CORONERS ACT, 2003

SOUTH  *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 3rd, 4th, 5th and 13th days of April 2012, by the Coroner's Court of the said State, constituted of Anthony Ernest Schapel, Deputy State Coroner, into the death of Janis Mary Proctor.

The said Court finds that Janis Mary Proctor aged 56 years, late of 35 Suzanne Avenue, Morphett Vale, South Australia died at the Royal Adelaide Hospital, North Terrace, Adelaide, South Australia on the 22nd day of February 2008 as a result of multi-organ failure complicating severe burns on a background of alcoholic liver disease and alcohol-related cerebellar disease. The said Court finds that the circumstances of her death were as follows:

1. Inquest Finding

1.1. This was an Inquest into the death of Janis Mary Proctor, aged 56, who died at the Royal Adelaide Hospital (RAH) on 22 February 2008. Mrs Proctor had been admitted to the RAH Burns Unit on Tuesday 19 February 2008. On that day Mrs Proctor had been transferred from the Flinders Medical Centre (FMC) where she had sustained severe scalding burns to 75% of her body while taking a shower in Ward 6D. Following her transfer to the RAH, Mrs Proctor was taken to theatre for debridement of the burns and was then treated aggressively with intubation, ventilation and full inotropic support with antibiotic and steroid therapy. Notwithstanding treatment, she developed progressive multi-organ failure and died as indicated on 22 February 2008.

1.2. The incident in which Mrs Proctor sustained her burn injuries had involved her being placed on a chair under the shower and then being left on her own for what appears to have been a number of minutes. In that period of time the temperature of the water under which Mrs Proctor was showering increased to a dangerous level. By the time nursing staff returned to the ablutions cubicle, Mrs Proctor had sustained very serious burns to the majority of her body.

1.3. A post-mortem examination of Mrs Proctor's remains was conducted by Dr Karen Heath who is a forensic pathologist at Forensic Science South Australia. The examination consisted of an external examination only. Dr Heath provided a report to the Inquest[1]. In the course of Dr Heath's examination she noted that Mrs Proctor had sustained burns involving greater than 75% of the total body surface area. Dr Heath expressed Mrs Proctor's cause of death as multi-organ failure complicating severe burns on a background of alcoholic liver disease and alcohol-related cerebellar disease. I find that to have been the cause of Mrs Proctor's death. The substantial causative factor in her death was plainly the sustaining of her severe burns.

1.4. Mrs Proctor's admission to FMC in the first instance had taken place on 14 February 2008. It is pertinent to record the reason for that admission. Mrs Proctor had a past history of alcohol abuse with secondary cirrhosis of the liver and oesophageal varices, cerebellar atrophy, breast cancer with metastases, a hysterectomy, depression and previous fracture of the hip. She had a history of recurrent episodes of collapse at home with previous hospital admissions due to collapse because of electrolyte disturbances in the blood involving low sodium and low potassium levels. She was admitted to FMC on 14 February 2008 after a collapse at home. Investigations showed markedly low sodium and potassium levels and also hypotension. She also had a suspected urinary tract infection. I add here that there is no evidence of a history of collapses due to periods of unconsciousness.

1.5. There was a considerable body of evidence led in the Inquest as to Mrs Proctor's poor level of mobility. I do not need to go into all of the sources of this evidence. Suffice it to say, Mrs Proctor was very unsteady on her feet, and her movement at FMC while on her feet required the use of a walking frame. In particular, Mrs Proctor experienced difficulty in getting in and out of bed and also getting out of a seated position in a chair. The evidence of an FMC physiotherapist, Ms Sonya Hartwich,

[1] Exhibit C3b

who examined Mrs Proctor on 18 February 2008, was to the effect that Mrs Proctor would have had difficulty in extricating herself from a seated position in a chair if required to do so with urgency. Ms Hartwich observed that Mrs Proctor struggled with this activity and was slow and for that reason Ms Hartwich stayed close by[2]. In Ms Hartwich's assessment, Mrs Proctor would have needed someone with her when getting out of a chair[3]. It is not difficult to envisage situations that might arise during the showering of a person while seated which would need the presence of another person to assist. The clearest example that would come to mind is the need for the person to move quickly out of the shower stream if it became too hot.

1.6. Mrs Proctor's lack of mobility must have been obvious to any person closely associated with her clinical management. She was assessed as requiring a regime known as 'standby assist'. During the Inquest evidence was given in relation to the interpretation of that expression. The interpretation favoured by the members of the nursing staff who gave evidence in this Inquest was to the effect that one would, as a carer, standby and assist in situations involving patient mobility, for example when getting out of bed, walking with or without a frame and rising from a chair to a standing position. However, as far as showering was concerned, it would involve helping the patient into the shower but not actually being present while the patient showers him or herself. The assistance would be limited to matters such as the setting up of the shower including the setting of the water temperature. A safety level 2 patient, as Mrs Proctor was deemed to be, would have a showering regime that involved being seated in a commode chair. The shower cubicle had rails within it to aid in the stability of the patient[4]. Registered Nurse June Leschke who worked in Mrs Proctor's ward at FMC gave evidence that in some circumstances a nurse would stay with the patient during showering and not leave them on their own. She gave as an example a patient showering within the first day after surgery that had involved an anaesthetic. On the other hand, she opined that if a patient had been on the ward for some time and was semi-independent, then one would stay with the patient at the patient's option having regard to the fact that, generally speaking, not all patients

[2] Transcript, page 73
[3] Transcript, page 83
[4] Transcript, page 91

want scrutiny whilst in the shower. When pressed as to what adverse event might befall a showering patient, RN Leschke said:

> 'Either they could fall off the chair or they could turn the water on because the water fluctuates, the temperature, so they could turn it on hotter than they need or colder.' [5]

1.7. When asked to explain how the water temperature might fluctuate, RN Leschke agreed that the water temperature might increase or decrease without anyone actually manipulating the taps when the taps were first turned on[6]. RN Leschke went on to say that she would never leave the patient until the water temperature was settled[7].

1.8. Registered Nurse Sian Wilson was the member of nursing staff who had set Mrs Proctor up in the shower before the fatal event. Ms Wilson told the Court that in fact she had warned Mrs Proctor about the water temperature becoming very hot. She gave as her reason for so warning Mrs Proctor that there was no middle range between hot and cold and that the shower temperature was very difficult to get warm. She said:

> 'It's either hot or cold and there's a little bit of warm in the middle so it can change.'[8]

When asked as to what it was that could change, Ms Wilson explained that one minute the water would be a bit warmer than it had been a minute before and it would readjust itself. She went on to explain that Mrs Proctor would need to be aware that this could happen, although it did not happen very often[9].

1.9. It is as well to record at this point that a patient by the name of Ms Assunta Mariano, who that morning had utilised the shower prior to Mrs Proctor, noted that the 'water seemed to get hotter on its own'[10]. In her statement Ms Mariano describes having to turn off the hot water twice to bring the temperature down to a tolerable level. Ms Mariano suggests that she did not think that this was strange as the shower taps seemed a bit sensitive and needed to be used carefully. What Ms Mariano seems to be referring to here is the common experience that water temperature may fluctuate and occasionally require adjustment during the course of a shower.

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[5] Transcript, page 103
[6] Transcript, page 103
[7] Transcript, page 121
[8] Transcript, page 150
[9] Transcript, page 151
[10] Exhibit C4a, page 2

1.10. Mrs Proctor was considered mobile enough to have a cleansing regime that included showering while seated in a commode chair. Mrs Proctor's EXCELCARE plan records her showering requirements as involving 'SHOWER - NURSE ASSIST (< 30 MINUTES)'. There is no suggestion that this regime in itself was not appropriate.

1.11. Within her FMC file nursing notes it is revealed that on 15 February 2008 Mrs Proctor had showered 'with assistance' on a commode chair. Again, on 16 February 2008 it was noted that Mrs Proctor had a shower on a shower chair with assistance. The physiotherapist, Ms Hartwich, suggested that this implied that the assistance provided to Mrs Proctor during a shower would have involved the immediate presence of another person. However, as alluded to earlier, other evidence would suggest that this was not perceived by the nursing staff to have been an ongoing and routine requirement. The only other notation relating to Mrs Proctor's showering habits during her admission at FMC consists of a nursing handover note of 17 February 2008[11] that records that on that day Mrs Proctor 'showered'. It may well be the case that Mrs Proctor did not shower again until the incident of 19 February 2008. A nursing note timed at 8:45am on 19 February 2008 records the following - 'standby, assist with showering'. In fact, it was shortly after the recording of that nursing note that Mrs Proctor was taken to the shower where she experienced the fatal incident.

1.12. Evidence was led during the Inquest that the maximum temperature of hot water within the FMC complex as a whole was set and stored at 60ºC, which was thought to be a temperature sufficient to inhibit the development of legionella. By the time the hot water reached the taps it may have been a few degrees cooler. Naturally, in any ablution situation temperatures of this magnitude would need to be reduced by the addition of cold water to the showering stream.

1.13. Dr John Greenwood is the Director of the Adult Burns Centre at the RAH. He reviewed Mrs Proctor at the RAH upon her admission on 19 February 2008. In his statement he describes his review of Mrs Proctor, the details of which do not need to be repeated here. Dr Greenwood also explains in his statement that serious burns from exposure to hot water can be sustained more easily than might be imagined. Dr Greenwood states that the severity of injury in a scald burn is primarily dependent upon the temperature of the injuring agent and the length of exposure in terms of time to that agent. He suggests that the pre-injury health of the patient is also a relevant

[11] Exhibit C19, page 21

factor. Pre-existing disease such as liver, heart or kidney disease, diabetes and chronic obstructive airways disease diminish a patient's capacity to deal with a burn injury. It will be remembered that Mrs Proctor suffered from liver disease. Dr Greenwood suggests that the mid dermal burns sustained to what he estimated to be 60% of Mrs Proctor's body might normally have given rise to an expectation of survival, but that view was predicated on the assumption that the patient had no significant underlying medical problems. In a table that Dr Greenwood sets out in his statement he indicates that water at a temperature of 60ºC could inflict superficial partial thickness and mid dermal burns in 3 seconds. At the same temperature deep dermal and full thickness burns might be inflicted in 5 seconds. At 54.5C the times would be 18 and 30 seconds respectively. At 51C, 2 minutes and 4.2 minutes respectively. The exact period of time over which Mrs Proctor was exposed to hot water cannot be known with absolute precision. The registered nurse who set up Mrs Proctor's shower, that included the regulation of the temperature, suggested that she was away from the shower cubicle for less than 5 minutes before she discovered Mrs Proctor's plight. Suffice it to say, the very serious burn injuries sustained by Mrs Proctor were sustained in a relatively short period of time. In addition, the temperature of the water must have been significant.

1.14. All of this demonstrates that persons who are confined to hospital as a result of a number of illnesses might be more at risk of sustaining fatal burns from hot water than otherwise might be the case and that in any event patients need to be showered with care.

1.15. Evidence was adduced during the Inquest to the effect that in February 2008 a proposed thermostatic mixing valve project for the entirety of the FMC had yet to be implemented in Ward 6D. As I understand the evidence, the entirety of the hospital now has thermostatic mixing valves installed, so that water is delivered at a constant and predictable temperature. I have already referred to the reality as it used to exist in Ward 6D where the water temperature could fluctuate and would need to be corrected by manual manipulation of the taps, a fact that does not appear to have been lost on nursing staff within the ward.

1.16. On the particular day in question, the other complicating factor regarding the shower on the ward was the fact that work was being conducted in respect of the communication devices within the shower cubicle that would normally enable a

showering patient to communicate with nursing staff by means of a call bell. The bells were rendered inoperative for a period of time. I heard evidence that within the shower cubicle in question there were two buttons. The lower button operated a call bell that would alert the nursing staff on the ward to the fact that a person taking a shower required assistance. The other device was an emergency button that if pressed would result in an emergency team attending at the cubicle. According to the evidence of RN Leschke, at approximately 8am on the morning in question she was told by two maintenance officers that the call bells would be switched off for an hour or two. They also said that the emergency bells may or may not operate. RN Leschke and another registered nurse, who together had responsibility for the nursing staff throughout the entire ward during that shift, endeavoured to advise nursing staff on the two sections of the ward of the difficulty with operation of the bells that morning. The other registered nurse who had responsibility in this regard, RN Hillier[12], endeavoured to advise nursing staff in that part of the ward where Mrs Proctor was accommodated. In RN Hillier's statement she asserts that she recalls telling a Nurse Lopez. She does not purport to state that she advised Ms Wilson directly. It appears that not all of the nursing staff were made aware of the fact that the bells would not be working. There is evidence from a registered nurse, Yvonne Cross, who was called to give evidence and who provided a statement[13] to the Inquest, that she for one did not know anything about the bells not working that morning. RN Wilson has asserted at all times since this incident, including in her oral evidence on oath before the Court, that she herself did not know that the bells were not working. She vehemently asserts that if she had known this, she would not have left Mrs Proctor in the shower cubicle alone. I accept her evidence that she did not know of the difficulty with the bells and that if she had known of that difficulty she would not have left Mrs Proctor alone.

1.17. As to the incident itself, RN Wilson has provided detailed evidence. She made a statement[14] to investigating police. She also produced in evidence a statement that she herself prepared in the immediate aftermath of the incident in question[15]. As indicated, she gave evidence on oath at the Inquest. Although RN Wilson worked within the ward, this was the first occasion that she had come into contact with Mrs Proctor. RN Wilson did not believe Mrs Proctor to be exhibiting any deficit in mobility that would have affected her manual dexterity. In particular, RN Wilson told

[12] Exhibit C6a
[13] Exhibit C26
[14] Exhibit C25a
[15] Exhibit C25

the Court that she did not believe that Mrs Proctor would have any difficulty operating the call bell or reaching and adjusting the taps from a seated position[16]. RN Wilson said that she set the temperature of the shower and ascertained from the patient herself if the temperature was appropriate. She told the Court that she was given an assurance by Mrs Proctor that the latter would be able to manage the shower on her own. RN Wilson told the Court that she specifically warned Mrs Proctor that the water could get very hot and that she should be careful[17]. RN Wilson said that she asked Mrs Proctor on more than one occasion whether she would be alright in the shower and Mrs Proctor assured her that she would be. She showed Mrs Proctor where the button for the bell was and told her that if she used the bell she would return. RN Wilson then left the cubicle and performed some other tasks on the ward. Not long afterwards, she heard Mrs Proctor yell out and so she went back into the cubicle to see what the problem was. Mrs Proctor had dropped the soap and the water had gone cold. The temperature of the water was such as to require readjustment which RN Wilson performed herself. It does not appear to have crossed RN Wilson's mind as to whether or not in the light of the fact that the water had gone cold Mrs Proctor had been able to readjust the water temperature herself, or whether any fresh assessment of Mrs Proctor's ability to do so needed to be made. In any event RN Wilson readjusted the temperature herself and again left Mrs Proctor alone in the shower cubicle. On this occasion RN Wilson went to another and more distant part of the ward. Before leaving she reiterated that if there was any difficulty, Mrs Proctor could use the bell and she would return. RN Wilson states that she returned to the shower cubicle less than 5 minutes later and it was then that Mrs Proctor's plight was realised. There was much steam in the shower and the water was very hot. Mrs Proctor, who was still seated in the commode chair under the very hot stream of water, had suffered severe burns.

1.18. I do not need to describe the efforts that were made to resuscitate Mrs Proctor and relieve the situation except to say that the efforts in that regard were more than appropriate.

1.19. I am not critical of RN Wilson, accepting as I do that an element of hindsight is involved in identifying what went wrong in this case. I accept Ms Wilson's evidence that at no time did she consider Mrs Proctor to have been in any danger. I also accept,

[16] Transcript, page 149
[17] Transcript, page 150

as alluded to earlier, that she had been blindsided by the fact that the call bells were not working. I also accept that Ms Wilson's not remaining with the patient while showering was not outside accepted practice. However, in a situation where the temperature of the water might alter, it would have been difficult to be completely confident that a patient such as Mrs Proctor was safe in a shower cubicle on her own. Firstly, if there was a sharp increase in the temperature of the water to a dangerous level, it would have required an immediate response on the part of a person in Mrs Proctor's situation. It would have required Mrs Proctor to move rapidly out of the shower stream either by standing up and walking out of the cubicle or by wheeling the chair out of the cubicle. Neither of those actions could be guaranteed to have been performed with speed and at a time before she was completely overwhelmed with hot water and rendered incapable of any further action in respect of her own safety. Secondly, Mrs Proctor's safety was also based on an assumption that if she could not move quickly out of a dangerously hot shower stream, she would nevertheless have an immediate ability to use the call bell or adjust the water temperature herself by using the taps. This assumption appears to be based for the most part upon verbal indications by Mrs Proctor that she could do so. Even if she was capable of doing so, there was a further assumption that Mrs Proctor would be able to do so quickly enough so as not to be overwhelmed by and succumb to the hot water. In reality the one certain means by which Mrs Proctor could be assured of safety was if somebody was there to deal with any kind of emergency that arose.

1.20. In all of those circumstances, one would have to be satisfied that the patient could safely deal with an unexpected increase in the water temperature. It is difficult to see how one could be completely confident about that in a case such as Mrs Proctor's. That Mrs Proctor might experience difficulty in adjusting the water temperature, or in extricating herself from a hot showering stream in time not to be incapacitated by the scalding heat, would not have been entirely unforeseeable. In circumstances where the temperature might unexpectedly vary, and where there was good reason not to be totally satisfied of the patient's ability to extract him or herself from a situation of danger, it would have been preferable for a carer to have been present and on hand while the showering was taking place. It is difficult to escape the conclusion that Mrs Proctor's burns and death would thereby probably have been prevented.

1.21. I have given careful consideration to a submission made by Mr Bonig of counsel for the FMC that Mrs Proctor's fate might have been sealed by an unconscious collapse while in the shower and that this might explain why she did nothing to extricate herself from the stream hot water that then followed. I have already alluded to the fact that there is no evidence that Mrs Proctor had a history of unconscious collapses. In any event there are in my opinion other more attractive explanations such as a known lack of mobility on her part and a consequent lack of ability to rapidly extract herself from a situation of danger as presented by scaldingly hot water. In my view an unconscious collapse is an unlikely explanation for Mrs Proctor's failure to alleviate the danger. If Mrs Proctor experienced an incapacitating period of unconsciousness at all, it is more likely in my view to have been one of the complications of the trauma sustained by the stream of hot water.

1.22. Following this incident the FMC conducted a root cause analysis in relation to the incident. The investigation gave rise to a number of recommendations that, for the most part, related to the installation of thermal mixing valves and in ensuring that downtime experienced in relation to call bells and emergency bells was properly communicated to all staff. These measures are no doubt laudable. The root cause analysis team also identified other critical circumstances that contributed to this unfortunate outcome that included the observation that fluctuation in the water temperature was:

> '…normal and is the same principle that applies in a normal household when somebody is in the shower and somebody else in the house turns a cold tap on.'[18]

That being the case, a more fundamental contributing factor to this death might well have required greater emphasis and that is the fact that no carer was immediately present in order to assist the patient with a developing situation of danger caused by excessively hot water.

[18] Exhibit C16b, page 3 of 8 - Summary of Admission

2. Recommendations

2.1. Pursuant to Section 25(2) of the Coroners Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.

2.2. Ms Hartwich, the FMC physiotherapist, suggested in her evidence that issues such as patient safety and capabilities in a showering environment were not matters for a physiotherapist, but were matters for an occupational therapist. In fact, Ms Hartwich had envisaged that Mrs Proctor would be seen by an occupational therapist in preparation for her discharge from hospital so as to enable her to deal with her activities of daily living whilst at home. While that would have been an appropriate course to have been taken, it occurs to the Court that such an assessment by an occupational therapist would, in Mrs Proctor's then existing circumstances within FMC, have been appropriate in respect of her activities of daily living whilst in hospital, including her showering regime. It seems to me that regardless of the identity of a person who might assess a patient for such circumstances, be it an occupational therapist or some other individual, what is required in cases such as Mrs Proctor's is an assessment of risk posed to the patient by the intrinsic dangers involved in the individual patient's activities of daily living. On the other hand Mr Bonig for the FMC strongly suggests that the principal difficulty in Mrs Proctor's case was not the level of attention and scrutiny bestowed by nursing staff, but the fact that the thermostatic mixing valve system had yet to be established within the particular ward. As an extension, Mr Bonig would suggest that now that those devices have been since installed within the entirety of the FMC, this is a complete answer to the difficulty and that no further recommendation is needed, especially after the passage of time since the incident in question. I have carefully considered those matters. One difficulty is that not all institutions, including hospitals and nursing homes that accommodate the elderly and infirm, would necessarily have these devices at their disposal within showering cubicles. In addition, these findings will in any event serve as a reminder that showering regimes in institutions that cater for such persons require careful evaluation.

2.3. In all of the circumstances I make the following recommendations:

1) That the Minister for Health and Ageing cause to be drawn to the attention of the Chief Executive Officers of all public and private hospitals in South Australia these findings;

2) That consideration be given by persons in authority in hospitals and aged care facilities to the introduction of a risk assessment analysis structure in respect of appropriate showering regimes of patients and residents.

Key Words: Hot Water Burns

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 13th day of April, 2012.

Deputy State Coroner