STATE CORONER'S COURT
OF NEW SOUTH WALES

Inquiry	**Inquest into the death of Lynette Maree Young**
Hearing dates:	8 April – 9 April 2015 and 29 June 2015
Date of findings:	27 July 2015
Place of findings:	NSW State Coroner Court – Glebe
Findings of:	**Magistrate H. Barry, Coroner**
File number:	2012/138799
Representation:	**Mr A. Casselden, Counsel Assisting** **Ms J. de Castro Lopo, Instructing** **Mr M. Fordham SC, Local Health District Western NSW** **Mr R Whyburn, Nurses Mulavana, Yeo and Skinner** **Ms E Elbourne, Dr Greenberg** **Mr C Simpson, Mr John Parry**

Findings:	**Identity of deceased**: The deceased person was Lynette Maree Young **Date of death**: died on 29 April 2012 **Place of death**: died at Dubbo Base hospital **Cause of death:** Shock following Interferon alpha treatment following removal of a melanoma **Manner of Death:** Medically related

The Coroners Act 2009 (NSW) *in s81 (1) requires that when an inquest is held, the coroner must record in writing his or her findings as to various aspects of the death.*

These are the findings of an inquest into the death of Lynette Maree Young

Introduction:

Lynette Young died on 29 April 2012 at Dubbo Base Hospital. She had been transported to hospital by ambulance from Wellington Hospital for further investigation and management following complaints of central chest pain radiating to her back following interferon alpha treatment for cancer.

She was 46 years old.

Ms Young lived with her partner John Parry and her daughter Maddison. Her other daughter Amy was studying in Wagga at the time. They lived on a property on the outskirts of Wellington, and she helped her partner raise and train horses.

Mr Simpson, appearing for Mr Parry read to the court a statement concerning Ms Young.

That statement spoke lovingly and eloquently about Ms Young, describing her as an amazing partner and a fantastic mother to her daughters. She was loving and caring and always thought of other people and her family first.

Mr Parry stated that Ms Young was very strong and determined to beat the cancer. She remained positive and focused on her family, being determined that they have a good time together.

She refused to complain and insisted on being open with her partner John and her daughters about her treatment.

The fact that both daughters have achieved success is a testament to Ms Young's love and to the quiet and dignified commitment of her partner John.

She is greatly missed.

The Inquest:

Under section 81(1) of the *Coroners Act 2009*, a Coroner holding an inquest is required to determine the following matters when holding an inquest:

(a) The identity of the deceased person;
(b) The date and place of the persons death;
(c) The manner and cause of their death.

Ms Young's identity and date and place of her death are un – contentious.
The primary focus of this inquest is the cause of Ms Young's death and the reason why her condition deteriorated after her admission to hospital.

The Evidence:

Background:

In November 2011, Ms Young had found a lump under her right arm. On 9 December 2011 samples from the lump were biopsied and on 20 December 2011 Ms Young was informed that she had cancer.

On 19 January 2012 Ms Young had an operation at Prince of Wales Private Hospital to have the lump excised. This surgery reportedly went well.

In February or March of 2012 John Parry accompanied Ms Young to Sydney to meet Dr Guminski, an oncologist at the Melanoma Institute in North Sydney.

Dr Guminski informed Ms Young that the cancer needed to be treated to prevent its return and that he recommended a course of Interferon Alfa.

She was to have this medication for five days, then two days rest for one month and then self-inject the treatment every second day for 36 weeks.

Treatment with Interferon commenced on 23 April 2012 at Dubbo Base Hospital chemotherapy unit. Ms Young received a first dose of Interferon Alfa that day and felt tired that night but otherwise well. She returned for treatment on the 24th, the 25th and 26 April. She was feeling the effects of the chemotherapy and looked more tired and was not herself.

On 27 April Ms Young had a blood test before treatment. She told the nurse at the chemotherapy unit that she was feeling – “fluttery and a little funny”.

The nurse contacted Dr Guminski by telephone and discussed with him the blood test which showed that the cancer markers were down. Dr Guminski instructed the nurse to give Ms Young half the normal dose of Interferon. The nurse administered the half dose and also informed Ms Young that if she felt any chest pain she should proceed straight to hospital.

On the evening of 27 April Ms Young felt tired and went to bed early.

Events of 28 April 2012

Early the next morning, that is Saturday 28 April 2012, she awoke feeling pain –“like constipation”. At 11am she complained of chest pain and was driven straight to Wellington Hospital by John Parry.

When Ms Young arrived she was examined by Dr Ian Spencer who ordered an ECG.

Ms Young was then sent by ambulance to Dubbo Base Hospital for further investigation and management of the chest pain.

She was seen by Dr Lang in Emergency who performed the initial examination and an electrocardiogram (ECG) - which indicated evidence consistent with pericarditis.

Later that evening Ms Young was admitted to G Ward and connected to telemetry.

Next morning Ms Young's blood pressure was undetectable and she was administered fluid. Her temperature was 35 degrees C which was in the hypothermic range. No urinalysis was recorded.

Events of 29 April 2012

At 10.05 on the morning of 29 April 2012 she was pale, unwell and complained of chest pain front and back. A bladder scan showed 198ml but no catheter was inserted.

At 10.20 Ms Young was examined by Doctor Renner and Doctor Kolveski. The differential diagnosis at that stage was right coronary artery S-T elevation, myocardial infarction (RCA STEMI) and the provisional diagnosis was pericarditis.

At 10.45 Ms Young was admitted to the High Dependency Unit (HDU).

At 12.50pm Dr Renner telephoned the on call cardiologist at Orange Base Hospital, Dr Ruth Arnold and expressed concern that acute coronary syndrome had not been ruled out.

Ms Young's serial ECGs were faxed to Dr Arnold at Orange, who replied at 1.30pm to say the ECG suggested pericarditis but the patient needed an echocardiogram to determine cardiac function and whether there was any evidence of pericardial effusion.

There was no echocardiogram technician available at Dubbo on the weekend and arrangements were made for Ms Young's transfer to Orange Base Hospital.

At 2pm Ms Young's blood pressure was 85 systolic and 68 diastolic. Her heart rate had climbed to 125 beats per minute and her temperature had dropped to 34.8 degrees C.

Between 2.35pm and 3.21pm observations were made frequently. Sometime between 2.30pm and 2.50pm a Medical Emergency Team (MET) call went out. Dr Greenberg and Dr Brown attended.

At 3.21pm, Ms Young went into cardiac arrest. An arterial line and central venous line were inserted. Intravenous fluids were administered.

Despite medical intervention Ms Young's pulse was lost and CPR was commenced.

Ms Young was declared dead at some time between 4.05pm and 4.40pm.

Level of care provided at Dubbo hospital.

Essentially, the level of care given to Ms Young can be characterised in part by a series of failures by the staff and the system.

These included inadequate observations and poor recording of notes and observations, inadequate handover, failure to recognise her deteriorating condition and failure to initiate a MET call at an appropriate time. There was a lack of trained staff to perform an echocardiogram during the weekend.

Inadequate Observations and poor recording

Ms Young was seen in the Dubbo Base Hospital Emergency Department on 28 April 2012. She was triaged as a category 2 patient and according to the *Between the Flags* policy, patients categorised as category 1, 2 or 3 should receive hourly vital signs observations.

The *Between the Flags* policy had been initiated by the NSW department of Health. This was a system of recording vital observations which if recorded in the yellow "flag" indicated a medical review was to be called. Any observations recorded in the red "flag" area indicated that an emergency Medical Team was to be called.

All the nurses who gave evidence stated that they had received training in the *Between the Flags* protocol.

The observation chart shows that whilst Ms Young was in Emergency there were only two sets of observations taken at 16.15 and 19.15 prior to her being transferred to G Ward. This was clearly contrary to policy.

Dr Lang examined Ms Young in Emergency. She performed an ECG and recorded that Ms Young had "*ST elevation across all leads which was consistent with pericarditis"* She also ordered a chest x-ray which was normal and performed a bedside echocardiogram.

As a result of that echocardiogram she concluded that Ms Young did not have a pericardial effusion.

Dr Lang did not document that finding but believes she told the Medical Registrar.

A decision was made by Dr Lang in Emergency Department to admit Ms Young to a monitored bed.

In fact Ms Young was admitted to an unmonitored bed in G ward at 19.20 hours on 28 April 2012. There is no explanation for this.

In G Ward Ms Young was connected to telemetry, but there is no evidence of any telemetry monitoring and no evidence of any telemetry readings.

An attempt was made to have this explained by Registered Nurse Mulavana who was in charge of G ward when Ms Young was admitted. Her evidence is largely unintelligible.

A:
"Patient at the time was connected to the telemetry unit. Until anything happening in the telemetry we are not getting printout…going to telemetry… they will see the 24 hours, 48 hours…. Telemetry monitoring. Any alarm will happen then we are going and checking the blood pressure, we are getting the printout, we will repeat the ECG. (T18)

During the period of her admission on the evening of 28 April there was no urine output recorded in relation to Ms Young.

Nurse Mulavana was unable to comment because she was "not looking after the patient".

Nurse Skinner responded that if the patient was ambulant at the time, as was the case with Ms Young, then a urine output would not be observed unless the doctor had specifically ordered it or if the patient had a catheter in situ.

It is noted that when Ms Young was transferred to G Ward, no vital sign monitoring instructions were documented other that Ms Young was to be admitted to a monitored bed.

A set of vital sign observations was taken upon admission to G Ward at 19.20.A second reading was required because her blood pressurs was labile and required rechecking.

In her written statement Nurse Mulavana states that Ms Young had “IV therapy in progress.

In her oral evidence however, she told the court :

“*I cannot remember that one, intravenous therapy*”,……and further

“As I told you I just helped my junior staff while she came….I didn’t clinically look after so I’m not remembering what’s happening, that therapy”(T20).

There is no documentation in the progress notes of IV therapy
There is no evidence of a fluid balance chart.

Nurse Skinner, who had been allocated Ms Young’s care on 28 April stated that she could not recall if there was a fluid balance chart in existence. She did not believe it necessary to commence a fluid balance chart unless Ms Young “was on IV therapy and /or had a catheter in place.”(T44).

The progress notes made at 19.20 on 28 April note” IVC in situ”. Those notes were not made by Nurse Skinner

This apparent discrepancy highlights the lack of systematic approach to documentation.

In fact there is no record of Ms Young’s urine output having been observed or documented prior to 9am on 29 April.

Dr Karamkar noted in his entry in the medical notes at 9am, “no uo”(urine output)

At 10.05 Nurse McAlister notes that “bladder scan attended 198mls”.

There is no evidence of any attempt to insert an indwelling catheter to closely monitor her urine output.

Mr Daniel McCluskie,Registered Nurse, Manager of Policy and Practice, Nursing and Midwifery Directorate, Murrumbidgee Local Health District

provided a written expert report to the court and gave oral evidence. In his Report dated 19 November 2013, he states:

"This failure to record any fluid balance, input or output despite receiving intravenous fluids and having a worsening cardiac condition is of significant concern"

In her oral evidence Nurse Skinner stated that on admission to G Ward Ms Young "*was alert and oriented and able to walk on her own and did not express any pain*".(41). She made no note of those observations.

Of some concern, is the fact that no further observations were taken of Ms Young between her admission to G Ward at 19.20 and 0500 the next morning, 29 April.

The policy at the time was for observations to be taken 3 times in a 24 hour period. However, Ms Young was for telemetry monitoring and The Greater Western Area Health Service Policy Directive - Telemtry Monitoring states that observations should be taken every 4 hours.

Mr McCluskie stated that this *"lack of adherence to policy regarding observations of unwell cardiac patients is of concern"*

Staff in G ward were advised on the morning 29 April that there was an increased troponin level from a blood test the day before. A set of observations was taken at that time.

Dr Karamarker saw Ms Young in relation to her raised troponin levels at about 9am.He notes that her blood pressure at that time was "unrecordable" and difficult to obtain on manual measurement .This is not recorded in the Observation chart. His plan was to reassess blood pressure after fluids were administered.

The next set of observations was not documented until 10.45, despite Ms Young's condition, being "pale and unwell and complaining of discomfort"

At 10.30 following *a* review by Dr Kolevski and Dr Renner a decision was made to transfer Ms Young to the HDU with a differential diagnosis of Right Coronary Artery ST Elevation Myocardial Infarction (RCA STEMI) to the working diagnosis of pericarditis.

It is in the HDU that the most alarming failures took place.

Nurse Kaufusi was allocated her care.

There is no question that the care provided by Nurse Kaufusi was grossly inadequate and of serious concern.

At the commencement of her evidence, she made a statement of apology to Mr Parry and to the Court acknowledging her failings:

“I want you to know that I am sorry and I should have done better because I’m the last nurse and I should have done my best and I should have provided the best care.”(T85)

Despite her assertions that she had conducted a clinical assessment at 10.45am, the first entry in the progress notes made by Nurse Kaufusi was made at 14.25 - about 3 hours and 55 minutes after Ms Young’s admission to HDU.

Nurse Kaufusi offered by way of explanation that on that morning she needed to attend the ED as a patient. She maintains she told the nurse in charge that she would be absent.

Nurse Kaufusi did not return to HDU for some time and when she did she recorded vital sign observations from the monitor.

The first recording on the observation chart appears at 10.45, a time when on her own admission, she was in Emergency.

In her oral evidence she states that she cannot remember how long she was absent from the ward.

What is clear, is that she was absent for a significant period of time and the documentation on the Adult Observation Chart depicts a historical retrospective recording of vital signs during this crucial time in Ms Young’s care.

It is overwhelmingly clear that the failure to provide appropriate care and the failure to document observations during this critical time was significantly outside the expected standards of a Registered Nurse.

Inadequate Handover

The evidence raised concerns about the adequacy of handover by staff between shifts.

Nurse Mulavana stated that at the end of her shift on 28 April, she handed over Ms Young's care to the night staff.

She maintained in her oral evidence that this did not involve a 'clinical handover' but was a "general" handover . From her oral evidence, which was difficult to understand, it appears this did not mean that the next shift was apprised of the condition of every patient.

Q: So why are you so certain that you did not do a clinical handover as you term it?

A: I – I don't know the patient .. I didn't look after the patient…look after Mrs Young so I didn't handover to her. (T34)

Nurse Skinner explains more succinctly in her evidence, the system of handover that was in place at the time.

Q: What was the usual practice in relation to handover on G Ward in April 2012?

A: At that time of night it was done at the nurses' station or in the – actually at the time it was probably done in what was classed as the handover room at that time as this was prior to walk around handovers and it would have been handed over to whomever was allocated that load. (T46).

Disturbingly, when Nurse Kaufusi absented herself from HDU on 29 April, there does not appear to have been any handover of Ms Young's care to another nurse.

Nurse Richardson was in charge of HDU at the time and notes in her written statement to the court that Nurse Kaufusi was absent on more than one occasion. According to her statement, Nurse Richardson contacted the ADON to inform her of nurse Kaufusi's absence, but nowhere is it recorded that there was a handover of care to another nurse during that crucial time.

Failure to recognise Ms Young's deteriorating condition and failure to respond

When observations were taken by staff at 9.00 on 29 April her blood pressure was "undetectable." At that time the response was to administer "slow fluids" and then to reassess BP and to "encourage oral intake."

Also at that time, Ms Young was in severe pain with a score of 7/10 and there was no recorded urine output.

According to an expert report from Dr Vinen, Emergency/Intensive care Specialist, at that time a MET call should have been made.

By 10.00, Ms Young was "pale and unwell" with a manual blood pressure systolic 88 and heart rate102. At this time she was hypotensive and had tachycardia.

Again, at this time there should have been sufficient concerns to activate a MET call according to Dr Vinen.

Nursing staff called for a review by the Medical Registrar.

Dr Kolevski, Medical Registrar, assessed Ms Young at 10.20 with Dr Renner, Consultant Physician, who was a locum at the Hospital.

Dr Kolevski stated that Dr Renner was concerned that changes to the ECG were due to acute coronary syndrome.

He acknowledged that at 10.20 Dr Renner was aware that Ms Young's blood pressure was 88 systolic which put it in the red zone on the *Between the Flags* protocol.

He further acknowledged that at that time a MET call should have been considered, but stated that whilst he gave it some consideration he could not say if Dr Renner gave it any consideration.

Dr Kolevski assumed that Dr Renner would have known the protocol.

Dr Kolevski made contact with Dr Gray, the on- call Cardiology Registrar at Royal Prince Alfred Hospital and faxed through to Dr Gray Ms Young's test results.

Dr Gray suggested he call Dr Arnold the on- call cardiologist at Orange Base Hospital, for advice.

Dr Arnold suggested an echocardiogram was indicated. There was no ultrasonographer on duty at Dubbo Hospital over the weekend and it was determined at that time (about 13.30) to keep Ms Young at Dubbo until the test could be done the next day.

At 14.25, Dr Kolevski and Dr Renner again reviewed Ms Young and noted her deteriorating condition. A decision was then made to transfer Ms Young to Orange Hospital for an urgent review and echocardiogram.

A MET call was finally made sometime between 2.30pm and 2.50pm, but prior to this the documentation showed that at 14.10 she was hypotensive and tachycardic.

Because of the lack of certainty about cause of death it is not possible to be overly critical of the medical attention received by Ms Young, other than the failure to initiate a rapid response in a more timely manner.

Mr Simpson, appearing for Mr Parry, raised a number of concerns about the treatment by Dr Renner. He stated that Dr Renner treated Mr Parry and the family dismissively and with arrogance.

This is partly consistent with the way Dr Renner responded to questions during the inquest. It is not known if this was because he was giving his evidence via telephone from New Zealand and was therefore having difficulty interpreting the questions or whether he simply was unable to respond in a credible manner.

Either way, his evidence could not be called satisfactory.

He was unable to satisfactorily explain why he had ordered at 14.25 *“patient not for IV fluids or Mg SO4”.*

Dr Vinen opined that this order was deserving of strong criticism.

In response to questioning about this direction, Dr Renner stated:

Q: Well my question Dr Renner is given the patient’s presentation do you believe that on that occasion you informed the nurse that the patient was not to have IV fluids?

A: I am not aware of seeing that. It could have been, but if a patient complained of pain they wouldn't call me, they would have called one of the junior doctors.(T18)

More disturbing, is Dr Renner's apparent view in relation to progress notes.

Q: Did you as a matter of course when you were seeing patients then, read the progress notes?

A: Well when we, when I see patients any relevant information I expect to be passed on to me.

Q: My question was did you yourself read the progress notes?

A: I don't routinely, I don't routinely read the progress notes before I see the patient , no.

Q: And why not?

A: That's not generally the practice in hospitals anyway (T22).

And further;

Q: Well Doctor, you have the adult observation chart, if you go to the last column please which is 14.15, do you see that the heart rate is recorded at 140 or between 130 and 140?

A: No, it doesn't show that here. The respirator rate was about somewhere between15 and 20. The heart rate here was 110. Between 110 and 120.

Q: And for 14.15 the last entry is it not?

A: Yes

Q: Recorded at between 130 and 140?

A: The last one here is between 110 and 120.

Q: All right well even on that do you accept that that would place the patient as being tachycardic?

A: Yes

Q: And if you look at the temperature on the same chart, do you see that it is 14.05 the temperature is charted at 35 and then the next one 34.5 degree Celsius?
A: Yes

Q: Do you accept that that is hypothermic?
A: Well it is low.

Q: I want to suggest to you that given those two vital sign observations, the raised heart rate and the low temperature that that was reason in itself to make a MET call, do you accept that?

A: Well usually MET calls are made when a person suddenly deteriorates or virtually arrests.

Q: Well let's just take temperature as an example of rapid deterioration. Do you see that the temperature has dropped significantly on the chart from 11am in the morning?

A: I wasn't aware of that on the day. I can't remember seeing that. (T 15 and 16)

These questions and answers probably explain why Dr Renner did not consider making an earlier MET call.

Autopsy Report and Cause of Death.

An autopsy report prepared by A Firouz-Abadi dated 4 June 2012 lists the cause of death as:

Shock. Cardiac Arrest. Pericarditis.

A supplementary Report prepared by JB Hobbs, Clinical Associate Professor Sydney University, dated 4 June 2012 stated the cause of death as:

Due to Pericarditis with exudate causing cardiac tamponade and interfering with the action of the heart to cause failure

Dr Vinen is in agreement. His conclusion is:

Her death was due to unrecognised and therefore untreated acute cardiac tamponade in combination with Perimyocarditis due to acute pericarditis which in turn was due to treatment with interferon alpha an agent known to cause acute pericarditis complicated by acute tamponade in patients with metastatic melanoma.

Dr Greenberg, Director Critical Care Dubbo Hospital attended Ms Young on the afternoon 29 April.
He performed an echocardiogram .His conclusion as to cause of death was:

A large pericardial effusion with cardiac tamponade.

Whilst Dr Greenberg was setting up to perform a pericardiocentesis, Ms Young went into cardiac arrest. He performed the procedure with some difficulty whilst cardiac massage was being performed.

He withdrew 50ml fluid but despite resuscitation attempts Ms Young passed away.

An alternative opinion has been expressed by Dr Levi, Oncologist and Dr Keogh Cardiologist.

Dr Levi considered it "*more likely than not*" that Ms Young died of

Fulminant sepsis on the basis of initial neutropenia secondary to interferon therapy

Dr Keogh stated that it was "very difficult to determine Ms Young's cause of death" She concluded:

Ms Young died primarily from shock. In the absence of a bleed before the arrest and in the absence of heart muscle disease, this leaves septicaemia as a possibility.

All experts agree that treatment with Interferon Alpha can have adverse effects and that the illness suffered by Ms Young, leading to her death was precipitated by Interferon therapy.

Because of the differing opinions I am unable to determine with any certainty the Cause of Death.

Given the areas of agreement between the experts, Counsel Assisting proposed, with consensus from all the parties, that the cause of death be noted as:

Shock following interferon alpha treatment following the removal of a melanoma.

Conclusion and recommendations

Mr Fordham, representing The Greater Western Local Health District acknowledged that there had been failings in the treatment of Ms Young at Dubbo Base Hospital.

He stated that since that time a great deal of work has been done to improve the system, not only for the staff in the hospital but for the patients admitted to Dubbo Hospital.

Nurse Kaufusi has undergone further training after being under a period of supervision. She is currently attending a Master's Degree in Emergency Medicine.

Ms Bickerton, General Manager Dubbo Base Hospital provided an extensive report listing the wide range of changes that have been made since the death of Ms Young. Relevant to this inquest are the following:

- Staff who were involved in the care of Ms Young have attended three tiers of training relating to *Between The Flags*

- A majority of staff including JMOs have completed DETECT training

- There has been an improvement in frequency of Rapid Response calls

- A document has been made available in Emergency detailing a flow chart of escalation for emergency situations given that there is still no formal after hours echo services available in Dubbo.(Dr Greenberg considered it would be appropriate to have a list available indicating those persons who are sufficiently experienced to perform bedside echoes, especially given the turnover in staff in Emergency)

- A new Telemetry policy has been put in place including directives as to the handover of patients with telemetry

- Staffing has increased in ICU with a JMO rostered on 24hrs per day 7 days per week. Also an Emergency Physician is on duty daily and on call out of hours, The number of staff in ICU has increased with 4 nurses and 1 doctor present all times.

- Of particular relevance to this inquest is the introduction of regular consultants instead of locums. These consultants work one week at a time providing consistency and a higher level of cover.

There has also been an improvement in the handover procedure between shifts. A physical handover is now required, which includes

observing the patient, discussing any issues and if appropriate interaction with the patient.

Because of continued lack of availability of persons trained in echocardiograms, I have determined to make the following recommendation.

Recommendation

That Dubbo Base Hospital consider compiling and circulating, within the hospital, a list of personnel who have sufficient training, qualifications or experience to be able to perform urgent after hours bedside ultrasound or echocardiograms.

Dr Greenberg, in his oral evidence stated that it is possible to complete training within one day, for fast scanning or focussed assessment with sonography for trauma, although to become proficient in that area a number of procedures would need to be performed.

I have therefore included the following recommendation.

Recommendation

That Dubbo Base Hospital give consideration to encouraging medical staff to take up training in bedside ultrasound.

Findings required by s81(1)

As a result of considering all of the documentary evidence and the oral evidence heard at the inquest, I am able to confirm that the death occurred and make the following findings in relation to it.

The identity of the deceased
The deceased person was Lynette Maree Young

Date of death
Died on 29 April 2012

Place of death
Died at Dubbo Base Hospital

Cause of death
The death was caused by Shock following interferon alpha treatment following removal of a melanoma

Manner of Death

Medically related

I close this inquest.

H. Barry
Coroner
Date 27 July 2015