2011 FAI 15

SHERIFFDOM OF TAYSIDE, CENTRAL AND FIFE AT DUNFERMLINE

DETERMINATION

of

Sheriff John Craig Cunningham McSherry in Fatal Accident Inquiry concerning the death of Mrs Norma Kirk under the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976.

7th March 2011

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

1. In terms of section 6(1) (a) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 (the Act), that Mrs Norma Kirk, (Mrs Kirk), whose date of birth was 14th October 1945, latterly residing at 43, Largo Road, Lundin Links, Leven, Fife KY8 6DH, died at Queen Margaret Hospital, Dunfermline, Fife at 0825 hours on 27th October 2008.
2. In terms of section 6(1) (b) of the Act, that the cause of death was
    1. (a) Chemical Pseumonitis

(b) Aspiration of Feeding Material via Naso-gastric Tube

2. Atherosclerotic Coronary Artery Disease

3. In terms of section 6(1) (c) of the Act, there were no reasonable precautions whereby the death might have been avoided.
4. In terms of section 6(1) (d) of the Act, there were no defects in the system of working, which contributed to Mrs Kirk's death.
4. In terms of section 6(1) (e) of the Act, there were other facts relevant to the circumstances of Mrs Kirk's death.

NOTE.

In this enquiry the Crown was represented by Miss Nicola Henderson, Procurator Fiscal Depute, Fife Health Board was represented by Mr Pugh, Counsel, Drs Satish Ramm and Ailsa Howie by Ms Donald, Solicitor, and Staff Nurse Ariff Khattak by Ms Watt, Solicitor. There were twelve witnesses who gave evidence over four days. The parties agreed certain evidence by joint minute.

The Facts and Circumstances surrounding Mrs Kirk's Death.

1. On 11th July 2008, Mrs Kirk was admitted to the surgical unit of Queen Margaret Hospital for surgery on a perforated abdominal ulcer.
2. She developed post operational complications including pneumonia.
3. On 1st September 2008, naso-gastric feeding was established as a method of sustaining adequate nutritional requirement.

4. On 30th September 2008, following a formal assessment, a dietician decided that it was appropriate to feed her overnight. She was "Nil By Mouth".
5. On 14th October 2008, she was transferred to Ward 6 of the Rehabilitation Unit for ongoing rehabilitation and overnight naso-gastric feeding continued.
6. On 23rd October 2008, at approximately 2030 hours naso-gastric feeding was due to be commenced. A tube was passed by Staff Nurse Arif Khattak.
7. SN Khattak had passed approximately 500 such tubes in his experience.
8. He noted that no gastric aspirate was able to be obtained.
9. At approximately 2100 hours, he changed her lying position and again no gastric aspirate was obtained.
10. SN Khattak contacted Advanced Nursing Practitioner Alistair Lawrie.
11. ANP Lawrie also tried to obtain aspirate without success.
12. ANP Lawrie requested Doctor Satish Ramm to authorise a chest x-ray.
13. Between approximately 1130 and 0000 hours on 24th October 2008, an x-ray was ordered and undertaken by the radiology department.
14. Dr Ramm, who was the First Year 1 doctor on call for Ward 6, reviewed that x-ray and believed that the tip of the tube was below the diaphragm.
15. Dr Ramm sought a senior opinion from the Senior Registrar on call, Doctor Ailsa Howie.
16. Dr Howie viewed the chest x-ray and was also of the opinion that it showed the tube below the diaphragm.

17. The interpretation of the x-ray by both Doctors Ramm and Howie was that the naso-gastric tube was correctly positioned in the stomach.
18. This interpretation was erroneous.
19. On 24th October 2008, at approximately 0045 hours SN Khattak received verbal confirmation that the tube was in the correct position and was advised to commence naso-gastric feeding and medication. The food was delivered at 120 millilitres per hour. 20 millilitres of liquid morphine was also administered by SN Khattak as Mrs Kirk was suffering severe back pain.
20. At 0130 hours SN Khattak checked Mrs Kirk who was asleep and showed no signs of distress.
21. At 0330 a further 20 millilitres of liquid morphine for chronic back pain was administered by SN Khattak at Mrs Kirk's request. The naso-gastric feeding was running to time and Mrs Kirk was alert and orientated with no evidence of respiratory distress.
22. At 0545 hours SN Khattak found Mrs Kirk to be distressed with breathing difficulties. He contacted ANP Lawrie.
23. ANP Lawrie noted Mrs Kirk's increased respiratory rate, low oxygen saturations; fall in blood pressure and tachycardia. The Hospital at Night team was contacted.
24. At 0550 hours the naso-gastric feed was discontinued and oxygen therapy was commenced. Blood samples were obtained and sent to the laboratory. An electrocardiogram was taken and a further x-ray was requested. A regular recording of vital observations was taken.

25. At 0800 hours there was a handover from the Hospital at Night team to the on day medical staff.
26. At 0845 hours Mrs Kirk was reviewed by the Consultant Geriatrician Doctor John McKenzie and intravenous antibiotic therapy was commenced. Physiotherapy and aspiration were also employed.
27. The x-ray, which had been authorised initially by Dr Ramm was reviewed by the Dr McKenzie, who determined that the naso-gastric tube was located in the right pleural cavity with accumulation of fluid believed to be naso-gastric feed.
28. Mr Kirk attended the Ward and was given an explanation of the cause of the deterioration in Mrs Kirk's condition and was advised of the management plans envisaged for her.
29. The Consultant Radiologist and Dr Nicola Chapman, Consultant Physician, reviewed both x-ray examinations and also concluded that the initial x-ray demonstrated that the position of the naso-gastric tube was in the right pleural cavity.
30. Mrs Kirk remained stable until mid-afternoon.
31. A further x-ray examination was requested by Dr McKenzie.
32. There was a further deterioration in her condition while in the radiology department and Mrs Kirk was admitted directly from radiology to the MHDU at 1600 hours.
33. From 24th to 27th October 2008 Mrs Kirk remained in the MDHU with initial improvement followed by further deterioration.
34. At 0825 hours on 27th October 2008 she was pronounced dead.

Submissions.

The Procurator-Fiscal Depute, Nicola Henderson.

She commenced by commenting on the devastating effect the death of Mrs Kirk had had on her husband. They had a very close relationship but Mrs Kirk in recent years had not kept great health. He last saw his wife alive on 23rd October 2008. The pain of reinsertion of the naso-gastric tube, complained of by Mrs Kirk a couple of days before her death, could not be regarded as affecting her death. She went on to detail the evidence led by each witness. She made criticism of the apparent lack of training in the insertion of naso-gastric tubes; the absence of written instruction to call for x-ray when no aspirate was obtained; the lack of contemporaneous notes; although information on reading x-rays was now in place for doctors commencing work, there was no check on their expertise. She did not ask me to include a finding under section 6(1) (c) of the Act while stating that there could have been the precaution of not having night feeding by naso-gastric tube and no replacement of the tube after 5pm. There could have been further training in reading x-rays. Similarly, she did not invite me to make a finding under section6 (1) (d). She invited me to make a finding under section 6(1) (e) of the Act as it was clear from the evidence that there had been significant improvements made by NHS Fife but the power point training in reading x-rays was simply left to the induction of new doctors with no check being made as to their competence. The proposed new protocol was still in draft format.

Ms Donald for Doctors Ramm and Howie.

She invited findings under section 6(1) (a) and (b). There was no evidence of any reasonable precaution which could have been taken whereby Mrs Kirk's death might have been avoided. She accepted that Dr Howie's ultimate decision to proceed with the naso-gastric feed was an error, which Dr Howie recognised.

Ms Watt for SN Khattak.

She also invited findings under section 6(1) (a) and (b).

Mr Pugh for Fife Health Board.

He, similarly, invited findings under section 6(1) (a) and (b). He made mention of the protocol in place at the relevant time and the adherence of staff to it. There had been training and there were now changes in the protocol and training. While there was no mention of going on to request an x-ray if no aspirate was found, this is what was done. Each junior doctor had training in a variety of departments. If unsure, the practice was to ask a more senior doctor. There was a new protocol envisaged in documentation which was described as an "entire multi-disciplinary pathway" and was in draft form and was presently out for consultation.

Conclusions.

1. Cause of Death.

Dr David Sadler conducted a post mortem examination of Mrs Kirk. She had had a large open wound to her abdomen from the previous operation and this wound had been healing well with no infection. In the autopsy she was found to have a large accumulation of infected fluid, empyema, in the chest cavity between the lung and the chest wall. There were several hundred millilitres. The lower area of

her right lung was solidified due to pneumonia as a result of the aspiration of feeding material. There was a bacterial infection of the lung tissue. It was the inhalation of feeding material, which irritated the lung tissue, chemical pneumonitis. The empyema was a secondary effect of that. The aerated tissue had been filled with fluid which coagulated into the hardening of the lung. Mrs Kirk also had atherosclerotic coronary artery disease. He made a separate finding of this as a cause of death, as it was likely to have been a contributory factor in Mrs Kirk's death, although it was not the prime cause. As Mrs Kirk had heart disease, she was also susceptible to other conditions. He was unable to say whether Mrs Kirk would have survived, if she had not had coronary artery disease. The lung problem was the greater threat to Mrs Kirk, as she had had her heart problem for years.

2. Other facts relevant to the circumstances of Mrs Kirk's death.

I have made a finding under this heading as there have been changes to the protocol employed and training since Mrs Kirk's death. In doing so, I am not accepting that there was any other direct cause of Mrs Kirk's death than a clinical error of judgement in misreading the chest x-ray.

Protocol.

While there was no mention of calling for a chest x-ray, if no aspirate was found, in the existing protocol at the time, it was widely accepted by all the witnesses that this was done as a matter of course. SN Khattar and SNP Lawrie were both quite clear on this. An instruction to this effect has now been put in writing in the new protocol, which is being finalised.

Night-time feeding.

Within a couple of weeks following Mrs Kirk's death, there was a change in the practice of naso-gastric feeding of patients as there is no longer night-time feeding and, if a naso-gastric tube falls out, it is not to be replaced after 5pm. The reason for this is that there are fewer nurses, doctors and senior medical and radiological staff available during the night. Dr McKenzie, who was the Consultant in Geriatric Medicine, said that he had worked in England and Australia and the practice he had observed there was that, if a naso-gastric tube was out after 5pm, it would not be replaced until the following day.

Training in interpreting x-rays.

Doctors Howie and Ramm believed that, if the tip of the naso-gastric tube was below the diaphragm, the tube must be in the stomach. Dr Howie did not appreciate that, if the tube had gone into the lung, it could appear on the x-ray as below the diaphragm. Dr Wendy Robinson, who was in charge of the care for the elderly in Queen Margaret Hospital, said that she had checked the x-ray with Dr McKenzie and it was quite clear to her that the tip of the tube was at the base of the right lung and not in the stomach. Dr Ramm had correctly followed procedure in asking a more senior practitioner, Dr Howie, for her opinion. Dr Robinson confirmed that junior doctors were now trained in the interpretation of x-rays. Dr McKenzie, said that he would look for the tube going straight down the midline and left into the gastric area, the stomach. He saw that the tube was probably in the right lung. He also confirmed that training in interpretation of x-rays had been introduced by NHS Fife. I had questioned the quality of the x-ray image produced to the court. I thought it to be extremely hazy. Dr Alan Shepherd also said that

the x-ray image was the poor. However, if the definition is changed on the computer screen, the image becomes much clearer. Dr Nicola Chapman, Consultant Physician, said that when she viewed the x-ray, she had difficulty in seeing exactly where the tube was. She raised this with the radiology staff and on their screen the image was much clearer. Dr Chapman was involved in the internal review following Mrs Kirk's death and produced the training package. There was now a much lower threshold, if one was unsure. The protocol was to speak to more senior staff or the radiology department. This would be done during the day. There was, however, no guarantee that a mistake might not be made in the future. She said that she would not have expected Dr Howie, given her level of experience and grade, to make this mistake. Dr Robert Cargill, Consultant Cardiologist, who convened the incident review, also expressed such surprise.

I make no criticism of the fact that the protocol document dealing with many other matters as well as those mentioned in this case, is still in draft form as there are many agencies, which require to approve it. It is not a matter to be rushed, particularly when the evidence was that the new protocol in respect of the matters raised in this case was being followed in any event. The use of power point images and directions to junior doctors in the training in interpreting the x-rays makes sense to me. No matter how comprehensive training may be, there is always the possibility of human error.

My sincere condolences go out to Mr Kirk.

John Craig Cunningham McSherry

Dunfermline,

7th March 2011