MAGISTRATES COURT of TASMANIA

CORONIAL DIVISION

Record of Investigation into Death (Without Inquest)

Coroners Act 1995
Coroners Rules 2006
Rule 11

I, Rod Chandler, Coroner, having investigated the death of Teressa Maree Beswick

Find That:

a) The identity of the deceased is Teressa Maree BESWICK;

b) Ms Beswick was born in Devonport on 2 January 1969 and was aged 45 years;

c) Ms Beswick died on 24 October 2014 at the Mersey Community Hospital ('MCH') in Latrobe; and

d) The cause of Ms Beswick's death was the combined effects of widely metastatic (end-stage) carcinoma of the cervix and bronchopneumonia.

Background

In about June 2013 Ms Beswick was diagnosed with cervical cancer. Her initial treatment included a course of chemotherapy. On 13 October 2014 Ms Beswick had a MRI scan and was then informed that her cancer had metastasised to her liver and spine. Her prognosis at this time was extremely poor.

Circumstances Surrounding the Death

On 23 October 2014 Ms Beswick was attended by a palliative care nurse at her home. She was suffering increased pain throughout her spine and lower abdomen. The nurse arranged for her to be taken by ambulance to the MCH.

Dr Amanda Felmingham was a General Practice Registrar who was attached to the North West Specialist Palliative Care Service for extended skills training in palliative care. Ms Beswick was known to Dr Felmingham as she had been treating her as part of her placement. Dr Felmingham was anticipating Ms Beswick's arrival in the ED as she had been forewarned by the palliative care nurse. She went to the ED and spoke to Dr Glenn Bennett, a consultant in emergency medicine. She informed Dr Bennett of Ms Beswick's imminent arrival and the need for her admission and for

treatment with palliative pain relief. She indicated that the best way to control Ms Beswick's pain may be to change from her use of fentanyl patches to morphine with a syringe driver. At the time Ms Beswick's prescription was for fentanyl patch 37mcg per hour.

When Ms Beswick arrived in the ED her management was assumed by Career Medical Officer, Dr Rajesh Menon. He was advised by Dr Bennett of the discussion with Dr Felmingham and the plan to admit Ms Beswick for pain relief.

Dr Menon spoke to Ms Beswick. He advised her of the plan for admission and to commence morhine using a syringe driver. She advised she had previously been sensitive to morphine. Dr Menon suggested that the morphine infusion be tried in the ED and for it to be changed back to fentanyl if she had an adverse reaction to the morphine. Ms Beswick agreed with this course.

It seems that Dr Menon had little experience in commencing palliative morphine with a syringe driver. He sought the advice of Dr Felmingham. However, she had left the hospital. He made contact with her by telephone. She was in her car. She explained to Dr Menon the dosage of morphine that Ms Beswick was receiving via her fentanyl patches and how this should be converted to subcutaneous morphine. Dr Menon then proceeded to do the conversion calculation which he set out in his notes. He calculated the dosage at 45 mg. Nursing staff were then instructed to prepare the syringe driver to deliver this dosage. The syringe driver order forms were completed to show the 24 hour dosage to be 1080mg, that is an hourly dose of 45mg. The calculations shown on the syringe driver records were co-signed by registered nurses Sarah Hill and Kendall Pearce. However, it is noted that in their statements both nurses indicated to Dr Menon that the morphine dosage seemed excesive but he assured them that it was correct.

The subcutaneous infusion of morphine was commenced at 5:20pm. A 50 mcg dose of intra-nasal fentanyl was also administered at the same time. Ms Beswick was then transferred to the surgical ward. She was admitted by Registrar, Dr Chau Ng. It seems that Dr Ng discussed the morphine dosage with Dr Menon who showed him his calculations as documented in the ED notes. Dr Ng accepted the dosage to be correct. Thereafter operational checks were made on the syringe driver. At 9.00pm it had infused 2.0 mL, i.e. 160 mg of morphine. At 12:20am the operational check showed that 3.6mL had been infused, i.e. 288mg of morphine. At this time Ms Beswick's respiratory rate was noted at 12 bpm. At 3:45am the next operational check showed 5.3mL had been infused, i.e. a total of 424mg of morphine. At this time Ms Beswick's respiratory rate was noted to be 10 bpm. At 5.00am it was recorded by nursing staff that Ms Beswick had been administered 493 mg of morphine since the infusion commenced. It was also recorded that she was *"difficult to wake, sweating++, pupils pinpoint, slurred speech, chest rattly."* At this point a Dr Brough requested that the syringe driver be turned off until Ms Beswick's condition improved or she complained of pain.

At an operational check at 5:30am on 24 October 496mg of morphine had been infused. The respiratory rate was 10 and Ms Beswick was described as having pin

point pupils, was *"sleepy"* and her oxygen saturation levels were noted at 88-91%. The infusion was stopped. It was restarted at 7:40am when it was noted that Ms Beswick was *"crying in pain"* and her respiratory rate was 24 bpm. However, it was ceased 20 minutes later when her sedation score was noted as "2." At this time nursing staff had concerns about the dosage of morphine and an urgent medical review was sought.

At 8:55am the MCH pharmacist recorded in the records: *"This dose needs urgent review as I don't believe the dose is correct."* At about 9.00am a Code Blue was called because Ms Beswick's conscious state was not improving. To this point a cumulative dose of 497mg had been administered. She was given oxygen. At 9:20am Ms Beswick was reviewed by Nephrologist and Consultant Physician, Dr Jay Sen Gan. It was clear by this point that Ms Beswick had been receiving an overdose of morphine. He noted that she was in respiratory distress and had mild hypotension and tachycardia. Clinically Ms Beswick appeared to Dr Gan to have narcotic withdrawal having been given naloxone shortly beforehand.

There was a further MET call at 11.45am because of the level of sedation, hypotension and increased respiratory rate. Thirty minutes later Ms Beswick was transferred to the High Dependancy Unit (HDU). She was treated with IV antibiotics and IV fluids. It was noted at this time that she was *"alert and asking for drinks of water."*

Dr Gan met with members of Ms Beswick's family at 1.45pm. He explained to them the morphine overdose. It was noted that the family did not want Ms Beswick to be treated with intubation or CPR. That afternoon Ms Beswick was closely monitored. Her condition further deteriorated and she died at 5.10pm.

Post-Mortem Examination

This was undertaken by Forensic Pathologist, Dr Donald Ritchey. He reports that in his opinion the cause of Ms Beswick's death was the combined effects of widely metastatic (end-stage) carcinoma of the cervix, bronchopneumonia and excessive morphine sedation.

In his report Dr Ritchey also makes these comments:

"*Toxicology testing of peripheral femoral vein blood obtained at autopsy revealed a markedly elevated concentration of morphine that was, "within the reported fatal range." The interpretation of this result is complicated by several factors. First is that morphine is subject to post-mortem redistribution such that the concentration identified in post-mortem blood may not reflect the actual concentration in the blood at the time of death. Also individuals on long term opiate therapy develop tolerance to opiate medications of all types (cross tolerance) and blood concentrations that may be required for pain control in an opiate tolerant individual might be fatal to an opiate naïve individual.*

"These findings are interpreted by me to suggest that Ms. Beswick was actively dying at the time she presented with intractable pain to the hospital. The extensive tumour burden seen at autopsy would be expected to cause imminent death. Analgesia with morphine at a high dose was clinically warranted, however the central nervous system and respiratory depressive effects of such a large dose, in the setting of acute bronchopneumonia and terminal tumour burden, likely accelerated the process."

Investigation

The focus of this investigation has been upon the excessive dosage of morphine administered to Ms Beswick. How did it come to pass that this overdose occurred? What role, if any, did it play in Ms Beswick's death?

To assist in the investigation, statements were obtained from the following personnel at MCH:

- Dr Rajesh Menon, Career Medical Officer
- Dr Amanda Felmingham, Palliative Care Consultant
- Dr Bruce Webb, Medical Officer
- Ms Kendall Pearce, ED Nursing Staff
- Ms Sarah Hill, ED Nursing Staff
- Rodney Rouse, After Hours Nursing Coordinator
- Ms Chantelle Graham, Nursing Staff
- Ms Cheryl Harrison, Nursing Staff
- Ms Simone Collins, Nursing Staff
- Ms Anne Jong, Nursing Staff
- Ms Sandra Graham, Nursing Staff
- Michael Grant, Nursing Staff
- Dr Faranak Dehghani, Medical Registrar
- Dr Thitipoom Aikphaibul, Medical staff
- Dr Jay Sen Gan, Consultant Physician
- Dr Chau Ng, Medical Registrar

- Ms Rachael Heng, Pharmacist

In addition, the investigation has been assisted by a Statutory Declaration provided by Ms Beswick's daughter, Ms Taneka Parker, along with a statement supplied by Ms Beswick's mother, Mrs Elaine Reid.

The investigation has also included:

1. A review of Ms Beswick's hospital records at the MCH carried out by research nurse, Ms L K Newman.

2. The compilation of a report upon the investigation made by Dr A J Bell as medical adviser to the Coroner.

3. Meetings attended by myself, Ms Newman, Dr Bell, Dr Ritchey and State Forensic Pathologist, Dr Christopher Lawrence, to periodically review the investigation.

In his report Dr Bell advises of the following:

- It is standard and appropriate practice to use the subcutaneous infusion of morphine via a syringe driver to control pain for a patient in Ms Beswick's situation.

- The maximum effective dose of morphine for an opiate tolerant patient such as Ms Beswick is 120mg per 24 hours (5mg per hour) when delivered by subcutaneous infusion.

- The morphine dose of 45mg per hour or 1080mg per 24 hours as calculated and prescribed by Dr Menon was nine times the maximum effective dose. Dosage of this magnitude was most inappropriate.

- The principal cause of Ms Beswick's death was her cancer which caused severe metabolic and immunological dysfunction. The evidence indicating that at 12.15pm on 24 October Ms Beswick was alert and requesting water suggests that her morphine overdose was a secondary cause of death.

Findings, Comments and Recommendations

When Ms Beswick presented at the ED on 23 October 2014 it is apparent that she required an alteration to her medication regime to better manage her pain. It was agreed to replace her fentanyl patches with the infusion of morphine utilising a syringe driver. I accept Dr Bell's opinion that this was an appropriate course of treatment. This change of opiate necessitated a calculation to be made of the amount of morphine to be infused which equated with Ms Beswick's fentanyl patch prescription. Dr Menon has acknowledged that in carrying out this calculation he

failed to appreciate or recognise that the 45mg which the conversion table showed to be the correct amount was for a 24 hour period and not for one hour. In the result, for an uninterrupted period of approximately 12 hours Ms Beswick's syringe driver was calibrated to deliver a dosage of morphine 24 times greater than was intended. Over this period the records show that she was infused with 496mg of morphine which represents in excess of 40mg per hour. This amount is grossly in excess of the 5mg per hour which, in the opinion of Dr Bell, represented the maximum appropriate dose for Ms Beswick. In these circumstances I find that Ms Beswick was grossly overdosed with morphine whilst a patient of the MCH.

In his report to the coroner Dr Menon has acknowledged his error and offered his apologies to Ms Beswick's family. I accept that the morphine overdose was the result of a genuine mistake on his part and may partly have been attributable to his unfamiliarity with palliating patients with the aid of a syringe driver. Nevertheless, it is of concern that a medical practitioner with his experience (he graduated in 2002) did not instinctively recognise that his calculation of the morphine dose could not be correct and required reconsideration and/or consultation with others.

Dr Ng was the registrar in charge of the surgical ward and the person responsible for Ms Beswick's care upon her admission to that ward. The evidence shows that he had reservations concerning the correctness of the morphine dosage but accepted it to be correct after being shown Dr Menon's calculation. This is another matter of concern. As with Dr Menon it is my view that he should, as a registrar, have instinctively recognised that the amount of morphine being delivered to Ms Beswick could not be correct and taken steps to right the situation.

As a result of his post-mortem findings Dr Ritchey has expressed the view that Ms Beswick was suffering from widespread cancer and that she was actively dying at the time of her presentation at the MCH. I accept this opinion. It is consistent with the opinion of Dr Bell that Ms Beswick's cancer was the principal cause of her death. It is my view, and I find, that Ms Beswick's death was imminent when she arrived at the MCH on 23 October 2014, that palliation was the only realistic treatment option and that there was little prospect of her survival beyond the short term. The morphine overdose played a secondary role in her death in that it accelerated its arrival but only by a relatively short but inderterminable period.

This case highlights serious shortcomings within the MCH pharmacy concerning the safeguards required to prevent the dispensing of medications for prescriptions which are clearly questionable. It is my **recommendation** that the MCH undertake a review of its pharmaceutical protocols with a view to implementing practices which reduce the risk of drug overdoses such as has occurred on this occasion.

I have decided not to hold a public inquest into this death because my investigation has sufficiently disclosed the identity of the deceased, the date, place, cause of death, relevant circumstances concerning how her death occurred and the particulars needed to register her death under the *Births, Deaths and Marriages Registration Act* 1999. I do not consider that the holding of a public inquest would elicit any significant information further to that disclosed by the investigation

conducted by me. The circumstances of the death do not require me to make any further comment or to make any recommendations.

I convey my sincere condolences to Ms Beswick's family and loved ones.

Dated: 8 day of August 2016 at Hobart in the State of Tasmania.

Rod Chandler
Coroner