

SHERIFFDOM OF SOUTH STRATHCLYDE, DUMFRIES AND GALLOWAY
AT DUMFRIES

DETERMINATION

by

SHERIFF KENNETH A ROSS

Sheriff of South Strathclyde, Dumfries and Galloway at Dumfries

in

an Inquiry into the circumstances of the death of

JOHN AITKEN

held under

the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976

DUMFRIES: 16 August 2011

The Sheriff, having resumed consideration of the cause, Determines:-

1. Place and time of death

John Aitken died within Ward 14 at Dumfries and Galloway Royal Infirmary, Dumfries on 1 April 2009 at 18.00 hours.

2. Cause of death

His death was caused by 1(a) Cardiorespiratory arrest (b) Hypoxic brain damage and (c) Widespread severe bronchopneumonia.

3. Reasonable precautions whereby the death of John Aitken might have been avoided

(a) That the instruction to nursing staff in Ward 14 from the Intensive Care Unit physician who was to be responsible for Mr. Aitken in the Unit that Mr.

Aitken's blood saturation levels should be continuously monitored should have been recorded in the nursing notes;

- (b) That Mr. Aitken's blood saturation levels should have been regularly monitored and recorded on his Modified Early Warning System (MEWS) chart by the nursing staff caring for him in Ward 14 before his transfer to the Intensive Care Unit;
- (c) That, when it was apparent to the nursing staff in Ward 14 that no portable SATS machine to monitor Mr. Aitken's blood saturation levels during the transfer was available in Ward 14, the Intensive Care Unit physician who had instructed continuous monitoring of these levels should have been informed;
- (d) That the portable oxygen supply to Mr Aitken should have been switched on by the nursing staff responsible for the transfer after he had been disconnected from the wall mounted oxygen supply;
- (e) That Mr. Aitken's blood saturation levels should have been monitored by means of a portable SATS machine continuously throughout his transfer from Ward 14 to the Intensive Care Unit;
- (f) That Mr. Aitken should have been observed (seen and looked at) continuously by the nursing staff responsible for his transfer from Ward 14 to the Intensive Care Unit.

4. Defects in the system of working which contributed to the death of John Aitken

- (a) There was, in Dumfries and Galloway Royal Infirmary at the time of Mr. Aitken's death, no formal, properly publicised and fully understood procedure for the care of ill patients during transfers between wards or departments;
- (b) Observations of Mr. Aitken's blood oxygen saturation levels and other information were not recorded on the MEWS chart prior to his transfer;
- (c) Mr. Aitken did not receive ambulatory monitoring of his blood oxygen saturation levels during the transfer;
- (d) Mr Aitken did not receive supplementary oxygen during the transfer;

- (e) Staff on Ward 14 were not fully aware of, and lacked adequate training in, the requirements for the transfer of ill patients such as Mr Aitken from one part of the hospital to another;

5. Other facts relevant to the circumstances of the death

None

6. Recommendations

None

Note:

Introduction

[1] This Inquiry was into the death of John Aitken who died in Ward 14 of Dumfries and Galloway Royal Infirmary, Dumfries on 1 April 2009 while a patient there. It was held in terms of section 1(1)(b) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976. The Crown was represented by Miss Hynd, Procurator Fiscal Depute. Other parties represented at the Inquiry were the family of Mr. Aitken (by Miss McCracken, Solicitor) and Dumfries and Galloway Health Board (by Mrs. Robertson, Solicitor) I heard evidence and submissions over five days.

[2] The following witnesses gave evidence at the Inquiry at the instance of the Crown:

1. Dr Roger Holden, the consultant physician in charge of Ward 14 of Dumfries and Galloway Royal Infirmary where Mr. Aitken was a patient between September 2008 until his death.
2. John McGill, the senior staff nurse in Ward 14.

3. Adrian McCulloch, the Medical Director of Acute Services at Dumfries and Galloway Royal Infirmary.
4. Christine Wood, an auxiliary nurse in Ward 14.
5. Shona Graham, a staff nurse in Ward 14.
6. Melanie Kerr, a staff nurse in Ward 14.
7. Scott Marshall, a consultant anaesthetist at the Monklands Hospital, Airdie.
8. Dr Paul Jefferson, a consultant anaesthetist in the Intensive care Unit (ICU) at Dumfries and Galloway Royal Infirmary.

The following witness was called on behalf of the family of Mr. Aitken:

1. His wife, Moira Aitken.

In addition there was evidence in the form of affidavits at the instance of the Crown from:

1. Kathleen Henderson, a Force Support Officer with Dumfries and Galloway Constabulary, who had taken a series of photographs and carried out an inspection and measurement of parts of Ward 14.
2. Peter Bryden, a Patient Services Officer at Dumfries and Galloway Royal Infirmary, who had produced a floor plan of Ward 14.
3. Doctor William Kieran, a General Practitioner in Annan whom Mr. Aitken had consulted in 1997 and 2008.
4. Ross Little, a porter employed at Dumfries and Galloway Royal Infirmary.
5. Dr A Lutfy, a consultant pathologist at Dumfries and Galloway Royal Infirmary who performed a post mortem examination of John Aitken.
6. Karen Camm, a sister at Dumfries and Galloway Royal Infirmary who recovered the portable oxygen cylinder which had been used during the transfer of Mr. Aitken on the date of his death.
7. Joyce Adams, a Police Constable who, on 3 June 2011, had seized, from the staff at Dumfries and Galloway Royal Infirmary, a breathing mask and bag identical to that being worn by Mr Aitken on the date of his death.

The Factual Background

(a) Mr. Aitken's Underlying Condition and Illness

[3] In 1997 Mr. Aitken consulted his GP about a stricture in his oesophagus. An endoscopy was carried out which did not identify any tumours or cancers. He was prescribed medication to reduce the acid moving from his stomach to his oesophagus and remained on that medication for a number of years. On 2 June 2008 he attended again complaining he was unable to swallow food. His medication was increased but the symptoms persisted. He was referred for a further endoscopy. He was admitted to the surgical unit of Dumfries and Galloway Royal Infirmary on 28 July 2008. A localised tumour was identified and he underwent endoscopic dilation the same day. Unfortunately the operation resulted in oesophageal perforation, a recognised complication of the procedure. This meant that food from the stomach leaked out into the chest cavity and caused infection. He was transferred to Edinburgh Royal Infirmary on 31 July 2008 where he underwent oesophageal-gastrectomy and drainage procedure. This involved removal of a substantial part of the stomach. It had the consequence that feeding required to be by a tube in the abdomen directly into the duodenum (the upper part of the intestine). He was also treated for intra-thoracic sepsis. After the operation, it became apparent that he was unable to move his lower limbs. An MRI scan of the spinal cord showed no explanation. Mr. Aitken had undergone epidural anaesthesia (local anaesthetic into the spinal cord) which can be complicated by the development of a blood clot in the bony spinal canal pressing on the spinal cord (extradural haematoma). But it is more likely that there had been obstruction in the blood supply due to blockage of the Inferior Spinal Artery which can occur as a result of low blood pressure and mechanical damage to the vessel and due to arteromatous plaque (hardening of the arteries) dislodging from the aorta and getting into the vessel. There is no treatment to unblock the vessel. In some milder cases a degree of slow improvement can be expected. Most severely affected individuals will not improve. Mr. Aitken remained at Edinburgh Royal Infirmary until 28 August 2008 when he was transferred to Dumfries and Galloway Royal Infirmary. Unfortunately, during that time, he had developed a pressure sore on his sacrum.

[4] Soon after his arrival in Dumfries, on 1 September 2008, Mr. Aitken was transferred to Ward 14 which is an Acute Rehabilitation Ward. He was under the care of Dr Holden assisted by Dr Rafferty and Dr Craig. He remained there until his death on 1 April 2009. The purpose of the care and treatment given in Ward 14 is to place patients in the best position to return home. Approximately 1000 patients pass through the Ward in the course of a year. Most stay for about two or three weeks. Unfortunately, Mr. Aitken did not make the progress which the medical staff, and also his family, hoped. He was unable to return home.

[5] The various problems from which Mr. Aitken suffered were explained in some detail at the Inquiry, principally by Dr Holden. The other medical and nursing witnesses tended to support and supplement what he said. There was some partial success in healing the pressure sore but it remained malodorous and prevented movement from the bed to a wheel chair. A special bed was employed to attempt to relieve this condition. There was very little movement of the lower limbs and there was painful spasticity (leg and abdominal stiffness and spasms). This was not satisfactorily treated despite high doses of appropriate medication. Feeding continued through the abdominal tube although Mr. Aitken was able to take some food and liquid by mouth. His paralysis had affected both his bowel and his bladder and he was incontinent. Because of a colonisation of ESBL organism he was subject to reverse barrier nursing which meant that the staff treating him had to wear appropriate clothing and he was isolated in a single room. These clothing restrictions did not apply to members of his family who visited.

[6] For patients suffering from the oesophageal cancer which was identified in Mr. Aitken, and treated, the survival rate after 5 years is 15%. There is accordingly a high incidence of the recurrence of the cancer. The evidence of Dr Holden indicated that he thought this was a very likely possibility but it was not this possibility which caused Mr. Aitken to remain in Ward 14 for the length of time which he did. That related to the other symptoms which I have discussed above. There was considerable discussion at the Inquiry about the treatment which Mr. Aitken received. There were two important ancillary themes which emerged in that evidence. The first was that, although his condition was both painful and uncomfortable, Mr. Aitken remained stoic and very firmly wished to get better and return home. The second was that his family were highly

supportive of him. They visited daily, often more than once. They were very committed to his recovery and held to the belief that he would be able to return home. Part of that stemmed from the not unreasonable assumption that, as he was in a rehabilitation ward, that was the likely outcome. During his time on Ward 14 there was no recurrence of the cancer which had led to the complications which had caused Mr. Aitken's condition and problems. In January 2009 a CT scan and aspiration of pleural fluid (removal of fluid from the chest cavity) showed no evidence of tumour recurrence. And the post mortem examination was to reveal no such recurrence.

[7] There was some evidence about a request from the family that Mr. Aitken be transferred to the National Spinal Unit in Glasgow for the more specialist treatment available there. The evidence of Dr Holden was that, because of the diagnosis and treatment for the cancer, and the possibility of recurrence, Mr. Aitken did not satisfy the criteria for admission to the Unit. There was some cross examination on this point because there had been no actual recurrence of the cancer. I was satisfied that Dr Holden had made an appropriate referral to the Unit (the correspondence supported that) and that an appropriate decision about not admitting Mr. Aitken to the Unit had been made. What was significant, from the point of view of Mr. Aitken's treatment, was that advice had been taken from the Unit about the management of his problems, particularly his pressure sore. Staff from the Unit visited Mr Aitken in Dumfries. The advice which they provided was followed.

[8] What it is important to note is that, during the period from September 2008 until March 2009, although there had, from time to time, been some improvements in some of the symptoms and conditions from which Mr. Aitken suffered, these had not brought him much nearer to the point where he could have returned home. He remained quite ill. That seemed to be clear to Dr Holden and to the medical staff. That was their evidence. Unfortunately that was not the impression held by Mr. Aitken's family. That may have been in part due to their optimism and hope for his recovery, influenced undoubtedly by his stoicism and determination, but my impression was that the full extent of his underlying problems had not been clearly enough explained to them by Dr Holden and the other medical staff. That impression was fortified by the evidence I heard about the events which immediately preceded his death and immediately after.

(b) The Decision to Transfer Mr. Aitken to the Intensive Care Unit

[9] The background to this decision has its origins in a deterioration in Mr. Aitken's condition on 16 March 2009. He started to vomit blood and required a blood transfusion. What he was eating and drinking, and the saliva secretions produced by his mouth, were not getting through from what remained of his stomach to the duodenum. On 18 March he underwent an endoscopy. This showed no evidence of tumour recurrence but disclosed a narrowing in the duodenum at the site where this had been joined to the stomach after the Edinburgh operation. It was thought that the blockage was caused by ulceration and appropriate medication was given. In the following weeks, episodes of vomiting of gastric secretions from the stomach continued. This, in turn, led to episodes of aspirational pneumonia due to the inhalation of these secretions coming up from the upper gastrointestinal tract. These increased in frequency from 20 March onwards. Further antibiotic medication was administered.

[10] Dr Holden still suspected that there had been a recurrence of the cancer. On 24 March a barium meal examination was performed. This involves passing a liquid down the oesophagus and into the stomach. X-ray observations are taken. This showed that the liquid passed to the stomach but not out of the stomach into the duodenum. No useful information about the narrowing at the entrance to the duodenum was gained but there was an appearance at the entrance to the stomach which was suspicious of cancer recurrence.

[11] After this procedure, Dr Holden's impression was that, despite there being no definite proof of cancer recurrence, the general situation was so hopeless that no escalation of treatment by admission to the ICU or by resuscitation (defibrillation or chest compression) in the event of cardiac or respiratory arrest would be appropriate. He discussed this with his medical colleagues and, on 25 March, completed a Resuscitation Status form giving Mr. Aitken's status as "not for resuscitation" with a stated reason "probable recurrence of oesophageal cancer in context of ongoing discomfort and distress (review after surgical assessment)". He felt it was inappropriate to discuss this with Mr. Aitken or his wife. In part this was due to the discretion which he had in terms of the guidelines which I will discuss. In part it was due to his belief that Mr. Aitken and his

family would refuse to accept the serious nature of Mr. Aitken's condition. He based that view on previous discussions about a change in emphasis in Mr. Aitken's care to palliative care in conjunction with active treatment.

[12] Mr Aitken suffered further aspirational pneumonia on 30 March. By then his situation had been further considered by one of the surgeons, Mr. Auld, who had been requested to do so by Dr Holden on 25 March. Mr. Auld advised that a CT scan should be performed to look for evidence of tumour recurrence at the site of the stricture between the stomach and the duodenum. For this to be done it was necessary for the barium to be removed from the stomach. If there was no evidence of tumour recurrence, a balloon dilation of the stricture might be attempted. The removal of the barium was an unpleasant procedure by means of a nasogastric tube and then aspiration. During this procedure on 30 March Mr. Aitken's oxygen mask was removed for approximately ten minutes. This caused his oxygen saturations to fall below 90%. On 31 March Mr. Aitken underwent further CT scanning which showed no tumour recurrence but extensive pneumonia affecting both lungs. Mr. Auld's decision was that the balloon dilation should be considered. On 1 April there was a further episode of aspirational pneumonia and Mr. Aitken's oxygen saturations deteriorated. He required the maximum level of 15 litres of oxygen per minute for an acceptable level of breathing and, in Dr Holden's opinion, was in respiratory failure and getting worse. He and Dr Saha, the consultant Gastroenterologist who was to perform the dilation operation, felt that Mr. Aitken would not be fit to undergo the endoscopy which the operation required. They asked Dr Jefferson from the Intensive Care Unit (ICU) whether a period of artificial ventilation in the ICU would allow Mr. Aitken's lungs to be cleared out sufficiently to allow restoration of stomach drainage prior to the balloon procedure. He agreed but felt that, if there was any deterioration of any further organ systems, such as cardiac or renal problems, further active treatment should be stopped. At around 15.00 that day there was a discussion with Mr. Aitken and what was proposed was explained to him but also that the procedure might not work. He asked to discuss it with his wife and, after a further discussion between Dr Holden and Mr. and Mrs Aitken, it was agreed that the transfer to ICU should take place with a view to the balloon dilation proceeding.

[13] The view which Dr Holden expressed in evidence was that he would not have advised the endoscopic dilation but that Mr. Auld felt that it should be attempted. Mr. Auld did not give evidence at the Inquiry. Neither did Dr. Saha. So it is very difficult to form any conclusion about whether Dr Holden's view was other than reasonably based or whether the proposed surgical procedure, and the necessary preparatory procedure in the ICU, and involving a transfer to the ICU, were required or, given his generally poor condition, in Mr. Aitken's best interests.

(c) The Arrangements and Preparations for the Transfer

[14] Dr Jefferson, who would be receiving Mr. Aitken in the ICU, did not think, and did not express any view, that there was any urgency in the transfer. It should be understood, and this was confirmed in the evidence of both Dr Holden and Dr Jefferson, that Mr. Aitken was not being transferred to the ICU for treatment caused by the deterioration in his condition but for ventilation prior to the proposed balloon dilation and for possible further care after that procedure. The important thing seemed to be that the ventilation procedure had to be carried out before the dilation procedure would be possible. No particular instructions were given by Dr Jefferson about the transfer except that he told Shona Graham that Mr. Aitken's blood saturation levels should be continuously monitored. By that he meant both before and during the transfer. These instructions were not written by Shona Graham on the nursing notes or elsewhere, for example on the MEWS chart. They were not communicated by her to other members of the Ward 14 nursing staff; particularly to John McGill who took over the transfer arrangements when she felt unable to do so. Nor were any precise instructions given by Dr Holden about when the transfer was to take place. It was a feature of his evidence, and that of the nursing staff on Ward 14, that no one could recall being instructed to carry out the transfer or to do so at a particular time. It seemed to be the position that it would be done when it was possible. Originally, the intention appeared to be that Shona Graham would organise and supervise the transfer but she had been off work for some time and did not feel confident about doing so. That was the evidence of John McGill who was the senior member of the nursing staff on the ward. He said that he had become aware of Mr. Aitken's deterioration at about 13.30. (It should also be noted that neither Shona Graham nor John McGill had carried out such transfers in the past. Nor had either received any

specific training in what was required in doing so.) Later John McGill heard that the transfer had been discussed and then Shona Graham had told him that the transfer was to go ahead. He said that he was giving consideration to when best to arrange it, balancing other duties such as the provision of medication to patients and their meals which were normally served at about 17.15 to 17.30. The start of the transfer seems to have been provoked by the arrival of Ross Little, the porter who was to assist in it. His affidavit is silent on who had called his supervisor to request him to attend. None of the other witnesses gave evidence which illuminated that issue. The nursing notes (at 15.00) simply record a transfer to take place in the evening. The medical notes record the same at 17.00. So it is difficult to conclude other than that there was imprecision about who was to carry out the transfer and when it was to be done. To that extent there was a lack of organisation and preparation.

[15] But other preparatory steps had been taken. Following Dr Jefferson's instructions to Shona Graham to monitor Mr. Aiken's pulse and oxygen saturation levels on a continuous basis, she had connected him to a machine which monitored that (a SATS monitor) by means of a small probe attached to his finger by a spring clip. She was not sure when that was done but the machine was in the room before Dr Jefferson gave his instructions. She remembered having to reconnect the clip when it slipped off Mr. Aitken's finger. She was in the room quite often between 15.00 and 16.00 and glanced at the machine reading when she was in. The note taking of these observations by Shona Graham was deficient. That should have been done on an observation chart which calculated an Modified Early Warning Score (MEWS). Shona Graham made no MEWS entries after 14.15. But at about 16.00 she did report to Dr Craig that the blood saturation levels had dropped to 81% and, as a result, a 10 ml normal saline nebuliser was administered. This improved Mr. Aitken's condition. While the nebuliser was administered Mr. Aitken was not receiving the oxygen supply for approximately ten minutes.

[16] The SATS monitor in Mr. Aiken's room was not portable in the sense that it was connected to the mains electricity supply. There was some evidence that it had a backup battery but little certainty about how long that would last. In any event, it was clearly contemplated, by Shona Graham at least, that SATS monitoring would continue during

the transfer because she went in search of a portable monitor. One on the ward was being used by another patient. She was unable to find another and unable to get one from another ward. In her evidence she was equivocal about whether Dr Jefferson's instruction about continuous monitoring applied throughout the transfer process but her action in seeking to find the portable monitor makes it clear that she must have understood him to mean just that. Dr Jefferson's evidence was that he intended the monitoring to be continuous throughout the transfer and he indicated that if he had been advised that no portable monitor was available he would have arranged for one from the ICU and said that he would probably have supervised the transfer himself. John McGill agreed that "on reflection" there should have been a portable monitor during the transfer. It was not clear from his evidence why one had not been obtained or why he did not insist on that before the transfer commenced; or why neither he nor Shona Graham did not contact Dr Jefferson or consult the doctors on Ward 14.

[17] Mr. Aitken had been receiving continuous oxygen while he was in the ward. Before the transfer that was at the maximum level of 15 litres per minute. In the ward, oxygen is directly supplied from a fixed point on the wall. For the transfer a portable supply was necessary. That was arranged by Christine Wood. She did this on her own initiative when she became aware that the transfer was to take place. She obtained an oxygen cylinder and placed it on Mr. Aitken's bed. Two other pieces of equipment were required to effect the supply of oxygen. The first was a regulator which was attached to the oxygen cylinder and controlled the flow of oxygen to the patient. Christine Wood had not brought that with the cylinder and it was obtained by John McGill when he came to start the transfer. He attached it to the cylinder after having removed a cap from the cylinder which indicated that the cylinder was full and unused. A full cylinder would supply oxygen for approximately 20 minutes. The second was the tube leading from the cylinder and the mask (to which an inflatable bag is attached) which delivered the supply to the patient. That was already supplying oxygen to Mr. Aitken from the wall supply.

[18] There was quite a bit of evidence about the working of the oxygen cylinder and bag. Not all of it was as clear as it might have been. Many of the witnesses were not as familiar with these workings as one might have expected. In the course of the evidence there were various demonstrations about how the system worked but no evidence of any

systematic testing (for the purpose of the Inquiry) of the effect on the inflation of the bag of the switching on of the oxygen or of the breathing of the patient through the mask. From what I saw and heard, and my own opportunity to examine the equipment (but not, I stress, on the basis of any experiments carried out by me when writing this Determination), the oxygen flowed from a valve at the top of the cylinder into the regulator. That valve was controlled by a circular knob which was opened by turning it anti-clockwise. There was evidence that some of these cylinders had valve knobs which required to be depressed before turned. The cylinder used in Mr Aitken's transfer was not one of these. The regulator controlled the flow of oxygen to the tube leading to the mask. It could stop that flow if at the "off" position or deliver a regulated flow up to a level of 15 litres per minute. Whether that flow was off and, if on, its volume was shown on the side of a circular valve on the top of the regulator. This turned on the flow and regulated it. It was also operated by being turned anti-clockwise. There was also a dial on the regulator which, when the valve from the cylinder was turned on, showed how full the oxygen tank was. So, to provide a supply of oxygen, it was necessary to turn both valves to the on position (calibrated, in the case of the regulator valve from 1 to 15. If the tank valve was turned off the needle on the dial returned to the zero position. Its position was unaffected if the regulator valve was turned off.

[19] The situation about the oxygen mask and attached bag was more complicated; or rather, less clearly explained. The mask fitted round the patient's mouth and lower face to allow oxygen to be breathed in but the evidence was that this was not pure oxygen as some outside air was inevitably breathed in through the sides of the mask. The purpose of the bag was to provide an additional reservoir of oxygen as the patient breathed in. The oxygen supply was connected to the neck of the mask between the mask itself and the bag so as to allow the oxygen to flow into both the bag and the mask. There was no valve or other obstruction between the oxygen supply and the bag. Between the supply and the mask there was a one way valve which consisted of a thin filament of what looked like flexible plastic material. It opened into the mask but was designed to prevent the air expired by the patient entering the bag.

[20] Evidence about this equipment and how it worked came first of all from Dr Holden, who admitted he knew little about the operation of portable oxygen cylinders but

said he was familiar with the supply mechanism from the wall supply via the mask. He explained that exhaled breath still contains a higher concentration of oxygen than the surrounding air. His understanding was that this exhaled breath was utilised by means of the bag. He understood that, as the patient breathed out, the bag inflated and, as the patient breathed in, the contents of the bag were added to what was being breathed in through the mask. It helped to increase the level of oxygen being breathed by the patient. From my description of the mask and bag mechanism in the previous paragraph, it is clear that Dr Holden had a mistaken understanding of how it worked. John McGill's impression was that if the oxygen was not switched on, and the patient was breathing, the bag would collapse. Dr Marshall explained that the bag was there to provide an additional reservoir of oxygen to supplement that in the mask when the patient breathed in. The supply was 15 litres per minute but a patient might breathe in at a rate of 35 litres per minute which would include room air from the sides of the mask. The oxygen from the bag supplemented that. In the course of his cross examination, Dr Marshall inflated the bag by holding the mask to his mouth and then turned off the oxygen supply. After between four and five minutes the bag was still partially inflated. Dr Marshall was also clear in his evidence that, if the same sort of bag had been used for Mr Aitken, the bag could not have inflated unless the oxygen had been turned on at some stage. Dr Jefferson confirmed the mechanism of the additional reservoir and the effect of the one way valve. Indeed, he described the bag as a "non-rebreathing bag" because of that. He was asked if a bag inflated from the wall supply would deflate when the supply was transferred to the portable cylinder. He said that it would to some degree; and gave the same answer in respect of what would happen if the patient were breathing but the oxygen supply was not switched on.

[21] John McGill's evidence was that he (or perhaps Shona Graham – he was unsure but she said she had no part in this) removed the tube from the wall supply and attached it to the regulator attached to the cylinder on the bed. John McGill said that "in my mind" he turned the regulator valve to 15 and switched the cylinder supply on. This was at approximately 17.00.

(d) The Transfer of Mr. Aitken

[22] The intention was to move Mr. Aitken's bed from the room in Ward 14 along the corridor to the lift and from there to the ICU which was on a different floor of the hospital. After the oxygen supply had been transferred, John McGill would normally have put the cylinder on the bed but, because the bed was a high one, he hung it on the side of the bed. As the bed was moved, the cylinder caught on another adjoining bed. He then placed the cylinder at the top of the bed where he was positioned. He had one hand on the cylinder at the on/off valve and, with the other, he was holding the top of the bed. He was facing the bottom of the bed. He had no clear view of Mr. Aitken. The porter, Ross Little, was at the bottom of the bed. Between them they moved the bed out of the room and along towards the lift. On leaving the room Mr. Aitken gestured to one of the nurses. As they were leaving the room and proceeding along the corridor they were joined by Christine Wood. The bed was pushed and pulled along the corridor by John McGill and Ross Little. During this, Ross Little observed Mr. Aitken as having his eyes open and appearing to be fine although his head was sweating. Mr. Aitken gestured to his wife who approached the bed. As they were about to enter the lift, Christine Wood told John McGill that Mr. Aitken did not look right. John McGill, who had no view of the patient during the journey along the corridor, looked at him and noticed he had a terrible colour. His recollection was that the bag attached to the mask was inflated. He instructed that the bed be taken back to the room. There were differing estimates given by various witnesses of the distance between Mr. Aitken's room and the lift and the times taken to go to and from the lift and the room. An affidavit from Kathleen Henderson gave measurements which established that the distance was between 34 and 42.8 metres. On that basis, Ross Little's estimate of time of 15 seconds seems improbable. More likely is John McGill's estimate of 2 minutes. What was clear was that the journey back took less time.

(e) The Aftermath of the Transfer

[23] Shona Graham heard John McGill shout for help as Mr. Aitken was taken back to his room. She called for a resuscitation team. In her evidence she said that she had forgotten about the "not for resuscitation" instruction and accepted that if she had

remembered she would probably not have done so. She went to the room to see if she could help. In the room at the time were John McGill at the head of the bed, Dr Holden at the side of the bed and Christine Wood at the sink. She was upset and Shona Graham took her out of the room. Dr Jefferson arrived as she reached the room. Dr Holden appears to have reached the room first after John McGill returned with the bed. He checked Mr. Aitken and found that he was not breathing and had no pulse. He considered that the previous decision not to resuscitate should stand and was preparing to confirm death when Dr Jefferson arrived. Dr Jefferson checked the oxygen equipment and saw that the cylinder was turned off. None of the witnesses recalled turning off the cylinder at any stage after it was attached to Mr. Aitken. Most were quite definite that they had not done so. In light of that Dr Jefferson and Dr Holden considered whether resuscitation should be attempted. They jointly concluded that, against the background which had led to the previous resuscitation decision but also the time which had elapsed since Mr. Aitken had stopped breathing (in excess of four minutes) and the likelihood of hypoxic brain damage, and the already impaired lung function, resuscitation would not be in Mr. Aitken's best interests. There was no evidence to suggest that this was other than a reasonable decision and a correct one.

[24] There was conflicting evidence about the bag attached to the mask which delivered the oxygen to Mr. Aitken. John McGill recollected seeing it inflated when he instructed the return to Mr Aitken's room. Dr Holden was very sure that he saw the bag inflated after he entered the room following Mr. Aitken's return there. Christine Wood does not appear to have looked at the cylinder after the return to the room and I have no note that she was asked about whether she had seen the bag inflated or deflated during the transfer. Shona Graham seems to have been in the room only briefly before she took Christine Wood out and did not see the cylinder or the bag. Dr Jefferson was unable to say whether the bag was inflated or deflated when he noticed that the cylinder was switched off. He said that he did not know.

Disputed Areas of Fact Arising in the Course of the Inquiry

(a) The Oxygen Supply to Mr Aitken During the Transfer

[25] One thing is certain. At the time when Dr Jefferson entered Mr. Aitken's room the supply from the portable oxygen cylinder was switched off. He did not switch it off. Both Dr Holden and John McGill denied doing so. John McGill's evidence was that he had switched it on prior to the transfer but his evidence was couched in guarded terms ("in my mind"). That Mr Aitken could manage for some time without oxygen was suggested by what had happened earlier in the afternoon when the supply had been disconnected for about ten minutes. He was wearing the mask and, presumably, breathing into it. John McGill had no means of knowing during the transfer if the oxygen was switched on. He could not see the valve on the cylinder. Until he was alerted by Christine Wood he did not have a view of Mr Aitken. There was no portable monitor which might have indicated a reduction in the blood saturation levels. There were two possibilities about how the supply from the portable cylinder came to be switched off. Either it was never switched on. Or it was switched off at some time during the transfer. John McGill was holding the cylinder in the area of the knob which switched the supply on. He might have turned it off accidentally. Having seen the device operated and handled it, that seems unlikely. The regulator valve operated by a series of clicks as it was turned from "Off" to "15". In my opinion, it is simply not possible for that to have been turned accidentally from "15" to "off" without John McGill being aware of it. The cylinder valve required a reasonably firm action to turn it. Again, it seemed improbable that this had been turned off by accident. Apart from John McGill's impression that he had turned the supply on, the only other evidence that it had been turned on was that of the inflated state of the bag. On the basis of the evidence which I heard that could also be explained by the one way valve mechanism on the mask. The bag was being filled from the wall supply. That it would not deflate immediately, or even within a few minutes of being removed from that supply, can reasonably be inferred from what I observed when Dr Marshall switched off the supply during his evidence (Paragraph [20]). Nor can I discount the possibility that Dr Holden and Mr. McGill, though they may have seen the bag partially inflated, are mistaken as to the extent of that inflation. In fact neither was precise on the point. So I

conclude, on the balance of probabilities, that the supply was not turned on by John McGill when the tube and mask were attached to the portable cylinder.

(b) Whether the decision to change Mr. Aitken's status to "not for resuscitation" should have been discussed with him or his family

[26] There were two aspects to this. The first related to the practice guidelines around the subject. These were spoken to primarily by Dr Marshall and are contained in a joint statement by the British Medical Association, the Resuscitation Council (UK) and the Royal College of Nursing issued in 2007. In short, these recommended that where a patient had not expressed a wish to discuss cardiopulmonary resuscitation (CPR) it was not necessary or appropriate to initiate discussion to explore their wishes. But also that careful consideration should be given to a decision not to inform the patient. In most cases patients should be informed but, for those approaching the end of their lives, information about interventions which would not be clinically successful will be unnecessarily burdensome or of no value. The second was whether the decision itself was a reasonable one. Dr Marshall explained that CPR was a treatment, though not one of the patient's underlying condition. His opinion was that, given Mr. Aitken's condition, a cardiac arrest would have been an end stage event and that the decision not to attempt resuscitation was entirely reasonable. He agreed that, in Mr. Aitken's circumstances, there was "certainly" a low chance of re-starting the heart. At one point in his evidence he suggested that the chance of CPU being a success was 1%. Dr Holden was of the view that such intervention would have been distressing to Mr. Aitken and futile. In his discussion with Dr Holden before the transfer, Dr Jefferson had concurred in the view that resuscitation should not be attempted if there were an arrest during the procedure in the ICU. There was no evidence which contradicted these conclusions that the decision not to attempt resuscitation was a reasonable one. And, in the end of the day, I did not understand it to be argued otherwise on behalf of Mr. Aitken's family.

[27] The evidence from Dr Holden and Dr Marshall was that, in terms of the guidelines and Mr. Aitken's condition, there was no obligation to discuss the decision with him or his family but Dr Marshall's view was that it was always better to be as open as possible and to attempt to carry the patient and the family with the decision. He

acknowledged that this could lead to some very difficult and uncomfortable discussions. I gained the impression that, on reflection and in retrospect, Dr Holden perhaps regretted not having discussed the issue with Mr. Aitken and his wife. He had attempted, on more than one occasion, to discuss whether it would have been better for Mr. Aitken to allow the medical staff to concentrate on palliative care rather than treatments which he felt would do little good and were likely to cause additional suffering and distress. Although he made it clear that active treatment would not have ceased for as long as the patient wished it. I believe him when he said that he had attempted these discussions; most recently just before the transfer was confirmed on the afternoon of Mr. Aitken's death. But it was clear from the evidence of Mrs. Aitken that her husband and the family wished all possible treatment to continue and that they believed that Mr. Aitken might recover to the point where he might return home. So there was a significant failure of communication. What is clear however is that active treatment was being continued even although Dr Holden had doubts about doing so. It was the continuation of that treatment – the intended balloon dilation – which precipitated the transfer during which Mr. Aitken died. That may have unrealistically increased the optimism of Mr. and Mrs. Aitken.

[28] Given the evidence about the guidelines and Mr. Aitken's condition, it is difficult to conclude definitely that Dr Holden should have discussed the "not for resuscitation" decision with Mr. and Mrs. Aitken but he could have done so and it would probably have been better if he had. That is not to say that the decision would have been different because, in the end of the day, it was a clinical one about Mr. Aitken's treatment and within Dr Holden's discretion. The evidence points to it being one which was justified.

Reasonable precautions, if any, whereby Mr. Aitken's death might have been avoided

[29] Section 6 of the 1976 Act permits consideration of any reasonable precautions which might have avoided Mr. Aitken's death and a finding to that effect if appropriate. In that consideration it must be remembered that Mr Aitken was very ill before the transfer commenced. Dr Marshall was of the view that it was likely that Mr. Aitken's condition had deteriorated in the period after he was nebulised at approximately 16.00 (when the oxygen supply had been removed for ten minutes). He felt that could be

implied from the fact that the cardiac arrest during the transfer took place when the cessation of the supply of oxygen was for a shorter period. The evidence of Dr Holden and Dr Jefferson suggested that there was a relatively strong possibility that Mr Aitken's position could have deteriorated at any time, whether before or during his transfer to the ICU, when he was being treated there or during the dilation procedure or any other subsequent surgical intervention. Death might have occurred at any of these times. That was their evidence. But, of course, the issue at the Inquiry was focussed on the death of Mr Aitken at the time and in the circumstances when it actually occurred; not on speculation about some possible future event, even if such an event might be possible, or even probable, in the relatively near future.

[30] The standard which the court must apply in addressing that question is different from that in a civil action based on, for example, the negligence of nursing or medical staff. "Would" is not the test. The test is "might". The word has been discussed in a variety of Determinations in other Fatal Accident Inquiries. In the most recent edition of the standard text book on the subject (Carmichael: *Sudden Deaths and Fatal Accident Inquiries* 3rd Edtn. at page 174) it is suggested:

"What is required is not a finding as to a reasonable precaution whereby the death or accident resulting in the death "would" have been avoided but whereby the death or accident resulting in the death "might" have been avoided..... Certainty that the accident or the death would have been avoided by the reasonable precaution is not what is required. What is envisaged is not a "probability" but a real or lively possibility that the death might have been avoided by the reasonable precaution."

[31] Another useful expression of what is intended by the use of the word "might" may be found in a Determination by Sheriff Lothian (*Kyle Brown*, Edinburgh, 1 October 2007) where he says:

"The way that I consider this matter is to conclude that the sense of "might" is that the chance of survival cannot be completely ruled out."

[32] Applying the test in that way to the circumstances of Mr. Aiken's death, there were several such precautions which, it was agreed by all the parties to the Inquiry, might have avoided the death. I would stress, however, that to have done any of these things

would not have guaranteed Mr. Aiken's survival. Nor would that survival have been a probability. The evidence does not support either such conclusion. And the evidence of Dr Holden and Dr Jefferson suggested that there was a relatively strong possibility that Mr Aitken's position could have deteriorated at any time, whether before or during his transfer to the ICU, when he was being treated there or during the dilation procedure or any other subsequent surgical intervention. Mr Aiken was very ill before the transfer commenced.

[33] I deal below with the defective system about the transfers of very ill patients in Dumfries and Galloway Royal Infirmary which I have concluded contributed to Mr. Aitken's death. Several of the reasonable precautions which might have avoided Mr. Aitken's death, and which I now discuss, might have been taken, or might have been more likely to have been taken, if that system had not been defective. But all of them could and should have been taken irrespective of the lack of the clearly recognised and understood operating procedure for the transfer of very ill patients which has now been put in place.

[34] The MEWS system existed to give early warning of deterioration in a patient's condition and to ensure that this was brought to the attention of medical staff. It also allowed nursing staff who took over or became involved in a patient's care to have access to the history of that condition. To work effectively the system requires the regular recording of information about the patient's condition, including blood saturation levels. It was that information which provided the trigger for medical assessment of the patient and for possible treatment or intervention. The failure of Shona Graham to record the blood saturation levels regularly as the system required meant that an opportunity to note any deterioration was missed. Appreciation of that might have led to closer monitoring of Mr. Aitken during the transfer and earlier action when it became apparent that his condition was actually deteriorating. Such action might have avoided the death.

[35] I was satisfied that Dr Jefferson had instructed the continuous monitoring of Mr. Aitken's blood saturation levels throughout the transfer. That is what he said. I believed him. The actions of Shona Graham and John McGill in attempting to locate a portable monitor indicated that the need for continuous monitoring throughout the transfer was

understood. So the instruction was not carried out. And the inability to do so (clearly there was not a machine immediately available on the ward for which neither of the two nursing staff involved can be held responsible) was not drawn to Dr Jefferson's attention. That had two consequences. The first was that no machine was used during the transfer. That could have been avoided if Dr Jefferson had been told. His evidence was that he would have brought one from the ICU. But the more significant consequence was that the deterioration in the blood saturation levels which would have been caused by the lack of oxygen from the turned off cylinder might have been noted earlier with the possibility of action being taken which might have avoided the death.

[36] It was submitted on behalf of Mr. Aitken's family that a reasonable precaution would have been for Shona Graham to have recorded Dr Jefferson's instruction that the blood saturation levels should be continuously monitored in the nursing notes. It was suggested on behalf of the Health Board that that note might not, in any event have been read by John McGill. To some extent the issue is academic because I was satisfied that John McGill (whether because he had been told by Shona Graham or whether on his own initiative) was aware that a portable SATS machine had been sought. That could only have been for the purpose of monitoring these levels during the transfer. The evidence about whether Shona Graham had actually told him of Dr Jefferson's instructions was less clear. She was unsure if she had spoken to him about the instructions. Whether or not John McGill had been specifically told about the instructions, or whether he had simply assumed that there should be monitoring during the transfer, it is not unreasonable to infer that the recorded presence of these instructions in the nursing notes would have acted as a reminder of their importance and increased the possibility either of them being carried out or of Dr Jefferson being told that this was not possible. So I accept that the recording of the instructions was a reasonable precaution which might have avoided the death.

[37] Mr Aitken was deprived of oxygen during the transfer. A supply of oxygen might have avoided the cardiac arrest which led to his death. It follows that switching on the supply was a reasonable precaution which might have avoided the death.

[38] When the transfer commenced, John McGill was the only nurse in attendance with Mr. Aitken. It was only as the bed moved towards the lift in the corridor that he was joined by Christine Wood. And it was her direct observation of Mr. Aitken which drew attention to his deterioration. Dr Jefferson and the other medical witnesses all spoke to the importance of experienced medical and nursing staff looking at a patient and noting any signs of deterioration. Indeed, I formed the impression that they felt clinical observation was as important as mechanical monitoring. Dr Jefferson said that he would observe a patient during transfer. John McGill was at the head of Mr. Aitken's bed. He did not have a view of him. Dr Jefferson, in the context of the absence of the SATS monitor, described that as "not ideal". It would have been reasonable for John McGill to have observed Mr. Aitken during the transfer. Again, that would have enabled another opportunity to note deterioration with the possibility of earlier action which might have avoided the death.

[39] I heard a further submission on behalf of Mr. Aitken's family that it would have been reasonable for John McGill to have observed the dial on the oxygen cylinder during the transfer. If the oxygen had not been switched on that would have been apparent from the needle on the dial and the supply could have been switched on. I see the logic of that but doubt if, in the circumstances, that can be described as a reasonable precaution. The cylinder was a new one with a life in excess of the likely transfer time. If John McGill had been observing Mr. Aitken and also keeping an eye on the monitor which should have been there it hardly seems necessary or reasonable to be looking at the capacity dial on a new cylinder.

Defects in the system of working which contributed to the death of John Aitken

[40] Much of the evidence about this related to the factual background which I have already described; and came from the witnesses who spoke to it. But there was also important evidence from Dr McCulloch who had instructed a Significant Incident Review following Mr Aitken's death. The report of the Review formed Crown Production No. 10. Other significant documents which were spoken to by witnesses were "Guidelines for the transport of the critically ill adult" issued by the Intensive Care Society in 2002 (Crown Production No. 6) and "Standard Operating Procedure for the Transfer of very ill Patients

or Patients at High Risk of Deterioration within Dumfries and Galloway Royal Infirmary/Cresswell Maternity Hospital” (Crown Production No. 24). There were also various earlier versions of that document (Crown Productions Nos. 7 and 25). Several of the witnesses were referred to these documents.

[41] The Significant Incident Review concluded that there were several care delivery failures and a service delivery failure; and I have described these at Paragraph 4 of this Determination and found them to be defects in the system of working which contributed to Mr. Aitken’s death. None of the parties to the Inquiry sought to argue that I should do otherwise. Although there were different aspects to these defects the most significant central feature was that there was not, at the time of Mr. Aitken’s death, a clearly recognised and understood policy, protocol or operating procedure for the transfer of very ill patients within Dumfries and Galloway Royal Infirmary. Dr McCulloch’s evidence was that there was a “well understood system” where very ill patients were being transferred and that they were dealt with on a particular basis which was well understood by nursing staff. He added that the policy was being written at that time (meaning the time of Mr. Aitken’s death). That was not supported by much of the evidence which I heard. Shona Graham seemed unaware of any such policy or procedures; or at least unsure if she had seen any documents about it prior to Mr. Aitken’s death. John McGill said that he went in search of some document which described it but was unable to find it. That indicated to me that he was at least unsure of the procedure. Dr Holden, although such transfers were to be carried out by nursing staff, seemed unsure of what any such policy or procedures might be. Nor was it clear what stage any policy development was at. There was evidence from Dr McCulloch that a draft of some sort was in circulation and would have been seen by those who had been invited to comment on it. There was no evidence about that draft; nor was a copy of it a production. Production 24, which is the document which describes the procedure now in place was issued in October 2010 and is an updated version of a September 2009 document. That document appears to be Production No. 7. But there was also Production No. 25 which is dated July 2009 and is in very similar terms. All these documents post date Mr. Aitken’s death. Dr Holden said that he had seen the September 2009 document but had not looked at it in great detail. He was also referred to the July 2009 document but seemed unsure if these were the

guidelines in place at the time of the death. John McGill recognised the July 2009 document as one which had come out and had become a policy. He confirmed that the “Standard Operating Procedure” document (Production No. 24) was now on the wall on the Ward. So there was no evidence that the policy development had reached any advanced stage at the time of Mr. Aitken’s death; or that any such policy had been circulated for action by staff, as against consultation; or that any training on the policy and its procedures and requirements had been given to ward staff.

[42] Dr Jefferson was aware of the Intensive Care Society guidelines but he explained that these were really aimed at patients already in an ICU and being transferred to another such unit or being transferred for tests or examinations in other departments within the same hospital. He expanded on that by saying that, before his transfer, Mr. Aitken was properly described as a Level 2 patient – one where there was simple organ failure. In Mr. Aitken’s case that was demonstrated by the respiratory support which he required. A level 3 patient, at which the guidelines were aimed, was one with multiple organ failure and likely to be in an ICU or treated on the ward as if in one. While Mr. Aitken would probably have entered that category after his intended operation it was not anticipated that he would be at that level before the procedure. So, although Dr Holden and the nursing staff were unfamiliar with these particular guidelines, they cannot, in my view, be criticised for that. These guidelines had a role to play but it was more in relation to the development of a policy for transfers within the hospital rather than in their direct application by staff in relation to transfers.

[43] The “Standard Operating Procedure” which has evolved in Production No. 24 demonstrates clearly the system which is necessary in the transfer of patients such as Mr. Aitken. It sets out the situations where the procedure applies (among others, transfer to a critical care area). It lists the sorts of vulnerable patients to whom it applies (among others, patients with a high MEWS score and patients dependent on oxygen therapy). It specifies that a registered nurse must always accompany the patient and also either an anaesthetist, a doctor or an experienced ICU, recovery or anaesthetic nurse. Equipment required is listed. That includes, among others, an adequate supply of oxygen (in some instances an additional cylinder) and a SATS monitor. Much of this follows what is to be found in the Intensive Care Society guidelines. I have identified these aspects of the

system now in place for the transfer of patients because they were the ones which were not clearly and systematically specified and understood by staff at the time of Mr. Aitken's transfer and death. It was the failure to have in place a system for transfer which incorporated these features which was defective.

[44] In other circumstances I would have made recommendations that what were identified as failures in the Significant Incident Review should be addressed. But that has largely been done and the development of the "Standard Operating Procedure" appears to achieve that. I was told that staff who are likely to be involved in transfers of very ill patients have received training in what the "Standard Operating Procedure" requires. So it is not necessary to recommend that this be done.

[45] The Health Board are to be commended on the prompt commissioning of the Significant Incident Review and on the progress which has been made in implementing the recommendations for action which it identified. That is a benefit which has derived from the sad circumstances of Mr. Aitken's death; and a benefit which it was clear was one of the principal motivations of his family in seeking that a Fatal Accident Inquiry be held. I hope that what has been done is at least some comfort to them. But none of this should disguise that, in relation to transfers of very ill patients, the system in operation in Dumfries and Galloway Royal Infirmary at the time of John Aitken's death was defective and contributed to that death.

Other facts relevant to the circumstances of the death

[46] I have dealt with the issue of the change in Mr. Aitken's status to "not for resuscitation" and, to some extent, with that of communication with him and his family. The Crown made no submission that I should make any particular findings about either of these issues. That was also the position adopted on behalf of the Health Board.

[47] Dr Holden's admitted lack of knowledge of the operation of portable oxygen cylinders was criticised on behalf of Mr. Aitken's family. I am not sure that was justified; and it was not really relevant to the circumstances of Mr. Aitken's death. He was not himself involved in the transfer and it was not anticipated that he would be so.

[48] The most significant issue in relation to other facts relevant to the circumstances of the death was that of communication with Mr. Aitken and his family; particularly by Dr Holden. Here again neither the Crown nor the Health Board pressed me to make any findings or recommendations. On behalf of Mr. Aitken's family the submission really boiled down to my perhaps recommending that the Health Board might review ways in which they could assist their staff in communicating with patients and their families more effectively. The background to that was not only the circumstances of Dr Holden's discussions about the seriousness of Mr. Aitken's condition, but also the circumstances in which his death was communicated to Mrs Aitken. That was done in a lift in the hospital following what appeared to be a chance meeting between her and Dr Holden when she had come back into the hospital not long after Mr. Aitken had left his room when the transfer commenced. I have to say this did not seem the most appropriate place to relay to her what was inevitably going to be distressing news. Unfortunately, this was not put to Dr Holden when he gave evidence, so I do not know whether what Mrs Aitken said would have been accepted by him or, if it were, what his explanation might have been. Against that background I am reluctant to form any firm conclusion or make any recommendation.