlroy had never seen Mrs Heffernan and because the ERU is only adjacent to A&E he was not conversant with her case. There was however a large white board within A&E which recorded her name and particulars and would have indicated that she was being kept overnight in ERU because of a head injury. It would also state that she had been the subject of a skull X-ray.

Nurse Smith advised the doctor that Mrs Heffernan, a patient in ERU, who was suffering from a head injury from the previous afternoon and who had been drinking alcohol, had vomited. She asked him for a prescription for an anti emetic and he made the necessary entry on the drug cardex which she had with her. She told him that the GCS reading was 15 and that all other figures and signs were normal.

Nurse Smith believes that she advised Dr McIlroy that the patient was on Warfarin but he has not recollection of this. In the course of her evidence Nurse Smith was clear that it was not her intention that Dr McIlroy should come to see Mrs Heffernan at that time and as there had been only one episode of vomiting she considered that it was not necessary for Dr McIlroy to see the patient at that point.

For his part, Dr McIlroy believes that he advised Nurse Smith that he would be willing to visit Mrs Heffernan at any stage if it was necessary. She was however merely requesting a prescription which required a doctor's signature and was showing no indication of anxiety or concern from a nursing point of view. He continued with his work in A&E and heard nothing further.

The A&E departments at Monklands is and was a busy one and there is a steady flow of patients who require to be assessed, attended and treated. Both the medical and nursing staff in A&E work constantly.

In ERU Mrs Heffernan's vital signs continued to be recorded and after she had received the anti emetic which was given intravenously she appeared to settle. Nurse Dass, around 2.40 am, wrote a note on the nursing records. Although timed 240 it relates to the position initially at 1.50 and records the findings at that time rather than the later observations taken at 2.30. The entry states: "patient vomited + + bile, looks pale, sweaty, drowsy." In her evidence she explained that the + + related, she believed, to the bile, that there had only been one incident of vomiting and that the references to being pale and sweaty, she believed related to the nausea and vomiting which had occurred at 1.50. She confirmed that after receiving the anti emetic Mrs Heffernan appeared to be settled and the reference to "drowsy" she did not attribute to the head injury but to natural tiredness. The observations at 2.30 am were normal and Mrs Heffernan's GCS remained at 15/15.

Around 5.00 pm Mrs Heffernan vomited again. There is no record of this in the nursing records but there was clear evidence given in court that this had occurred. It

contradicts a subsequent nursing record made by Nurse Jacqueline Houston, who around 6.00 am, recorded "no further vomiting."

As a result of the second vomiting at 5.00 am Nurse Dass telephoned through to A&E and spoke to a member of the nursing staff. She reported the second incident of vomiting and requested that Dr McIlroy should come to see the patient. That message was not passed to Dr McIlroy, who was not made aware that there had been a further problem. The anti emetic which had been prescribed by him and given to Mrs Heffernan should have relieved her nausea for up to eight hours. The fact that she vomited again within three hours was significant.

Nurse Dass did not make any further phone call or request for a medical opinion. She believed that Dr McIlroy could be busy within A&E and did not expect the doctor to come immediately. However, by 8.00 am when she went off duty no doctor had visited Mrs Heffernan and no doctor was aware of the developments since the anti emetic had been prescribed at 2.00 am.

In her note in the records (page 50 of Production 1) Nurse Houston recorded that Mrs Heffernan remained vague as to times and that her GCS remained at 15/15. She added "please observe closely" and referred to the neurological observation chart within the records.

A summary of each (or at least most) of the patients within ERU was prepared by the night nursing staff for those taken over at 8.00 am. This is not part of the hospital records and it is not known what, if anything, it recorded in relation to Mrs Heffernan.

In the course of the morning Mr Heffernan telephoned the ward and was advised that he could visit his wife. He was given no cause for concern and at the point of that telephone call there was no apparent problem. No doctor however had seen Mrs Heffernan since Dr Rimmer had arranged her transfer to ERU at 10.00 pm the previous night and her care relied entirely on nurses at that point.

Around 11.00 am Mrs Heffernan complained of feeling sick and was nauseous and a message was passed to A&E for a doctor to see her. Dr Derek Scollen, an SHO grade 3, attended at 11.20 am and found that Mrs Heffernan was deeply unconscious and that her GCS which had been recorded at 15/15 at 11.00 am was now 4/15. He arranged through the consultant for an immediate CT scan and this sadly revealed that Mrs Heffernan had sustained a very extensive acute on subacute right fronto-temporo parietal subdural haematoma. The full report on that film (page 62 of Production1) was transmitted to Dr Scollen who immediately contact the neurological unit at the Southern General Hospital and arranged for the CT scan to be transmitted there. It was reviewed by the medical staff at the neurological unit who confirmed that nothing could be done to reverse the situation and that no treatment or surgical intervention was possible.

Because it was appreciated that the anti-clotting effect on the blood arising from the ingestion of Warfarin increased the extent of the bleeding medication was prescribed and given with a view to reversing its effect. This was appropriate but the effect of the haemorrhage which had already taken place proved to be irretrievable.

Thereafter, Mrs Heffernan was transferred to a single room, was appropriately nursed and cared for but died around 3.50 am on 08 June.

A post-mortem was carried out by Dr Julie McAdam, a consultant pathologist at the University of Glasgow Forensic Medicine and Science department. She concluded that the cause of death was an acute subdural haemorrhage due to a fall and that a potential contributing cause was Warfarin therapy.

Dr McAdam, in her evidence to the Inquiry, explained that, in her opinion, there had been a continuous leak within the brain area following the fall and that until the area around the brain became full of leaked blood it was possible for the body to compensate for the effect of this. The GCS readings which appeared normal throughout the night did not mean that no such leak was occurring. In her opinion the catastrophic collapse between 11.00 am and 11.20 am on 07 June, while not usual, was consistent with her findings at post-mortem.

She concluded that as a result of her fall Mrs Heffernan had sustained a fracture of the skull (which was evidenced by the CT scan), that there was a contra-coup injury (the leak was on the opposite side of the brain from where the head injury had occurred) and that the blood had thereafter leaked into the cavity around the brain. It had thereafter gradually filled it until a point was reached where the brain for lack of space was compressed causing the dramatic collapse between 11.00 am and 11.20 am.

Dr McAdam was clear that this was not a situation where a dramatic and sudden leak had occurred around 11.00 am. Her post-mortem findings contradicted this, and she also refuted a suggestion made by another witness that the subarachnoid haemorrhage could have predated the fall and might have been a cause of it. Dr McAdam was clear that the haemorrhage was a direct result of the injury sustained in the fall. She was also clear that because Mrs Heffernan had been on Warfarin, a totally necessary drug because of her heart valve replacement, that the bleeding within the brain would be naturally greater because the effect of the blood clotting mechanism would be reduced.

I accept as correct Dr McAdam's assessment of the timing and cause of the haemorrhage. I also accept her view as to the significance of the Warfarin therapy in increasing the likelihood of a substantial internal bleed following such a head injury.

The Procurator Fiscal at Airdrie was advised of the circumstances of Mrs Heffernan's death, and it was during the subsequent enquiries that Mr Heffernan learnt for the first time that his wife had sustained a fractured skull. Neither Dr Rimmer nor Dr Wallers had realized this but because of the increase clarity and the nature of a CT scan this showed the presence of the fracture. It was reported as such by Dr Pitcher, the consultant radiologist who read the CT scan films.

The radiation to which a patient is exposed in the course of a CT scan is approximately fourteen times as much as that of a normal skull X-ray and this is one of a number of factors which influences doctors in deciding whether it is necessary to obtain a CT scan. Different hospitals have different procedures in relation to the ordering of CT scans. In 2005 within Monklands a CT scan could only be ordered if

requested by a consultant. This is not a relevant factor in relation to Mrs Heffernan's case as it was clear from the evidence given by Dr Litherland that had he wished or considered it appropriate to ask for a CT scan whether it was during the night or otherwise he would have done so. It was also evident from the evidence of Dr Wallers that the radiologist on duty at Monklands, had a CT scan been requested, invariably made the necessary arrangements for it to be carried out.

It was also clear that had either Dr Rimmer or Dr McIlroy considered that there was any reason to seek a CT scan because of a change in Mrs Heffernan's condition or for any other reason they would have contacted Dr Litherland who would have authorized the request for the procedure.

Accordingly, although it was queried in the course of the Inquiry as to whether the practice in Monklands of having all requests for CT scans vetted by a consultant might have been a cause for Mrs Heffernan not having a CT scan earlier, the evidence established that this was not so. A deliberate decision was made by Dr Rimmer and Dr Litherland based the history on Dr Rimmer's examination and the neurological findings that it was not necessary to obtain a CT scan on the evening of 06 June. A skull X-Ray, which it was believed produced a negative result, was undertaken.

It was clear from the evidence which I heard that if at any point in the course of the time that Mrs Heffernan was within either A&E or the ERU that it had been thought necessary to seek a CT scan, that this could and would have taken place. The procedures which existed in 2005 did not in any way inhibit the medical staff from seeking a CT scan if it was considered appropriate. I am satisfied that if any member of the medical staff had wished a CT scan of Mrs Heffernan undertaken at any time during the night of 06 - 07 June 2005, that it could and would have been carried out.

Although my conclusions in answer to Mr Heffernan's three questions do not fit into the matters which require to be addressed in terms of Section 6(1) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976, the evidence did provide certain information pertinent to his concerns.

Although it is very unusual for the condition of a patient with an acute sub-dural haemorrhage to deteriorate so suddenly and rapidly as occurred to Mrs Heffernan, it is not unknown. There was evidence from Dr McAdam and from Dr Philip Munro, a Consultant in Emergency Medicines at the Southern General Glasgow that it is perfectly possible for a patient to have normal neurological readings including a Glasgow Coma Scale (GCS) reading of 15/15 and to be in a deep coma within twenty minutes with a GCS of 4/15.

Accordingly, I have concluded that the sudden deterioration in Mrs Heffernan's condition was a natural consequence of the accumulated leaking blood filling the area around her brain.

No evidence other than Mr Heffernan's was available as to what explanation and details were given to the family and by whom when Mrs Heffernan's condition deteriorated or after her death. It was clear that until the result of the CT scan was known, that it had not been appreciated that Mrs Heffernan had a skull fracture. By

11.37 am on 07 June when the CT scan was sought the damage was so great that nothing could be done to save Mrs Heffernan's life. It may be, and on this I require to speculate, that whichever members of the medical and nursing staff had the responsibility of telling her family that her condition was beyond hope, chose not to go into more details.

While it is regrettable that Mr Heffernan only learnt of the fracture skull from a police officer later, I am entirely satisfied that any failure to fully inform him earlier was not due to an attempt to conceal anything. I am also totally satisfied that by the time the existence of the fracture was reported, it was too late for anything to be done.

The third question posed by Mr Heffernan related to whether despite his repeatedly drawing it to the attention of the A&E staff, his wife's Warfarin therapy had been continued appropriately. The medical and nursing records contain repeated reference to Mrs Heffernan being on Warfarin. Dr Rimmer, Dr Litherland and the nurses all confirmed that they knew the correct position. When it was shown that there was an internal haemorrhage following the CT scan correct measures were initiated to lessen the effect of the Warfarin because it could be worsening the leak.

It may be that Mrs Heffernan's family have misunderstood the reference to Warfarin therapy being a contributory factor in Dr McAdam's report. By this she was indicating that the fact that Mrs Heffernan was on an anti-coagulant (Warfarin) increased the extent and nature of the haemorrhage because the blood's clotting mechanism was diminished. It was not, in any way, a criticism of the doctors who initially prescribed the Warfarin which was essential because of her heart condition. The INR reading of 2.6 showed that the Warfarin therapy was effective and had achieved a blood thinning within the accepted range.

It was equally not a criticism of Dr Rimmer or the nurses who were aware of her being on Warfarin. It is furthermore not a criticism of the decision to attempt to reverse the effect when the existence of inter-cranial haemorrhage was evident.

Mrs Heffernan's Warfarin therapy was carried out appropriately within both A&E and the ERU. It is an unfortunate consequence of the taking of an anti-coagulant (which in Mrs Heffernan's case was essential for the welfare of her heart) that any bleed including an intra-cranial one is both more likely and will be more substantial than normal.

Section 6(1) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 provides:-

"At the conclusion of the evidence and any intromissions thereon or as soon as possible thereafter, the Sheriff out the following circumstances of the death so far as they have been established to his satisfaction:

(a) where and when the death and any accident resulting in the death took place

(b) the cause or causes of said death and any accident resulting on the death

(c) the reasonable precautions, if any, whereby the death and any accident resulting in the death might have b

(d) the defects, if any, in any system of working which contributed to the death or any accident resulting in th

(e) any other facts which are relevant to the circumstances of the death."

Mrs Dalziel, Mrs Kaney, Mrs Donald and Mr Wightman each produced written submissions at the adjourned hearing on 21 May. They amplified these in their speeches.

All were agreed that as to time, date and place of death and that the cause of death was as certified by Dr McAdam. All were agreed that the cause of the accident which resulted in Mrs Heffernan's admission to hospital was a fall at 108 Tantallon Drive, Coatbridge around 5.00 pm on 06 June.

Mrs Dalziel invited me to make findings in terms of Section 6(1)(c), (d) and (e) of the Act whereas each of the other solicitors argued that so far as the personnel which they each represented were concerned that no findings in relation to sub-sections (c) or (d) were appropriate. In relation to sub-section (e) it was suggested that if any findings were necessary they should be general and reflect the changes in procedures which had occurred since June 2005.

I consider that the best way to reflect the various points of view is to enumerate the principal arguments put forward by Mrs Dalziel and the counter argument listed by those representing particular doctors and the Health Board. Thereafter, I will endeavour to explain why I have reached the conclusion I have on each point.

Mrs Dalziel initially contended that the term "accident" in sub-section (b) could be interpreted sufficiently widely as "anything that happens" so that the relevant events at Monklands District General Hospital would fall to be regarded as part of the "accident."

I have carefully considered this but feel that it is stretching the meaning of the word "accident" as used in this Act too far. I do not accept that "accident" as mentioned in Section 6(1)(b) means more than the dictionary definition of "an unforeseen or unexpected event, a mishap." I am therefore of the view that the "accident" in the finding must relate solely to the fall at 108 Tantallon Drive.

I do not think that this is of particular importance as any reasonable precautions whereby the death "might have been avoided" can be encompassed in the following sub-section. Furthermore, the all embracing final sub-section allows for findings which are "relevant to the circumstances of the death." I therefore do not believe that by rejecting Mrs Dalziel's initial point I have in any way restricted the terms of the determination in this case.

Mrs Dalziel invited me to find that in terms of Section 6(1)(c) that Mrs Heffernan's death might have been avoided if a CT scan had been taken earlier. She suggested that this was a reasonable precaution.

She divided her argument into two parts. Firstly, she contended, that there should have been a CT scan following the patient's admission to A&E on the evening of 06 June. Mrs Heffernan had sustained an injury to the back of her head which required six stitches and three staples, she was on Warfarin and the bleeding from the full thickness scalp laceration was such that a pressure bandage was required. In addition, she was reported as having been unconscious, was unclear as to the circumstances of her fall, was nauseous and had a dull headache. All these factors should have, on one view, pointed to the need for a CT scan. This would have revealed the presence of the skull fracture, have alerted everybody involved in her care to the need to respond actively to any change in her condition. It would therefore have been the initial step which should have alerted staff later when Mrs Heffernan vomited to the need for an urgent assessment and, if need be, surgical intervention.

Mrs Kaney, on behalf of Dr Rimmer and Litherland, agreed that CT scans were not ordered in every case of a head injury in Monklands. Mr Wightman, for the Health Board, accepted this. Both however pointed to evidence that while this may be the practice in some hospitals, and Dr McIlroy indicated it was normal in Australia, it could not be validly contended that a blanket policy of a CT scan for every head injury case was appropriate. The substantial increase in exposure to radiation is just one factor which requires to be considered in assessing each individual case.

Dr Philip Munro, as an experienced Consultant in Emergency Medicine based in the Southern General Glasgow agreed that not every A&E department would have ordered a CT scan based on the findings and history following Mrs Heffernan's admission. He was uncertain whether his department would have immediately initiated a request for a CT scan. As occurred in Monklands he considered it reasonable that the decision as to whether a CT scan was required could be deferred to await developments.

Dr Munro referred to the SIGN guidelines on the Early Management of Patients with a head injury (Production 12). They are summarized and adapted for local use in Monklands in the Head Injury Protocol (Production 10). Its terms did not alter the principles to be applied as specified in the SIGN guidelines.

The National Clinical Guidelines (SIGN = Scottish Intercollegiate Guidelines Network) provides a detailed series of directions. In Paragraph 5.4.1. it states "CT scanning is appropriate only if a higher risk is indicated by the presence of other features". It adds:- "The additional feature most clearly justifying CT scanning is the presence of a skull fracture. In the absence of evidence of a skull fracture, other features that may make CT scanning appropriate include persisting serious headache, vomiting or developing neurological signs, and treatment with anti-coagulants."

When Dr Rimmer assessed Mrs Heffernan's case she did not, as he interpreted the X-ray, have a skull fracture, she did not have a persistent serious headache, she was not vomiting and her neurological signs were normal. He knew she was on Warfarin. That alone, in my view, and based on the evidence of Dr Litherland who had been directly involved in the consideration of the case, as well as the opinion of Dr Munro, did not justify an immediate CT scan.

I accordingly do not consider there is evidence to justify a finding that a reasonable precaution whereby the death might have been avoided would have been the ordering of a CT scan around 7.30 pm on 06 June. There were insufficient clinical and other reasons to justify it and Dr Rimmer's actions in instructing her admission to ERU overnight and in requiring continued neurological assessment is supported by Dr Munro's evidence.

Dr Munro, in his report, (Production 6) made a number of specific and implied criticisms of Mrs Heffernan's care. Some of these he did not persist in once he had been appraised of the correct position. He had the responsibility of producing a report based on his interpretation of the notes and without seeing or hearing any clarification from the clinicians involved. When he was appraised of what had occurred in A&E, who had been present, what tests and assessments had been made and in particular that Mrs Heffernan's X-ray had been considered by Dr Rimmer before he had decided on the ensuing care he modified certain of his comments.

I have based my conclusions on the terms of the evidence which he gave rather than his initial conclusions in Production 6. On certain matters however he remained critical of how Mrs Heffernan's care had been undertaken. In the light of his reasoned assessment I have in respect of each aspect reached a view as to whether the conclusion is justified.

The second part of Mrs Dalziel's contention that I should make a finding in terms of sub-section (c) relates to the period after 1.50 am on 07 June. She argued that if a CT scan been undertaken after Mrs Heffernan vomited then the presence of a fracture would have been evident and, more importantly, it would have been apparent that there was an intracranial leak which was on-going.

I am satisfied that had Mrs Heffernan's true condition been appreciated as a result of a CT scan being taken in the early hours of 07 June that it is likely that steps could have been taken to prevent her death. I have reached this conclusion having heard the evidence given by Mr Eric Ballantyne, a Consultant Neurosurgeon from Ninewells Hospital, Dundee, who gave expert evidence as to the steps which could be taken by surgical intervention to tackle an on-going intracranial haemorrhage.

I did not understand him to indicate other than that. What he spoke to was based on what he assessed to be her condition in the early hours of the morning. Had she been transferred timeously to a neurosurgical unit (in this case the Southern General Hospital, Glasgow) that facilities and trained personnel would be available there to undertake an urgent surgical intervention should this be necessary.

I therefore believe that it is established that had a CT scan been carried out in the early hours of 07 June that it is likely that Mrs Heffernan would have been transferred to the Southern General Hospital and there the facilities were available for the necessary surgical intervention which might have saved her life.

The terms of sub-section (c) however require me to be satisfied that the undertaking of a CT scan at that time was "a reasonable precaution." While I may have concluded based on the evidence that the lack of a CT scan at that time is a matter

whereby "the death might have been avoided", it is, it was suggested by Mr Wightman, Mrs Donald and Mrs Kaney more difficult to suggest that without hindsight that this was a reasonable precaution based on the information and evidence available at the time.

Mrs Kaney, in an interesting argument, referred me to the views expressed by Sheriff Brian Kearney in the Determination following the death of James McAlpine in 1986. In that case Sheriff Kearney appeared to suggest that in assessing whether the death "might have been avoided" that the court should be looking to the direction of lively possibilities. This might mean less than "would on the probabilities have been avoided."

Sheriff Kearney was dealing with a particular set of circumstances in relation to a young boy's death during which what was believed to be a routine cosmetic procedure. The extent of any informed consent as well as surgical techniques required to be assessed. Risk factors and issues of informed consent do not arise in this case. I therefore consider that the appropriate test to be applied as to whether there should be a finding that there was "a reasonable precaution" in Mrs Heffernan's case must be based on a balance of probabilities.

I do so by founding on what I understand to be the basis on which determinations have been reached over the years and, in particular, in the light of Section 4(7) which specifically indicates that "... the rules of evidence [and] the procedure ... shall be as near as possible those applicable in an ordinary civil cause."

Sub-section (c) is governed by the opening part of Section 6(1) that before including a matter in a determination a Sheriff requires to find that the particular circumstance has been "established to his satisfaction."

The obligation to only include in a Determination a matter which has "been established" sets, in my view, a test higher than "a lively possibility" so far as the "reasonable precaution" element is concerned.

The sub-section however allows a Sheriff once the existence of a reasonable precaution is established, to consider whether the death "might" have been avoided. As Sheriff Principal Mowat stated in his determination after the Lockerbie Disaster that is "lower than for a finding of negligence."

It is therefore necessary for me to assess on the information available in the early hours of 07 June, whether it was a reasonable precaution that a CT scan should have been sought. Thereafter, if necessary, I require to decide if the implementation of such a reasonable precaution "might" have resulted in the death being avoided.

As I have already indicated, I am entirely satisfied that if a decision had been made to seek a CT scan in the early hours of 07 June that it would have been undertaken. Accordingly, the question must be whether the obtaining of such a scan would have been reasonable in all the circumstances.

By 1.50 am at least 81/2 hours had elapsed since Mrs Heffernan's fall. While she had clearly taken more alcohol than was normal for her I do not believe that 81/2

hours after her fall (and therefore at least that time since she had last taken any alcohol) that her vomiting should have been merely attributed to alcohol ingestion or to some other reason that did not connect with her head injury.

The Sign Guidelines make it clear that a patient such as Mrs Heffernan who had sustained a head injury and who was nauseous, had vomited and was in addition on Warfarin, falls into the category of patient for whom a CT scan requires to be considered.

The existence of vomiting, the apparent return of nausea, (it does not appear to have been mentioned in earlier nursing notes after her transfer to ERU) as well as the passage of time since her head injury are all factors which should have pointed to the need to obtain a medical examination at the time. All the points carefully made by Mrs Dalziel in the argument which I have rejected in relation to the failure to have a CT scan at 7.30 still existed and have added to them the three additional factors of vomiting, returned nausea and the passage of time. In addition, any effect of excessive alcohol will have diminished in the same time span.

For these reasons I consider it was a reasonable precaution whereby this death could have been avoided had a CT scan taken place in the early hours of that morning.

The fact that it did not take place cannot attribute to Dr McIlroy. He was unaware of the full circumstances and it is clear from Nurse Smith's evidence that she did not expect him to come to the ward to see the patient nor was she concerned by the patient's condition to such an extent as to consider it appropriate to draw to Dr McIlroy's attention the apparent change in the patient's condition. Because Dr McIlroy had never seen Mrs Heffernan and was not familiar with her case he could not be expected to appreciate the significance of the various factors which pointed to the necessity for medical intervention at that stage. In particular, I am not satisfied that Nurse Smith specifically drew to his attention that Mrs Heffernan was on Warfarin. Had she done so I believe, based on my assessment of him, that he would have regarded this as an important factor.

Dr McIlroy did not know the time gap between the end of Mrs Heffernan's drinking and her vomiting. As reported to him she was a patient with a head injury who had been drinking heavily and been sick. Without more detailed information or apparent concern from the nursing staff who were caring for her, his decision to offer to visit, if required, is reasonable.

Lorna Smith appeared in the witness box to be quiet and verging on the diffident. I believe that her quiet manner resulted in her not indicating to Dr McIlroy the full significant factors to enable him to make an informed assessment. He was given the clear impression that he was merely been asked to authorize an anti emetic. In her evidence Nurse Smith agreed that she was not seeking or expecting Dr McIlroy to come to the ward. I believe that because that was her expectation she did not tell Dr McIlroy the full background to Mrs Heffernan's case nor bring to his attention any relevant concerns.

The lack of a CT scan at this time was therefore due to the failure by the nursing staff to actively seek a medical opinion. Had Dr McIlroy had an opportunity to appreciate the true position and had he been to see Mrs Heffernan then I believe that he would have put in hand the necessary steps to have a CT scan undertaken.

In Dr McIlroy's case I am particularly certain that this would have occurred because based on his experience elsewhere the use of a CT scan in a skull-head injury was not unusual and given any cause for concern he would, in my opinion, have taken the necessary steps to have it put into effect.

As I have indicated, I accept Dr Litherland's evidence that had he been contacted during the night by Dr McIlroy seeking authorization for a CT scan, he would have given the necessary approval. Based on the evidence of Dr Wallers such a CT scan would have taken place during that night. A consultant radiologist was on call and would have attended at the hospital to facilitate the procedure.

It may be that the nurses in the ERU were deceived by the normal neurological findings. The fact that Mrs Heffernan's GCS findings continued to be normal may have misled them into believing that her condition could not be deteriorating but sadly subsequent events showed that it was. It may also be that the system which operated whereby a patient such as Mrs Heffernan transferred from A&E remained under the medical care of A&E doctors hampered the situation further. I shall return to this point later in my Determination as I think it is an important factor which may require to be addressed in connection with the practice within Monklands District General Hospital.

If I am incorrect in my belief that it would have been a reasonable precaution for a CT scan to take place in the early hours of the morning as a result of the vomiting episode at 1.50 I am totally satisfied that steps should have been taken following the vomiting at 5.00 am. It is difficult to understand why this episode is not recorded in the nursing notes. It is equally difficult to understand why Nurse Dass who correctly attributed some significance to this and sought the help of a doctor did nothing to follow up her request when she received no response. She must have been aware that the A&E department in Monklands is a busy one and she, in her evidence, accepted that she did not necessarily expect Dr McIlroy to attend immediately. When however no doctor had been to the ward when she went off duty at 8.00 am it is difficult comprehend why she had done nothing to contact A&E again or alternatively to seek a medical opinion from one of the doctors allocated to the ward and responsible for other patients.

It is equally difficult to understand how Nurse Jacqueline Houston could have recorded in the notes "no more vomiting" when this was incorrect. Somewhere there was a failure in communication amongst the nurses as to Mrs Heffernan's state. While all seem to have been impressed by her continued normal neurological signs, none appear to have been fully aware that such signs could persist notwithstanding an on-going deterioration from an intracranial haemorrhage. None of the nurses appear to have adequately appreciated the significance of the vomiting episodes and while Nurse Dass undoubtedly did endeavour to contact a doctor at 5.00 am she did nothing to follow it up. Given the busy state of the A&E unit she was aware that her message might not (as indeed it did not) reach the doctor concerned.

There was considerable discussion based on the evidence given by Mr Ballantyne as to the timescale which would be involved from the taking of a CT scan before a patient could be transferred to the Southern General Hospital thereby enabling surgical intervention to take place. It is difficult to speculate as to what would have happened had a doctor seen Mrs Heffernan sometime after 5.00 am, ordered the CT scan and that scan revealed the position. It would have been necessary for the doctor to visit Mrs Heffernan and decide that a CT scan was necessary. That doctor (presumably Dr McIlroy) would then have contacted Dr Litherland who would have immediately have contacted Dr Wallers who would have agreed to the CT scan.

Dr Wallers, in his evidence, explained that his practice would have been to contact the hospital and arrange for the equipment to be warmed up while he was travelling to the hospital. I understood that it would take up to twenty minutes for the machine to be ready. Dr Munro confirmed this. Dr Wallers would able to reach the hospital within that time period. He would then have conducted a CT scan and assessed the results immediately. It is difficult to speculate how long all this procedure would have taken given that until Dr McIlroy was free from A&E and could visit the patient the timescale does not start to run.

I am however satisfied that had Nurse Dass managed to get her message to Dr McIlroy around 5.00 am or even if she had followed it up within the next forty-five minutes which would have been reasonable then the result of a CT scan would have been available by 7.00 am at the latest and that this would have given sufficient time for Mrs Heffernan to be transferred to Glasgow.

Mr Ballantyne and Dr Munro pointed out that such a transfer would not necessarily have been treated as an emergency because the leak might not have reached a critical stage. It could have taken up to forty-five minutes to reach the Neurological Unit at the Southern General Hospital. This period of time would be preceded by the time required to prepare Mrs Heffernan for transfer and for the ordering of an ambulance.

Taking into consideration all these factors however I believe that Mrs Heffernan would have been in the Southern General in sufficient time for a neurologist and neurosurgeon to make the necessary critical decisions in sufficient time before 11.00 am when her condition deteriorated so dramatically within the ERU.

Mr Wightman, and in this he found support from his solicitor colleagues, contended that I should not be prepared to state on a balance of probabilities, that had the decision been taken to authorize her transfer after 7.00 am to the Southern General Hospital that by the time Mrs Heffernan reached there and her condition was assessed by the doctors in that hospital that her condition could be rectified. There had to be sufficient time for her to be anaesthetised and undergo an operation conducted by an experienced neurosurgeon and I needed to conclude that that surgery would, on a balance of probabilities, have saved her life.

It was clear from Dr McAdam's evidence as well as the views expressed by the other doctors that as each hour passed the leakage within the cranial space in Mrs Heffernan's head was continuing to fill it and the problems of rectifying the situation were increasing proportionately.

I have however reached the conclusion that I can make a finding that a reasonable precaution whereby the death might have been avoided would have been the carrying out of a CT scan after the vomiting episode at 5.00 am. The sub-section allows me once I have found it established on a balance of probabilities that a reasonable precaution existed to consider whether its implementation "might" have resulted in the death being avoided.

Based on the evidence of Mr Ballantyne in particular, I consider that Mrs Heffernan's death "might" have been avoided by the reasonable precaution of a CT scan after the vomiting episode of 5.00 am as this would have put in train her transfer to the care of a specialist team in neuro surgery. I accordingly have made findings in relation to both vomiting episodes in my Determination.

In terms of Section 6(1)(d) Mrs Dalziel argued that there were at least six defects in the system of working which contributed to Mrs Heffernan's death. Each requires to be considered carefully and in respect of each Mr Wightman in particular on behalf of the Health Board, argued that there was insufficient information to make a positive finding that any particular defect (assuming that I found that a defect existed) had "contributed to the death."

He pointed out that sub-section (d) requires a positive finding that the defect "contributed to the death" rather than a circumstance whereby the death "might" have been avoided. I agree that the test is stricter. As Sheriff Principal Mowat opined sub-section (d) "requires a higher test because the defect must have contributed to [the death]."

Mrs Donald, on behalf of Dr McIlroy, suggested that if there were any defects which had contributed to the death no finding should be made in relation to her client. Mrs Kaney, in so far as Mrs Dalziel's submissions related to doctors Rimmer or Litherland submitted that the evidence did not justify the conclusions which I was being asked to reach. So far as Dr Wallers was concerned, Mrs Dalziel agreed that by the time he became involved Mrs Heffernan's condition had deteriorated to such an extent that her death could not be avoided.

Mrs Dalziel's first contention was that the system of review of skull X-rays was defective. While it was understandable that Dr Rimmer, as an SHO2 had not correctly diagnosed the skull fracture on Mrs Heffernan's X-ray films (this view was supported by both doctors Munro and Wallers) there was a defect in the system in that the X-rays were being viewed by a doctor with limited experience at the time. It was suggested that had a system existed whereby the X-ray was reviewed by the SHO3 then the skull fracture would have been spotted and a fundamental additional factor in assessing Mrs Heffernan's case would have been known during the evening of 06 June.

Dr Rimmer, in his evidence, indicated that if he had had any doubts about the interpretation of the X-ray then the policy which existed at that time was for him to have the matter looked at by his more senior colleague. However, as Mrs Kaney pointed out, because he was not in doubt, no such review took place.

Mrs Heffernan's skull X-ray was not easy to interpret and in fact Dr Wallers did not realize that she had a skull fracture. It is therefore very easy to appreciate why Dr Rimmer interpreted the film as he did. The question which Mrs Dalziel posed however was whether the system should have provided that all skull X-rays, even if the junior doctor was not in doubt, should be reviewed by the SHO3 at the time.

Alternatively, Mrs Dalziel suggested that the system should provide for films to be reviewed by an experienced radiologist sooner than applied in this case. Mrs Heffernan's X-rays in the early evening of 06 June were not reviewed by a radiologist (Dr Wallers) until late the following morning and were not reported on until at least lunch time. A period of at least sixteen hours had elapsed without the films being seen by any medical person other than Dr Rimmer.

Mr Wightman argued that there was insufficient evidence to justify making a finding in respect of either of the suggestions made by Mrs Dalziel. He reminded me that Dr Munro, when asked if all skull X-rays should be reviewed by another doctor, had not given an unqualified affirmative answer but had indicated that he would stress to SHOs that it was not unreasonable to seek a review from more experienced colleagues.

In relation to the suggestion that films should be reviewed by an experienced radiologist, while in an ideal world there would be an abundance of doctors of every grade to cover every speciality at all times it was, he contended, unreasonable to suggest that a specialist in reading X-rays should be on-hand twenty-four hours a day.

Given the fact that all X-rays were subsequently reviewed by a consultant radiologist the following day this was a reasonable system in accordance with the practicalities of running a hospital and he invited me to reject Mrs Dalziel's contention that there had been a defect in the system of reviewing skull X-rays.

I think that Mr Wightman's argument has force. I do not think that it would be reasonable to have a system whereby every skull X-ray required to be seen by an SHO3 even when the SHO2 was dealing with a case. It was clear that a system did exist whereby if the SHO2 was in doubt he could and should consult his more senior colleague and Dr Rimmer was clear that this would have occurred. Where however a qualified doctor, as Dr Rimmer was, believed that he correctly interpreted the X-ray (and it must be remembered that Dr Wallers, a Consultant Radiologist, reached the same conclusion) then I do not consider that a system should have existed whereby notwithstanding Dr Rimmer's view he was required to show the film to another doctor.

Likewise, I agree with Mr Wightman's argument that it would not be reasonable to expect Monklands District General Hospital to have a radiologist on duty outwith normal working hours in case he/she was required to interpret a film when there were doctors on duty capable of viewing the film and where there was already in existence a system whereby a consultant radiologist looked at and reported on the films the following day.

Dr Wallers indicated that if at any time he had been required to attend the hospital to conduct a CT scan or to view a film which was causing problems of interpretation he would have done so. I therefore believe that Mrs Dalziel's argument under this heading is based too much on a counsel of perfection and that the system which did exist in relation to the interpretation of skull X-rays did not amount to a defective system.

In any event, the terms of Section 6(1)(d) require me before I can make a finding to conclude that there was a defect in the system of working and that it "contributed to the death." In this case I am unable to do so.

Dr Munro indicated that based on a test which he had conducted that a group of SHO3s had correctly realized that Mrs Heffernan's skull X-ray did show a problem and that two out of five made the correct diagnosis.

However well a "blind survey" is conducted it is difficult for those involved not to be searching for a problem which they believe must be there. In the case of Mrs Heffernan's X-rays they were seen by an experienced consultant radiologist and he did not ascertain that there was a skull fracture. I am therefore not satisfied, despite Dr Munro's suggestion, that even if the X-ray films had been shown to the SHO3 on duty (and no evidence was led from that person) that the correct interpretation would have been made. It therefore cannot be shown that the death would not have still resulted had the SHO3 on duty seen the film. In these circumstances I cannot make the finding which Mrs Dalziel has suggested.

The same argument probably applies in relation to the situation which would have arisen had the film had been seen by an experienced radiologist. Had that been Dr Wallers he would have reached exactly the same conclusion as he did when he reviewed the films on 07 June. There is no evidence which would justify me making a finding that the lack of a review system by a radiologist resulted in the death.

Mrs Dalziel's second "defect" was a lack of basic awareness of patients admitted to ERU and for whom they are responsible on the part of the doctors working in A&E. This was, she suggested, highlighted by the fact that Dr McIlroy knew very little about Mrs Heffernan's care before Nurse Smith spoke to him. The fact that the patient was in a ward away from where he was working in A&E made the situation more difficult. Her notes were in ERU but the doctor was working A&E and he did not immediately have access to the information about her.

The situation was even more relevant in relation to Dr Scollon who came on duty at 8.00 am and knew nothing of Mrs Heffernan (other than presumably she was a patient in ERU) until he was asked to see her at 11.00 am.

In relation to Dr Scollon I do not think that it is appropriate to make any finding because it cannot be said that his lack of awareness of Mrs Heffernan was a defect which contributed to her death.

In relation to Dr McIlroy however I believe that the evidence established that had he been fully aware of Mrs Heffernan's history and condition and been conversant with her notes, he would have visited her. It has however to be recalled that Dr McIlroy

was clear in his evidence (and I accept this as being accurate) that he advised Nurse Smith that if she had any concerns he would come and no message to the effect that there were concerns ever reached him.

It is difficult taking this point on its own to conclude that a defect "contributed to the death" but when taken with the next point made by Mrs Dalziel I believe that there is evidence of a defect in the system which existed at that time within Monklands District General Hospital in respect of which a finding can be made under Sub-section (d).

Mrs Dalziel's third point was that there were defects in the system for communicating concerns from ERU to the A&E doctors. I believe that this is correct. I further believe that the system whereby A&E doctors retain responsibility for patients in ERU may need to be reconsidered. It can be argued that where one set of nurses is responsible for the care of everybody within the ERU the same should apply in relation to doctors. Instead, as I have indicated, the particular doctor responsible for the care of a patient in ERU depends on whether the patient was referred to ERU from A&E or from some other source.

Out of normal working hours this means that in relation to those patients for whom A&E doctors retain responsibility, that the nurses in ERU require to make contact with the A&E doctors who may well be fully occupied dealing with incoming patients at the time. I believe the system would be better if one set of doctors was responsible for ERU and that those doctors should be the same doctors for all the patients. Because of the heavy level of the workload of the A&E doctors this task should be undertaken by the doctors on call for the majority of the patients in ERU. A split system of medical care leads to misunderstandings and confusion. It also means that doctors busy attending to their normal duties and without access to the records or sufficient up to date information in relation to the patient are expected to leave the work which they are doing to attend to matters in a different (but adjacent) part of the hospital.

This is a defect in the system of working and in Mrs Heffernan's case it contributed to her death as she was not seen by a doctor when she should have been in the early hours of the morning of 07 June. This arose, in my view, in part from the dual responsibilities imposed on A&E doctors retaining care duties for a patient in ERU while working in A&E. Had Mrs Heffernan been under the medical care of a doctor who had ready access to her notes, was free to attend the ward and was not involved in continuing constant duties in another department then she would have been seen, assessed and appropriate steps would have been initiated which would have culminated in a timeous operation.

The system which apparently existed for communicating between ERU and the A&E doctors was either for the nurse to go through to A&E and to speak to the doctor personally or alternatively for a telephone message to be left with the A&E department seeking a medical visit or advice. The latter system clearly was known to be ineffective in that Nurse Dass was not unduly surprised that she did not receive an immediate response from the doctor on duty (Dr McIlroy) and it appeared to be accepted both by Dr McIlroy and by the nursing staff that on occasions the messages failed to reach the doctors. This system is, in my view, defective but there

remains the second hurdle which requires to be overcome before a finding can be made in terms of Sub-section (d) in relation to the post 5.00 am period namely that the defect contributed to the death.

There was insufficient evidence for me to find that had Dr McIlroy been contacted after 5.00 am that given the timescale involved, on a balance of probabilities, Mrs Heffernan would have been seen, CT scanned and transferred to the Southern General Hospital in sufficient time for effective surgical intervention to prevent her death.

It "might" have done and this highlights the difference between sub-sections (c) and (d). It is however impossible to say what a CT scan would have shown and whether the ongoing leak was such that on a balance of probabilities once Mrs Heffernan had reached Glasgow an operation would have been successful. The situation is complicated by her being on Warfarin and by not knowing the time when Mrs Heffernan would have been seen by the doctor whom I consider should have been responsible for the medical care of all the patients in ERU. Until this had taken place the timescale leading ultimately to the Southern General Hospital Neurological Unit would not commence.

I however believe that the points which Mrs Dalziel made are valid ones and are facts which can be included in Sub-section (e). They are matters which I believe the Health Board should give careful consideration to.

The fact that it may not be possible to show, in this particular case, that the defect contributed to the death does not diminish the fact that the system is defective.

Mrs Dalziel's fourth contention was that there was a demonstrable need for the training of nurses on the significance of vomiting in head injury patients and the associated need to keep records. I believe that this contention is correct and that Mr Wightman's valid attempts to suggest otherwise are not persuasive. Somehow the nurses did not seem to fully appreciate how significant an episode of vomiting was and of the importance of it in relation to a head injury patient so long after the blow which caused the injury had occurred. It may be that the nurses' perception of matters were dulled by the knowledge that Mrs Heffernan had taken too much alcohol but the passage of time since that had occurred should have made that factor of little or no significance when Mrs Heffernan vomited ++ bile at 1.50 am.

I have reached the inescapable conclusion that had the nurses been fully aware of the true significance of an episode of vomiting at that time in relation to a head injury patient then Nurse Smith would have explained more fully Mrs Heffernan's circumstances to Dr McIlroy and he would have made his own assessment.

Instead, Nurse Smith did not expect Dr McIlroy to visit and appears to have communicated with Dr McIlroy on the basis of seeking a prescription for an anti emetic. This, combined with Dr McIlroy's lack of knowledge of the patient revealed the defect in the system which, in my view, contributed to this lady's death.

The second episode of vomiting at 5.00 am is noted nowhere. It is essential that something as fundamental as that particularly in relation to a head injury patient is

correctly noted. In Mrs Heffernan's case the notes in fact contain a statement which is totally untrue namely "no further vomiting."

However, in Mrs Heffernan's case, by the time that note was read by the oncoming nursing staff after 8.00 am, it was, in my view, too late to remedy the situation. The timescale involved in having Mrs Heffernan assessed and transferred to the Southern General Hospital and for her then being prepared for an operation which would require to take place well before 11.00 am when her condition altered so dramatically, is too short. Dr McAdam's evidence of the continued but silent increase in filling of the cavity with the leaking blood combined with the evidence of Mr Ballantyne of the complexities of carrying out the operation after an extensive haemorrhage compels me to the view that it cannot be said that this particular defect contributed to Mrs Heffernan's death.

Again however, it is a matter which should be noted and I have therefore included a reference to it under Sub-section (e).

Mrs Dalziel's next point related to her suggestion that there was an inadequate system of hand-over between the nurses from the ERU at night to the nurses in ERU commencing the day shift at 8.00 am. Such evidence as we had in relation to this was vague but it has to be recalled that the nurses were speaking about events nearly two years ago. While there was evidence that a summary of the patients was prepared there is no record of this and therefore it is impossible to assess what information was passed from one shift to the other.

The Inquiry was however told that since 2005 the shift pattern has altered so that a period is allowed for the nurses to communicate with the next shift. I think there is insufficient evidence to know whether there was or was not an adequate hand over at 8.00 am on 07 June.

A new system should leave no possibility of the oncoming shift not being fully aware of all the patients and all their circumstances. It is of course essential that the notes are accurate and unless somebody had corrected the mistaken entry by Nurse Houston that there had been no further vomiting then the hand over information would have been incorrect.

It is however, in my view, not appropriate to make a finding under Sub-section (d) as it cannot be said that any defect in the hand over procedure at 8.00 am contributed to Mrs Heffernan's death. For the reasons I have given by that time I believe that there was insufficient time left for the appropriate procedures to be carried out to enable her to be operated on successfully in the Southern General Hospital before her collapse at 11.00 am.

The final point which Mrs Dalziel wished me to deal with under Sub-section (d) related to the lack of information passed to Dr McIlroy by anybody when he took over his duties as SHO3 at midnight. He did not appear to have been told anything about Mrs Heffernan (or any of the other patients in ERU) and this deprived him of the knowledge which could have been essential to him when he was approached by Nurse Smith at 1.50 am.

So long as A&E doctors remain responsible for patients in ERU then I think that there was a defect in the system. Whether it was particular to the night in question or how it occurred I had no evidence to guide me but somehow Dr McIlroy was not made aware of Mrs Heffernan's history nor did he appear to readily have access to her notes. Certainly her nursing notes were elsewhere with her in ERU. Accordingly, in my view, there was a defect in the system which applied that night for passing information from the medical shift, including Dr Rimmer, to the shift, including Dr McIlroy and that this can be said to have contributed to the death.

If however, as has been suggested, responsibility for the medical care of patients in ERU passed to the doctors who were responsible for the remaining patients in ERU then it would no longer be a matter for the A&E doctors. I appreciate that in relation to A&E in particular that there is an on-going flow of patients and to expect there to be a quiet period for a hand over is totally unrealistic. Dr Litherland confirmed that the shift pattern had been altered to allow for a staggered transfer of responsibilities with different doctors going off and coming on duty at different times so that it should be possible for some form of hand over to take place between various doctors.

While this is so, it does possibly lead to further confusion in that unless a particular doctor retains responsibility for a patient and then hands over responsibility to his successor the system may fail. If Dr Rimmer had known that he required to pass care of Mrs Heffernan to the doctor who succeeded him and the patients who were under the care of Dr Briggs, as the SHO3, were passed to the care of Dr McIlroy with appropriate information then the system would fail if the nurse approached the wrong doctor.

In this case the SHO2 (Dr Rimmer) had arranged for Mrs Heffernan to be transferred to ERU. It was the SHO3 (Dr McIlroy) whom Nurse Smith approached. There is therefore a need for a system whereby one doctor (presumably the senior doctor present namely the SHO3) assumes over all responsibility for all the patients under the care of the department and within ERU.

Because A&E is such a busy department with on-going calls for the attention of all the doctors on duty there is a particular need for the senior doctor to be aware of the patients for whom the department are responsible but who are elsewhere in an adjacent ward.

It is because of this potential confusion that I have reached the view that it would be better if the responsibility for medical care of ERU patients was in the hands of the same doctors as have care of the majority of the patients in that ward and that the division between the busy A&E doctors and other doctors is a system defect. Dr Munro indicated that the system which existed in Monklands did not apply in the Western Infirmary Glasgow.

Section 6(1)(e) allows the Sheriff where he is satisfied to record any other facts which are relevant to the circumstances of the death. As I have indicated, a number of the arguments put forward by Mrs Dalziel can be covered in this section. In addition to the points already made she invited me to consider the merits of the decision by Dr Rimmer not to review Mrs Heffernan before he went off duty. Mrs Kaney argued that there was no basis for making any finding in this respect because

Dr Rimmer had made a full assessment of the patient, had arranged for her to be admitted to ERU, had instructed that neurological findings were to be recorded and had not been alerted to any problem.

I think that Mrs Kaney's view is correct. While, if Dr Rimmer had had no other duties to perform, it would have been possible for him to leave A&E and visit Mrs Heffernan to see how she was, this would have required him to leave the department where he was fully occupied in dealing with the flow of patients arriving at the hospital needing treatment. In the absence of evidence that Dr Rimmer had a period of time when there was no work in A&E for him to do and when he could safely leave the department to go to visit Mrs Heffernan I cannot make the finding requested by Mrs Dalziel.

I do not think there is any evidence that Dr Rimmer acted other than in a totally professional manner. His failure to correctly interpret the skull X-ray is understandable given the nature of the film and the site of the fracture.

Mrs Dalziel's second point under this Sub-section related to the apparent failure of the nursing staff to seek a medical review between 5.00 am and 11.00 am. As I have indicated, I cannot explain why Nurse Dass did not follow up her initial request for a doctor after she did not receive any response to her telephone call at 5.00 am. Why matters were allowed to rest until 8.00 am, I cannot explain, and, in my view, it is something which should not have occurred.

Mrs Dalziel argued that I should also comment on the failure of the nursing staff who came on duty at 8.00 am not to seek an opinion before 11.00 am. I do not think that this is a fact which requires to be recorded. Mrs Heffernan's neurological findings from 8.00 am until 11.00 am were normal and the nursing staff were no doubt misled by the entry which indicated that there had been no further vomiting. Unless they were told the contrary (and I had no evidence to show this) they had reason to believe that a patient who had been admitted with a head injury had had satisfactory neurological findings throughout the night and continued to do so and had had one episode of vomiting but that it had been rectified by an anti emetic. The nightshift note had merely advised that the patient should continue to be observed closely.

In the absence of any adverse findings or any indication that Mrs Heffernan's condition had deteriorated or altered in any way whatsoever it is impossible to criticize the dayshift nursing staff for their failure to contact a doctor until 11.00 am. As I have indicated, it would not have altered the fact that by that time Mrs Heffernan's condition was such that no surgical intervention would be possible in time.

Mrs Kaney had no submissions to make in terms of Sub-section (e) and Mrs Donald's comments largely support the arguments put forward by Mrs Dalziel although she had no specific finding which she was seeking. She drew attention to a number of, what she regarded as faults in the system. These had already largely been covered by Mrs Dalziel.

Mr Wightman, in his submissions, in relation to this Sub-section, emphasized that the evidence showed that since 2005 there had been increases in the medical staff at

Monklands (a fourth consultant is being recruited) and that there has been greater induction training in respect of head injuries and radiograph examinations. He also pointed out that the hand over between doctors had been formalized and that specific time was now allocated to enable this to take place. The same situation applied now to nurses. I agree with his submissions; my Determination relates to the position in June 2005.

Everybody involved in the Inquiry expressed their deepest sympathy to Mr Heffernan and to his family. On the court's behalf and formally in respect of everybody involved in this Inquiry I wish to record our deepest condolences to the Heffernan family for their tragic loss. A review of Mrs Heffernan's GP records and the brief insight given by Mr Heffernan in the course of his evidence showed that she was a very loved and loving person and I am certain that she will be very deeply missed.

Accordingly, I Find and Determine that Anne Denise Clegg or Heffernan (date of Birth 25/08/48) who resided at 108 Tantallon Drive, Townhead, Coatbridge, died at 3.45 am on 08 June 2005 in Monklands District General Hospital and that the cause of death was a subdural haemorrhage following a fall within the garden at 108 Tantallon Drive around 5.00 pm on 06 June. A significant factor contributing to the extent of the haemorrhage was Warfarin therapy which was necessary and appropriate for Mrs Heffernan following earlier heart surgery.

In terms of Section 6(1)(c)

1 A reasonable precaution whereby the death might have been avoided was the undertaking of a CT scan in the early hours of 07 June 2005 following her vomiting at 1.50 am.

2 In the event that that opportunity was missed a further reasonable precaution whereby the death might have been avoided was the undertaking of a CT scan after Mrs Heffernan had vomited around 5.00 am.

In terms of Section 6(1)(d) there were defects in the system of working which contributed to the death:-

1 There was a lack of effective training and knowledge of the nursing staff of the significance of an episode of vomiting in relation to a patient with a head injury;

2 There was in 2005 inadequate provision for the transfer of information between doctors at shift changes when those doctors were retaining responsibility for patients who had been transferred from the Accident and Emergency Department (A&E) to the Emergency Receiving Unit (ERU);

3 There was a lack of awareness of the history, condition and treatment of patients within ERU by doctors working in A&E who retained responsible for their medical care;

4 There was a lack of an effective system for the communication of any concerns relating to or the reporting of relevant changes in the condition of a patient by the nursing staff in ERU to the medical staff in A&E.

5 There was a system in place which divided medical responsibility for patients within ERU between two different groups of doctors. The retention of responsibility by A&E doctors for certain patients (including Mrs Heffernan) within ERU was a flaw in the system for efficient patient care. In so far as this defect relates to the events surround her vomiting at 1.50 it contributed to her death.

In terms of Section 6(1)(e), other facts which are relevant to Mrs Heffernan's death include:-

1 There was a failure to have her seen by a doctor after she had vomited at 5.00 am on 07 June 2005;

2 There are no notes relating to her being sick at 5.00 am. Furthermore, there was not a proper appreciation of how significant this episode was and a totally inaccurate note suggesting that she had not vomited;

3 There was an unexplained failure to follow up the lack of response to Staff Nurse Dass' request for a medical assessment at 5.00 am;

4 The system whereby the doctors in A&E retained responsibility for patients in ERU although they were occupied attending to the ongoing flow of those attending A&E weakened the chances of a patient whose conditions was changing in ERU being seen speedily. All ERU patients should have the same nursing and medical team responsible for their care;

5 The system of communication between ERU and A&E was ineffective. Messages for A&E doctors were not always received and no system existed to ensure that such calls were recorded or followed up.