

**Otago District Health Board**

**A Report by the  
Health and Disability Commissioner**

**(Case 07HDC15291)**



Health and Disability Commissioner  
*Te Toihau Hauora, Hauātanga*



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## Overview

Mr A had tetraplegia following an accident. Because of the tetraplegia, he had a permanent suprapubic urinary catheter which he managed with the assistance of community nursing staff.

On 10 June 2005, the catheter required changing, and Mr A's nursing staff were unable to replace it. Accordingly, he presented at Dunedin Hospital Emergency Department. Attempts were made to introduce a suprapubic catheter, but this proved difficult. Eventually, the on-call surgical registrar inserted the catheter, and Mr A was admitted to hospital to be observed.

On the morning of 12 June 2005, Mr A's condition rapidly deteriorated. He was subsequently admitted to intensive care, but he died later that day.

This report considers the standard of care provided to Mr A from 10–12 June 2005. In particular, it focuses on the attempts made by medical staff to introduce a suprapubic catheter in ED, and the availability of senior medical staff advice.

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## Parties involved

Mr A (dec)	Consumer
Mrs A	Complainant/Consumer's wife
Dr B	ED registrar
Dr C	ED consultant
Dr D	Urology consultant
Dr E	Surgical registrar
Otago District Health Board	Provider

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## Complaint and investigation

On 28 August 2007 the Health and Disability Commissioner (HDC) received a complaint from Mrs A about the services provided to her husband, Mr A, by Dunedin Hospital. The following issue was identified for investigation:

*The appropriateness of the care provided to Mr A by Otago District Health Board from 10 to 12 June 2005.*

An investigation was commenced on 22 May 2008.

Information was reviewed from Mrs A, Otago District Health Board (Otago DHB) and the Coroner. Two sets of independent expert advice were obtained from urologist Dr Michael Rice: preliminary expert advice (**Appendix 1**), and further advice after ODHB had been formally notified of the investigation (**Appendix 2**). Expert advice was also provided to the Coroner by urologist Dr Edwin Arnold (**Appendix 3**).

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## Information gathered during investigation

### *Background*

Mr A suffered an accident when he was aged 42. This resulted in a fracture of his 7<sup>th</sup> cervical vertebra, and left him with tetraplegia. Since that time, he had lived at home assisted by community nursing staff. Because of his paralysis, Mr A had a suprapubic catheter, which was changed approximately every two weeks by the nursing staff who assisted him with his care. A registered nurse (RN), who was one of the nurses who regularly cared for Mr A, advised the Coroner that, in the past, it had proved necessary for a new catheter to be inserted by a urologist in Dunedin Hospital Emergency Department (ED).

ODHB provided a copy of an operation note of 30 January 2001. The procedure performed was the re-insertion of a suprapubic catheter by urologist Dr D. The operation note states:

“[Mr A] is a high cervical spine tetraplegic who has had [a] suprapubic catheter as part of his ongoing treatment. This fell out recently and attempts to re-insert this in the Emergency Department failed. He developed quite significant rise in blood pressure secondary to autonomic dysreflexia<sup>1</sup> and this precluded distending his bladder any further to facilitate ... suprapubic catheter insertion. Hence an indwelling catheter was inserted and he was booked urgently for [suprapubic catheter] insertion.”

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<sup>1</sup> “The symptoms of autonomic dysreflexia are caused by the inability of two normally balanced feedback loops to communicate.

Blood pressure rises as a direct consequence of constriction of blood vessels caused by local feedback loops from the spinal cord which is receiving warning signals of bladder distension (the commonest cause of autonomic dysreflexia). The adrenal gland is also stimulated, and the resulting rising levels of adrenaline in the blood are detected in the brain.

The brain responds by trying to inhibit further secretion of adrenaline by activating the parasympathetic component of the nervous system that results in dilation of blood vessels and slowing of the heart.

Because of the damage in the spinal cord these signals are not received below the level of damage, apart from the heart which has a nerve supply independent of the spinal cord. Their effect is expressed above the damage. Their effect is not inhibited and intense dilation of blood pressure results, causing intense headache.” (ODHB internal investigation report.)

*10 June 2005 — attendance at ED*

On 1 June 2005, Mr A's catheter started to leak, and it was decided that it needed to be changed. A registered nurse, one of Mr A's community nurses, removed the catheter, but she was unable to introduce a new one. It was agreed that Mr A would go to Dunedin Hospital ED for this procedure to be performed. He drove himself to hospital, and the community nurse called ahead to the hospital to advise Mr A was on his way.

The ED record states that Mr A arrived at 1.18pm with a blocked suprapubic catheter. Clinical observations were performed at 1.45pm (his blood pressure was raised at 151/106mmHg, pulse 59).<sup>2</sup>

Mr A was assessed by ED registrar Dr B at 1.21pm. Dr B stated that Mr A told him that he would need an introducer to insert the new catheter, but despite attempts with two sizes of catheter, Dr B was unable to introduce the catheter.

Having used a needle and syringe to withdraw some urine from Mr A's bladder to release the pressure, Dr B attempted to insert a different type of catheter (Cooke's). This attempt also proved unsuccessful, and Dr B decided to contact the urology registrar. However, the urology registrar was not on duty as he was due to be on call that night.

Dr B then contacted the ED consultant on duty, Dr C.

Dr C examined Mr A using an ultrasound machine, "which confirmed he still had residual urine in his bladder and that the top of the bladder lay above the catheter tract". Dr B made a further unsuccessful attempt to introduce the catheter. Dr C and Dr B concluded that a specialist urology opinion was required.

*Call to on-call urology consultant*

Dr C telephoned the on-call urology consultant, Dr D.<sup>3</sup> Dr C was informed over the telephone by a third person (possibly an anaesthetist) that Dr D was unable to talk on the telephone.<sup>4</sup> Dr C explained the clinical situation to the third person, and understood that the information was relayed to Dr D. Through the same third person, Dr C was advised to contact the on-call surgical registrar.

In his statement dated 15 July 2005 to the subsequent ODHB internal investigation, Dr D stated that he had no recollection of this call. He advised that he "was not aware of [Mr A's] presence in the hospital until about 11.20pm when he was rung at home by [Dr E]". This statement was repeated in ODHB's letter to HDC of 14 September 2007. However, in a letter of 16 June 2008, Otago DHB stated that, when he was contacted by ED staff, Dr D "advised that a new suprapubic catheter be inserted

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<sup>2</sup> Clinical observations were next performed at 7pm.

<sup>3</sup> The time of the call was not recorded.

<sup>4</sup> Dr D had one Friday afternoon session every month when he operated at another hospital in Dunedin.

through the existing suprapubic catheter tract". This is consistent with Dr D's evidence to the Coroner, in which he stated that he instructed that the suprapubic catheter be replaced, but he did not recall whether he had been told there had been previous attempts to insert it.

However, in an email to HDC dated 23 July 2008, Dr D gave a contrary statement:

"I am not able to recall if I had asked for the surgical registrar on call to be contacted and that a new suprapubic catheter be introduced through the existing tract."

In any event, the upshot of Dr C's indirect communication with Dr D was that Dr C then contacted Dr E, the on-call surgical registrar.

While they waited for Dr E to arrive, Dr B and Dr C made a further attempt to introduce the catheter. Dr B stated that he was "unable to enter the bladder as [he] was uncomfortable with the amount of resistance to the insertion of the [catheter]". He abandoned the procedure.

*Insertion of catheter by on-call surgical registrar*

At the time, Dr E had had six months' experience of urology, and was an advanced trainee (registrar). However, he had never before inserted a suprapubic catheter in a patient with tetraplegia.<sup>5</sup> In a statement to the Coroner, Dr E described his care of Mr A:<sup>6</sup>

"I was ... called and came to see [Mr A]. On examination he appeared to be in some mild discomfort. His abdomen was soft and there was some suprapubic tenderness to palpation.

I used the ultrasound machine and could easily identify the suprapubic tract with some tissue clearly visible obstructing the tract midway down.

The bladder was also easily visualised. Often after a catheter has been removed for some time tissue tends to fall into the tract and cause an obstruction which makes the insertion of another catheter down the tract more difficult.

[Mr A's] carer was there and she indicated to me she normally changed the catheter and [Mr A] acknowledged that fact. It seemed appropriate at the time to see if she could replace a catheter. She was unsuccessful.

As I had done six months as a Urology Registrar at North Shore and Auckland Hospitals I was familiar with suprapubic catheterisation as I had done a number of these procedures before.

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<sup>5</sup> Dr E advised the Coroner that, since this incident, he has never inserted another suprapubic catheter.

<sup>6</sup> No clinical record was written by Dr E describing the care he provided to Mr A.

I prepped [Mr A's] suprapubic region with aqueous povidine iodine and draped the region. Initially I asked the carer if she could hold the ultrasound probe for me but then [Dr C] became available and volunteered to assist me. He used the ultrasound scanner to demonstrate to me the tract and the top of the bladder. This was to allow me to make sure that I did not go too superior and miss the bladder.

I used a long angiocath needle and placed it 2 to 3cm in the tract to demonstrate the direction of the tract. Usually I would use a fine spinal needle in a virgin abdomen but as part of the tract was already there I felt a stiffer needle would help demonstrate the tract better to me. I also felt that reinserting the suprapubic down the same tract would be the safest place to go as the bladder would be nicely scarred up against the anterior abdominal wall. This would make it less likely to cause any bowel injury.

I slowly pushed the needle in aspirating as I went. Eventually, some blood stained urine was aspirated confirming the needle was in the bladder, I was not surprised that the urine was blood stained as [Dr B] had aspirated some urine before and may have caused some bleeding in the process which would not be uncommon. Also during the process of me using this angiocath needle I may have also caused some bleeding which also would be expected.

Often using an angiocath needle requires quite a degree of force to insert the trocar into the bladder and to the lay person this may appear to be quite aggressive or forceful but is in fact both necessary and normal.

I then used a 20 French Cooke's peel away catheter (a catheter with which I am very familiar) and inserted it along the same direction. Every centimetre or so I would remove the central trocar to see if any urine would come back. Again a certain degree of force was used to insert this Cooke's peel away down the tract. Eventually after several checks as I inserted the catheter blood stained urine came out of the catheter which confirmed the catheter was in the bladder. A urinary bag was attached and I left instructions with nursing staff to irrigate the bladder clear of clots and that he could be discharged later that evening. I also advised [Mr A] to drink plenty of fluid and warned him of potential clot retention."

#### *Continued care in ED*

The nursing record states that the suprapubic catheter irrigation was repeated at 4.40pm as there were blood clots in the urine bag ("blood ++").

Irrigations were performed regularly during the evening, and at 7.40pm Dr E was asked to review Mr A because of continuing haematuria and swelling of the lower abdomen. Dr E queried a haematoma after the suprapubic catheter insertion. He requested a haemoglobin check and an ultrasound scan to check for signs of bleeding.

At 9pm, Mr A's blood pressure dropped to 54/34, and he was transferred to the resuscitation bay. He was described as "pale and obviously distressed" by a registered nurse. A litre of IV fluids was prescribed to be administered quickly (it was

administered in 45 minutes from 9.30pm to 10.15pm). The registered nurse stated that Mr A “improved quickly”, and he was transferred to the radiology department to have the ultrasound scan, which was performed at 9.45pm. The ultrasound was reported as showing “no subcutaneous haematoma”.

*Admission to ward*

Following discussion with the nursing staff (who were concerned about Mr A’s condition), Dr E contacted Dr D. It was agreed to admit Mr A, and that Dr D would review him the following day. Mr A was admitted to a ward at around 2am.

Overnight, Mr A’s urine output and blood pressure were monitored, and it was planned that he would be discharged the following day.

*11 June 2005*

Dr D reviewed Mr A in the morning on his ward round. He recalls:

“I met [Mr and Mrs A] the next day in [the Ward]. I went through his clinical notes and told him that he had a blockage of the catheter tract, which was opened up again by the catheter introducer kit, and a new tube had been put into his bladder. [Mr A] was upset about having had to wait for about three hours in the Emergency Department, before he was seen by the staff. He said, during this period, his blood pressure shot up to 130/100 ... due to a condition called autonomic dysreflexia, a condition that can happen in patients with tetraplegia, especially involving the upper segments of the spinal cord. He said that he was aware of the rare complication of the blood vessels inside the brain bursting, due to this increase in blood pressure, which can sometimes lead to potential complications like stroke. I agreed that this was the case and reassured him that I would speak with the senior staff in the Emergency Department, and make sure that patients with high tetraplegia be seen immediately, following their presentation to the Emergency Department, whenever the reason for their admission was something to do with bladder or bowel. I told him that he should remain in the hospital for at least another 24 hours, because of the fact that he had some infection, which was being treated with intravenous antibiotics. [Mr A] asked me why the re-insertion of the catheter into his bladder had not been done under general anaesthetic. I told him that insertion or re insertion of tubes into the bladder was a very minor procedure and were usually done under local anaesthetic and that it was indeed a blind procedure and damage to the lining of the bladder can happen, even in experienced Urologist’s hands. I told him that if I had attended to [Mr A], I would have re-inserted a catheter much in the same way as the Surgical Registrar. [Mr and Mrs A] appeared to be satisfied with my explanation.”

Mr A’s condition improved over the day. The clinical record describes Mr A having a good urine output, and his urine was “clearing”. A result of the blood test taken at



1.45pm showed that Mr A's haemoglobin had fallen to 100, from 147 the previous day.<sup>7</sup>

*12 June 2005*

No changes in Mr A's condition were reported overnight.

At 9.10am, Mr A's condition suddenly deteriorated, and the resuscitation team was called. His condition remained critical, and he was transferred to the intensive care unit.

A CT scan of Mr A's chest and brain were performed, and showed a "very large blood clot, blocking the main blood vessel to the lungs, and evidence of damage to [Mr A's] brain following the period of lack of blood circulation, when his heart [twice] stopped temporarily".<sup>8</sup> In discussion with Mr A's family, it was decided to withdraw treatment and Mr A died at 2.40pm on 12 June 2005.

### **Other relevant matters**

#### *Internal investigation*

ODHB's internal investigation report concluded:

"[A]lthough [Mr A's] death was regrettable we have not found any evidence that it resulted as a consequence of any staff member working outside their limits of competency or outside the bounds of reasonable practice."

#### *On-call consultant availability*

Otago DHB was asked if it is acceptable to the DHB that on-call surgical staff may be simultaneously operating in a private facility, off site. Otago DHB stated that "it is the expectation that when on-call consultant staff will respond in a timely manner". The job description for a consultant urologist states that a consultant must "participate in the emergency on-call roster for Urology (to be available by telephone within 10 minutes, and available to come into the hospital within 20 minutes)".

The findings of the internal investigation stated:

"The panel notes that if a Senior Medical Officer has commitments in private practice there exists opportunity for a conflict of interest should they be required to have a presence at Dunedin Hospital in relation to on-call commitments. The situation seems more problematic for a surgeon. They cannot be scrubbed in theatre in both institutions at the same time."

ODHB Chief Executive Officer Brian Rousseau commented:

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<sup>7</sup> Normal: 130–180.

<sup>8</sup> Dr D's statement to the Coroner, dated 8 July 2005.

“I appreciate that the issue of an on call consultant working at a private facility (and performing an elective procedure) whilst on call appears inconsistent with the need for availability. However, I believe that the matter is complex, especially so for smaller district health boards who may have many speciality services with only one or two (actual) consultant staff or low full time equivalent arrangements (sometimes further complicated by joint academic appointments).

Because of a small pool of consultants in some specialities the following points require consideration:

- On-call consultants may be operating electively in Dunedin Hospital whilst on call — this may present the same circumstance as in this complaint insofar as physical availability;
- In two-consultant specialities, both consultants may be operating on the same complex case when one of them is on call;
- We should also consider what should happen when the consultant is called to the private hospital for an emergency whilst on call, or operating on an emergency case in the public hospital;
- Sometimes there may be only one consultant available for a speciality for a prolonged period of time (such as we currently have for urology whilst [Dr D] is away for 6–8 weeks); in such a case, unless the consultant closes his/her private practice, there will be times that they are working privately and on call for the public hospital. The alternative would be to shut down their private practice for this time which would not be acceptable to the consultant or their private employer;
- Employment issues, including recruitment of staff, would be made much more difficult than it already currently is for DHBs such as Otago should private practice not be available to consultants, or if on-call arrangements precluded them attending reasonable private work.

Furthermore, problems with access to on-call consultants are very rare events despite the current arrangements some hold in private practice. We also enjoy a high degree of cooperativeness due to flexibility in our arrangements with consultants which is of benefit to our patients and our service.

Notwithstanding the above, I intend to again discuss this matter further with our Chief Medical Officer ... . The outcome of the review of our on-call arrangements will be communicated back to you by 19 December 2008.”

#### *Coroner’s inquest*

The Coroner obtained expert advice from Dr Edwin Arnold, urologist and Medical Advisor at Burwood Hospital specialist spinal unit (see **Appendix 3**). Dr Arnold advised that the standard of care for Mr A was “less than ideal”, giving as examples

the decision to persist with attempts to replace the suprapubic catheter rather than a urethral catheter “as a temporising measure”, and the decision to replace the suprapubic catheter without a general or spinal anaesthetic.

The Coroner, in a decision dated 28 August 2008, found:

“I find that the deceased [Mr A] died at Dunedin Hospital on the 12th day of June 2005, death being due to acute cardiovascular collapse complicating severe pulmonary artery embolism due to deep vein thrombosis involving the pelvic plexus veins in association with basilar artery thrombosis. I find that these complications originated from bleeding which occurred when a supra-pubic catheter was inserted after several unsuccessful attempts to the previous day.

...

On viewing the whole of the evidence and the submissions received I consider that there are aspects of the deceased’s care that justify a recommendation from me. Because of the complicated nature of the evidence including the fact that it appears that there are differing views on a number of issues, I propose simply to recommend and invite the Otago District Health Board to review the whole history of this matter and to give careful consideration to whether there are aspects that require to be improved. In saying this, I am conscious of the fact that an extensive report of the Clinical Review Panel has already been carried out and I commend the hospital for taking that action. But it may be now that, following the inquest at which a large number of witnesses gave evidence and many were cross examined, ... some issues have developed which now justify reconsideration. Purely as an example I suggest that consideration should be given to the situation that arose where the urology consultant on call was unavailable on that day because he was conducting surgery at a private hospital. I am not in a position to make a finding that any such issues were a cause of or contributed to the death but pursuant to s15(1)(b) Coroners Act 1988 I make the recommendation that the whole of the evidence be reviewed, with a view to reducing ‘the chances of the occurrence of other deaths in such circumstances’.”

## **Code of Health and Disability Services Consumers' Rights**

The following Rights in the Code of Health and Disability Services Consumers' Rights (the Code) are applicable to this complaint:

### *RIGHT 4*

#### *Right to Services of an Appropriate Standard*

(1) *Every consumer has the right to have services provided with reasonable care and skill.*

...

(5) *Every consumer has the right to co-operation among providers to ensure quality and continuity of services.*

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## **Opinion: Otago District Health Board — Breach**

It is not my remit to ascertain the cause of Mr A's death — that is the province of the Coroner. It is for me to decide whether Mr A was provided with reasonable care, and whether all the Otago DHB clinicians co-operated to ensure quality and continuity of care.

### *Standard of care*

It is relevant to note an earlier event. In January 2001, after Mr A's suprapubic catheter had fallen out, it was replaced under general anaesthetic because it proved difficult to reinsert it in the emergency department. In the meantime, a urethral catheter was inserted. Understandably, Dr D may have forgotten this event from four and a half years earlier, but he performed the procedure himself.

On 10 June 2005, Mr A came to ED with a similar presentation. However, on this occasion, a number of attempts were made to insert the suprapubic catheter in ED. Dr B eventually stopped his attempts as he was uncomfortable with the amount of resistance he was encountering in his efforts to re-catheterise Mr A. Eventually, the surgical registrar was contacted as there was no urologist available to attend.

The surgical registrar, Dr E, who had never before inserted a suprapubic catheter in a patient with tetraplegia, inserted the suprapubic catheter using what he described as “quite a degree of force [which] to the lay person ... may appear to be quite aggressive or forceful but is in fact both necessary and normal”.

My independent expert, urologist Dr Michael Rice, stated that “the introduction of suprapubic catheters in patients with tetraplegia can have particular challenges for a

medical practitioner”. However, neither Dr E, nor Dr B, nor Dr C discussed these particular challenges with Dr D or any other urologist prior to the attempts to insert the suprapubic catheter.

In my view, the medical staff should not have continued in their attempts to insert the suprapubic catheter once the first attempt was unsuccessful. No thought appears to have been given to inserting a urethral catheter and arranging the suprapubic catheter insertion for a later time. According to Dr Rice and to the Coroner’s expert, Dr Arnold, a urethral catheter should have been inserted once it had proven difficult to insert the suprapubic catheter. It is notable that this is precisely what occurred in January 2001.

*Specialist medical staff advice*

When the ED medical staff decided they needed the advice of a specialist urologist, they contacted the urology registrar but he was not rostered on duty. When the urology consultant was contacted, Dr D was found to be operating in a private hospital, and unable to speak to Dr C directly. The subsequent conversation was relayed through a third person.

When asked by HDC whether it was acceptable for on-call surgical staff to be simultaneously operating in a private facility, Otago DHB responded that in this case “the physical presence of a consultant was not deemed to be necessary”.

Whatever the views of Otago DHB management, I do not consider it acceptable that an on-call urologist can be operating at a private facility at the same time as he is required to provide support and advice to a public hospital. Dr D’s job description required him, when on call, to be “available by telephone within 10 minutes, and available to come into the hospital within 20 minutes”. In my opinion, by participating in an operation off-site (which appears to have been a planned, possibly non-urgent procedure), Dr D was not as available as he needed to be. Nonetheless, I accept that Dr D was simply following an accepted practice for ODHB on-call consultants.

I note that the Otago DHB internal investigation made a recommendation on this point, as it noted that there could indeed be a conflict, particularly for surgeons, who cannot be “scrubbed-up” for surgery on two sites at once. However, it is unclear what action Otago DHB has taken in response. I endorse the Coroner’s view that “consideration should be given to the situation that arose where the urology consultant on call was unavailable on that day because he was conducting surgery at a private hospital”. In my view it is a situation that needs to be remedied.

While I appreciate the complexities explained by Otago DHB in its response to the provisional opinion, I remain of the view that Mr A’s care was jeopardised by the unavailability of specialist medical advice, as a consequence of the simultaneous, scheduled absence of both the urology registrar and the urology consultant.

### *Summary*

I conclude that it was inappropriate to make continued attempts to introduce the suprapubic catheter once initial attempts had failed. It was also unsatisfactory that the surgical registrar continued with the attempts to introduce the suprapubic catheter despite having no previous experience of performing this procedure for a patient with tetraplegia. While individual members of staff must consider their own practice in light of this case, in my opinion the clinical team as a whole let Mr A down. In these circumstances, Otago DHB breached Right 4(1) of the Code.

When urology specialist advice was required, it could not be obtained from a registrar, and the on-call urologist was operating off-site in a private facility. The request for advice and the response were relayed through a third party. Specialist advice was required, but for all practical purposes it was unavailable, with no urology registrar on duty, and the on-call urology consultant operating in another hospital. The registrar's absence was known to Otago DHB, and the DHB condones the practice that resulted in the consultant's absence. While the outcome may not have been affected had Dr D spoken directly with one of Mr A's attending doctors, on the day, the clinicians did not work together effectively to provide good quality care for Mr A. Accordingly, Otago DHB breached Right 4(5) of the Code.

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## **Other matters**

### *Documentation*

Dr D has given varying accounts of his recollection of his conversation with Dr C on the evening of 10 June 2005. As neither of them made a contemporaneous record of their contact, it is not surprising that Dr D's recall is imprecise. I am also concerned that Dr E did not record the care he provided to Mr A and the subsequent orders to the nursing staff.

A medical practitioner has a responsibility to "keep clear, accurate, and contemporaneous patient records that report the clinical findings, the decisions made, the information given to patients and any drugs or other treatment prescribed".<sup>9</sup> On the available evidence, Dr E, Dr D and Dr C did not comply with this professional responsibility. I make a recommendation on this point below.

### *Internal investigation*

Otago DHB performed an internal investigation after Mr A's death, and concluded that there was no evidence that any staff member worked outside their limits of competency. It is clear that much energy was expended on this internal investigation, with statements being taken from a number of staff. However, it is remarkable that no concern was raised about the appropriateness of the continued attempts to pass the

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<sup>9</sup> *Good medical practice — A guide for doctors* (Medical Council of New Zealand, 2005).

suprapubic catheter; that inserting such a catheter in a patient with tetraplegia has “particular challenges” (as stated by Dr Rice); or that such a procedure was performed by at least one medical practitioner with no prior experience. It is also notable that there is no reference to the absence of any clinical record of the evening of 10 June 2005 by Dr C or (more importantly) Dr E. These are all important aspects of Mr A’s care which were missed by the internal investigation.

*Otago DHB response to provisional opinion*

Otago DHB accepts that it breached the Code of Health and Disability Services Consumers’ Rights in relation to Mr A’s care, states that “[t]he issues of documentation have been noted by those involved in [Mr A’s] care”, and notes the critique of its internal investigation. Otago DHB provided an apology for Mrs A.

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## **Recommendations**

I recommend that Otago DHB review the on-call requirements of senior medical staff in relation to simultaneous operating at another facility, and advise HDC of the outcome of the review by **19 December 2008**.

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## **Follow-up actions**

- A copy of this report with details identifying the parties removed, except the experts who advised on this case and the names of Otago District Health Board and Dunedin Hospital, will be sent to the Minister of Health, the Director-General of Health, the Royal Australasian College of Surgeons, the New Zealand Private Surgical Hospitals Association, the Association of Salaried Medical Specialists and all district health boards, and placed on the Health and Disability Commissioner website, [www.hdc.org.nz](http://www.hdc.org.nz), for educational purposes.



## Appendix 1

Preliminary expert advice from urologist Dr Michael Rice:

Dear Mr Paterson

Re:

I have reviewed the notes concerning the admission of \_\_\_\_\_, aged 48, to Dunedin Public Hospital on the 10<sup>th</sup> June 2005.

\_\_\_\_\_ was a tetraplegic as a result of a \_\_\_\_\_ accident in 1998 and had a permanent suprapubic catheter.

On the 10<sup>th</sup> June 2005 the catheter started leaking. An attempt by a District Nurse to reinsert the catheter was unsuccessful and \_\_\_\_\_ was admitted to Dunedin Public Hospital for re-insertion of a urinary catheter.

Four attempts were therefore made to reinsert the urethral catheter. The 1st by the District Nurse, 2nd and 3<sup>rd</sup> by the Emergency Department Doctor, \_\_\_\_\_ and the 4<sup>th</sup> by the Surgical Registrar,

The patient was admitted to the Accident & Emergency Department at approximately 1300 hours and was transferred to Ward \_\_\_\_\_ at 0100 hours on the 11<sup>th</sup> June 2005.

During his time in the Emergency Dept the patient became hypertensive with the development of autonomic dysreflexia secondary to urinary retention during attempts to reinsert the suprapubic catheter.

\_\_\_\_\_ attempted to replace the supra pubic catheter twice. The first with an introducer was unsuccessful and he aspirated 200mls suprapubically as temporising measure and then attempted to insert a Cooks suprapubic catheter using ultrasound guidance but was unhappy with the position and aspirated a further 150 mls and requested assistance from the surgical registrar. The bladder was aspirated to reduce the symptoms and signs of autonomic dysreflexia which in this case were headaches and hypertension

Dr \_\_\_\_\_, the surgical registrar on call, inserted a suprapubic catheter under what is stated as ultrasound guidance. The ultrasound was performed by Dr \_\_\_\_\_. Blood stained urine was obtained on the introduction of the supra pubic catheter. There are no clinical notes written by Dr \_\_\_\_\_

Dr \_\_\_\_\_ was asked to review the patient at 1945 hours. This was in a response to a request from the nursing staff regarding a swelling of the lower abdomen. It was noted that the supra pubic catheter was draining. The patient underwent an ultrasound scan which confirmed the presence of the catheter within the bladder. The patient had haemoglobin of 147.



On his admission to Accident and Emergency a telephone consultation was held with Mr [redacted] Consultant Urologist, who was operating in private. The conversation was relayed by the Anaesthetist and no direct discussion was held with Mr [redacted] by the medical staff, about [redacted] presentation. No attempt was made to contact Mr [redacted] the other Urologist at Dunedin Hospital. Mr [redacted] was not informed of Mr [redacted] admission until he was rung by Dr [redacted] at 2320 hours. Dr [redacted] had informed him of the attempts to introduce the suprapubic catheter as well as the raised white blood cell count and the brief period of hypotension.

Mr [redacted] was admitted to Ward [redacted] where it was noted on a number of occasions that his blood pressure was low with systolic pressures of 70 to 96 being recorded. He was not tachycardic. It is noted a systolic blood pressure reading taken from the opposite arm was found to be 120. On the 11<sup>th</sup> June 2005 the patient was turned at 2400 hours and his catheter was noted to be draining clear urine. At 0900 hours on the 12<sup>th</sup> June 2005 he became unresponsive and sustained a respiratory arrest with a provisional diagnosis of a primary intracerebral event or a major pulmonary emboli being made. His haemoglobin had fallen to a level of 100 on the 11<sup>th</sup> June 2005 and 89 on the 12<sup>th</sup> June 2005.

The patient was transferred to Intensive Care.

Radiological investigations which included a cerebral CT scan showed changes consistent with severe hypoxic brain injury and a CT pulmonary angiogram revealed bilateral pulmonary bilateral saddle emboli. An ECG revealed right bundle branch block with anterior ischemic changes.

The patient died at 1440 hours on the 12<sup>th</sup> June 2005.

Professor [redacted], Clinical Director of Pathology following an autopsy concluded" that the cause of death was acute cardiovascular collapse, complicating severe pulmonary and basilar artery thrombi-embolism due to deep vein thrombosis involving the pelvic plexus veins"

He noted that "there was a 400 ml haematoma to the right of the bladder wall impinging on the deep pelvic veins. The saddle emboli were consistent with a formation over a 24 to 48 hour period and that the diameter and colour of the thrombi in the pelvic veins were identical to those that were seen in the pulmonary artery."

**In summary,** Mr [redacted] herefore presents as a tetraplegic patient with a low volume, low compliant bladder as a consequence of his tetraplegia and the long term indwelling suprapubic catheter who after repeated attempts to reinsert the suprapubic catheter and developed bilateral pulmonary emboli secondary to a deep vein pelvic thrombosis related to a pelvic haematoma with a fatal outcome due to acute cardio vascular collapse.

In response to your request for specific comments, I have made the following observations

#### **1. The use of a Urethral Catheter as opposed to a suprapubic catheter**

Two attempts were made by the Emergency Department Registrar to insert the suprapubic catheter. He recognised his limitations. Repeated aspirations of the bladder to reduce the bladder volume would have potentially made the insertions of the supra pubic catheter more difficult.

With a longstanding supra pubic catheter, the re-insertion of a supra pubic catheter would not necessarily have been a straight forward as would the insertion of a supra pubic catheter in a

patient who had never had a supra pubic catheter inserted as the bladder of a tetraplegic would have been less compliant, thick walled and reduced in volume.

Mr [redacted] had a detailed understanding of his spinal injury and recognised the symptoms and signs of autonomic dysreflexia. Repeated attempts at inserting a supra pubic catheter in a patient could also trigger autonomic dysreflexia and with a full bladder may have made further attempts more complicated with the stimuli would have occurred.

No attempt was made to insert a urethral catheter which could have immediately drained the bladder and reduced the symptoms and signs of autonomic dysreflexia.

The simple insertion of a urethral catheter would have enabled Mr [redacted] to have been discharged and to have been admitted electively for the insertion of a suprapubic catheter under a general anaesthetic.

In January 2001, a urethral catheter had been inserted following unsuccessful attempts at the insertion of a supra pubic catheter and the patient had undergone a cystoscopy under a general anaesthetic and insertion of a suprapubic catheter.

It appears only one attempt was made to communicate with Mr [redacted] the Consultant on call and this was through his anaesthetist at the private hospital where he was operating. No efforts were made to contact Mr [redacted], the other Urologist at Dunedin Hospital to ask his advice and assistance in dealing with the insertion of the supra pubic catheter. Mr [redacted] spent almost 12 hours in the Emergency Department before being admitted after the nurses were concerned about his condition.

## **2. Occurrence of Pelvic Thrombosis / Suprapubic Catheter/ Pulmonary emboli**

The patient sustained saddle pulmonary emboli and it is noted that on the autopsy report that the Pathologist felt that the source of the saddle emboli were from the pelvic veins on the right side. A haematoma approximately 400 mls in volume on the right side of the pelvis has been described impinging on the deep pelvic veins. There was no mention of any other source of the pulmonary emboli. All that can be stated is that the patient had at least three attempts at a supra pubic catheter insertion with the finding of a pelvic haematoma at post mortem which the Pathologist has reported compressed the deep pelvic veins with the presence of thrombus in the pelvic veins adjacent to the haematoma. The haematoma had presumably formed in response to the attempts at the insertion of the suprapubic catheter. There does not appear to have been a perforation in the right lateral wall of the bladder leading to the pelvic haematoma and no evidence to suggest that the patient had a coagulation disorder which resulted in the moderate sized pelvic haematoma. A blood vessel in the anterior abdominal wall could have been injured and led to the development of the haematoma.

The cause of death was probably anoxic brain injury secondary to the massive pulmonary emboli. The basilar artery thrombosis may have been a contributing factor and may or may not have been related to the passage of embolus through a patent foramen ovale which may have opened as a result of the rise in right heart pressure when he developed the pulmonary embolus. The basilar artery thrombosis may have occurred after the pulmonary embolus.

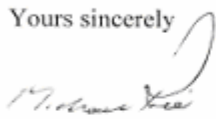
The patient's haemoglobin had fallen to a 100 the following morning after his admission to hospital. This may have been a combination of haemodilution as well as blood loss either from the haematuria but also from the pelvic haematoma that was found during the autopsy. He appeared stable and his haematuria was clearing. There does not appear to have been any response to investigate the reasons why his haemoglobin had fallen to 100.

A haemoglobin of 89 was recorded on the morning he developed the pulmonary embolus, but by that time events prevented further investigation. There has been some discussion about the rapid development of the pelvic thrombosis following the admission to hospital. It is possible that Mr [redacted] may have been in a hyper coaguable state but equally the pelvic haematoma combined with hypotension would have contributed to the development of the deep vein thrombosis. He had undergone a colonoscopy 10 days prior to his admission and the bowel preparation with some dehydration may have been a precipating factor but there is no record of Mr [redacted] being unwell prior to his admission on the 10 th June.

### 3. The use of Clexane in a Tetraplegic patient with post operative bleeding

*Clexane* would not be usually administered in a tetraplegic patient who had been admitted with a suprapubic catheter and had developed haematuria unless there was a clinical indication that he had developed a deep vein thrombosis.

Yours sincerely



**MICHAEL L RICE**  
Urologist

## Appendix 2

Further expert advice from urologist Dr Michael Rice:

Dear Mr Paterson

Re:

I have been asked to comment on the adequacy of the care provided to Mr \_\_\_\_\_, by the Otago District Health Board, from the 10<sup>th</sup> – 12<sup>th</sup> June 2005.

I have previously submitted a report to you, dated the 12<sup>th</sup> April 2008.

Mr \_\_\_\_\_ was admitted to the Emergency Department of Dunedin Public Hospital on the 10<sup>th</sup> June after an unsuccessful attempt to change a long term indwelling suprapubic catheter by the District Nursing Service \_\_\_\_\_ Emergency Department Registrar, contacted Dr \_\_\_\_\_ ED consultant and informed him that he had aspirated some urine with a needle to relieve the patient of hypertension which had occurred secondary to autonomic dysreflexia. He had been unable to insert a suprapubic catheter. Another brief attempt by Dr \_\_\_\_\_ using ultrasound, to insert a suprapubic catheter was observed by Dr \_\_\_\_\_ and as this was unsuccessful Dr \_\_\_\_\_ decided to contact the Urology service for further assistance.

Dr \_\_\_\_\_ contacted the Urology Registrar at 1400 hours, but was informed that as he was rostered for a night shift that evening he had gone off for the day. Mr \_\_\_\_\_ the Urology Consultant on call, was contacted and was operating in private. He did not speak directly to Dr \_\_\_\_\_ but through Dr \_\_\_\_\_ his anaesthetist he suggested the Surgical Registrar on call be contacted.

Dr \_\_\_\_\_ who was the surgical registrar on call attended and attempted to insert a suprapubic catheter. Staff Nurse \_\_\_\_\_ then asked Dr \_\_\_\_\_ to see Mr \_\_\_\_\_ and he observed Dr \_\_\_\_\_ "having difficulty" on inserting the catheter which was finally inserted with ultrasound guidance with blood stained urine being aspirated.

Throughout Mr \_\_\_\_\_ stay in the Emergency Department, there was a continuing focus on the insertion of a supra pubic catheter and the insertion of a urethral catheter does not appear to have been considered after initial attempts to reinsert the suprapubic catheter failed.

The introduction of supra pubic catheters in patients with tetraplegia can have particular challenges for a medical practitioner. If the supra pubic catheter tract was mature then a simple change of catheter could be undertaken, however, if the first attempt was unsuccessful it would have suggested that the tract could have possibly either been traumatized or collapsed.



Tetraplegic patients with long term indwelling catheters usually have contracted, low compliant bladders and therefore attempts at aspiration of the bladder would make distention of the bladder for the insertion of the supra pubic catheter more difficult and at the same time could have potentially aggravated the symptoms and signs of autonomic dysreflexia. The physical build of the patient as well as the previous suprapubic tract with scarring should have been taken into account.

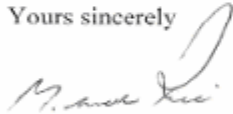
It is acknowledged that Dr [redacted] has probably only inserted supra pubic catheters in patients who have acute or chronic urinary retention secondary to prostatic outflow obstruction or urethral strictures. It would appear that he did not attempt to contact Mr [redacted] for further advice having made an initial assessment of the particular circumstances of Mr [redacted] case

There does appear to have been a lack of communication between Dr [redacted] and Mr [redacted] but Dr [redacted] operating in private did not appear to have contributed to the outcome of this case. The communication between the A & E staff and Mr [redacted] could have been more direct without being through a third person

In summary, Mr [redacted] presents with a long term indwelling supra pubic catheter in which multiple attempts were made to reinsert the catheter via the supra pubic route .During his time in the Accident & Emergency Department, he displayed symptoms and signs of autonomic dysreflexia. The insertion of a urethral catheter may well have had a different outcome but it would appear that the main focus had been on the re-insertion of the supra pubic catheter and that all parties would appear to have been acting in good faith without necessarily recognizing the implications of repeated attempts at the re-insertion of the supra pubic catheter in a tetraplegic patients

Kind regards.

Yours sincerely



**MICHAEL L RICE**  
Urologist

## Appendix 3

Expert advice provided to the Coroner by Dr Edwin Arnold:

Inquests Officer,  
Dunedin Central Police,  
Private Bag 1924,  
Dunedin.

Dear

You have requested my opinion about the procedures used in this case, and the standards of care applied. My opinion is based on the information you sent me in the Police file and according to your letter to me of October 13<sup>th</sup>, 05.

Clinical problems arose during the routine changing of his supra-pubic catheter at home at 11.30am on June 11<sup>th</sup>, 2005. Having removed the old catheter the nurse was unable to replace it with a new one. Very appropriately she arranged for him to attend the Emergency Department at Dunedin Hospital as soon as possible. He arrived there at 1.21pm.

### **Autonomic Dysreflexia**

An understanding of the serious significance of the condition of autonomic dysreflexia needs to be appreciated by all patients with spinal injuries and by all practitioners caring for them including all Emergency Departments. The labile nature of autonomic functions after spinal injuries also needs to be well understood. This includes body temperature control, pulse and blood pressure, and urine output.

Autonomic dysreflexia constitutes an emergency because of the life-threatening hypertension.

The urgent management centres on:

- i) Removing the precipitating factor: in this case by emptying the full bladder.
- ii) Raising the patient to the sitting position to help lower the blood pressure
- iii) Drugs to lower the life-threatening hypertension, if the above measures have not rapidly reduced the raised blood pressure.

### Emptying the bladder

This is the first priority in his management as a full bladder can cause autonomic dysreflexia. The blood pressure and pulse need to be measured continuously or repeatedly, during any urological intervention. This was done.

#### *Urethral catheterisation*

Attempts at replacing the suprapubic catheter after more than 30 minutes or so of its coming out, often prove difficult as the track tends to close over, quite quickly.

In the circumstance of this case, urethral catheterisation is the best option. It is quick, easy, and carries the least risk of aggravating any dysreflexia. Further, exactly the same situation had occurred with Mr [redacted] at Dunedin Hospital, in January 2001 when the suprapubic catheter came out, a urethral catheter was inserted and a few days later as an elective procedure the supra-pubic catheter was replaced under general anaesthesia. No problems were recorded on that occasion.

#### *Supra-pubic catheterisation*

The clinical decision here was taken to try to replace the suprapubic catheter.

- i) Continuous or repeated blood pressure recordings need to be made during the intervention. Fluctuations of blood pressure were noted in keeping with the known autonomic dysreflexia with pressures ranging from his normal of 80/50 up to 151/106, the later being measured at 1345 on June 11<sup>th</sup> after arrival at ED.
- ii) In a person known to be prone to autonomic dysreflexia, this procedure is better done under a general or spinal anaesthetic to avoid the risks of precipitating autonomic dysreflexia. At the Emergency Department the staff and the surgical registrar, recognised this risk of autonomic dysreflexia and its relation to a full bladder, and aspirated 150-200 mls from the bladder by a bladder puncture, before commencing.
- iii) Force required to insert the suprapubic catheter was considered to be 'excessive'.

The trocar and sheath is size 20Ch and has a diameter of about 7 mm. This size allows the size 16Ch catheter to be then passed through the sheath into the bladder. The trocar and sheath have to penetrate the thick and fibrous tendon of the Rectus muscle and as the suprapubic had been in for several years there would have been surrounding fibrous scar tissue. It does require significant pressure to insert. It is understandable that it might have seemed excessive pressure to anyone who had not observed this procedure before under these circumstances. At the time the notes do not mention that the patient developed pain or that he complained. We know from the autopsy that the pressure did not cause any perforation of the back wall of the bladder.

#### iv) Trauma and bleeding

To place a suprapubic catheter, the anterior surface of the bladder has to be perforated. This would result in some bleeding, which predictably would settle

without any intervention. The blood loss in Mr [redacted] case sounds more than expected. It is apparent that most of this was in the urine, as only about 400 mls in the bladder wall itself was documented at the autopsy. Blood loss was sufficient to drop his haemoglobin from 147 down to 88 grams. There is no account in the notes indicating whether a blood transfusion was considered. It should be noted that the common signs of blood loss with a low blood pressure and a fast pulse are not reliable in patients with spinal damage, and autonomic dysreflexia.

v) **Clamping the catheter to obtain a urine sample**

The clinicians deemed it important to exclude urinary infection and needed a urine sample. To do this the catheter was clamped so some urine would accumulate for subsequent collection. In these circumstances the clamp should be left on for as short a time as possible to obtain a sample. The clamp should be on only briefly as it can produce pain, which it did in this case, but even more importantly can precipitate autonomic dysreflexia. The patient recognised this but had a problem persuading staff to comply with his requests to release the clamp.

*Risk of Infection*

Any urological intervention in these circumstances is accompanied by the risk of urosepsis and septicaemia. Antibiotics are indicated as prophylaxis and should be given prior to the intervention. Perusal of the medicine charts indicates that Gentamycin was prescribed and given at 2120. Should septicaemia be considered as part of the diagnosis then blood cultures should be taken before the antibiotics were given, where possible. I could not find any reports of blood cultures having been taken.

**Collapse**

The clinically suspected diagnosis of massive pulmonary embolism was confirmed by the CT pulmonary angiogram Xrays. The management appears appropriate and thorough. A massive pulmonary embolism carries an extremely high mortality rate, and sadly it was not possible to revive him.

**Communications**

The perceived poor communication between staff and relatives is of concern and needs to be addressed.

**Autopsy findings**

(1) *Pulmonary embolism and deep vein thrombosis (DVT)* [redacted]

This was the cause of death.

The relationship if any, between the haematoma on the right lateral wall of the bladder and thrombosis in the deep pelvic veins, is not clear and needs to be further established. It is not stated whether there were also clots in the pelvic veins on the left.

Another site of thrombosis which can embolise is the deep veins in the legs and this is not mentioned in the autopsy report. That report also does not comment on



histological changes in the clots from the pelvic veins and the emboli that might corroborate the age of the clots.

Patients with spinal injuries are relatively more prone to DVT than active people, because the muscle pump which normally keeps the circulation going in the legs and avoids clots, is less efficient because the legs are paralysed. Immobility can predispose to thrombosis, but it is not clear from the notes whether he was lying still all the time he was in ED. Regular turning and assisted activity can help reduce the risk, of DVT but also of pressure areas. The nursing notes in Ward indicate that this was done as much as circumstances allowed.

Use of prophylactic anticoagulation should be considered before any major intervention or one that is likely to immobilise the patient for any length of time. This would not usually be considered for a catheter replacement problem.

*ii) Bladder findings*

The presence of two tracks into the bladder is to be expected under the clinical circumstances. There was no perforation of the bladder wall posteriorly.

*iii) ? Sepsis*

As this possibility was raised clinically, was there any autopsy evidence of septicaemia?

**SUMMARY**

While accepting that it is all very well to be wise after the event, in my view there are aspects of management in this case that indicate the standard of care was less than ideal, as described above.

- i) The decision to persist with attempts to replace the suprapubic catheter, rather than using a simple urethral catheter placement as a temporising measure.
- ii) The decision to proceed to replace the suprapubic catheter without a general or spinal anaesthetic, because of the risk of inducing or exacerbating the autonomic dysreflexia.
- iii) The labile blood pressure was considered to be due to the spinal injury rather than considering the possibility of blood loss contributing.
- iv) The timing of prophylactic antibiotics.
- v) The perception of poor communication with patient and relatives.

The patient died from a massive pulmonary embolism. I am unaware of evidence that this can be caused by autonomic dysreflexia.

Yours sincerely,



E P Arnold. MbChB(NZ), PhD(Lond), FRCS(Eng), FRACS  
Medical Advisor, and Urologist at the Spinal Unit,  
Burwood Hospital, Christchurch