QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Marcia Joy LOVEDAY**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Bundaberg
FILE NO(s):	2010/2516
DELIVERED ON:	28 October 2013
DELIVERED AT:	Mackay
HEARING DATE(s):	9 & 10 September 2013
FINDINGS OF:	David O'Connell, Central Coroner
CATCHWORDS:	CORONERS: Inquest – death in hospital, Ampicillin administered to patient allergic to penicillin, patient wearing medical alert bracelet, patient had existing hospital file noting allergies, cause of death, anaphylaxis or underlying conditions, hospital procedures reviewed, comment on design and use of medical alert devices.

REPRESENTATION:

Counsel Assisting:	Mr J M Aberdeen of Counsel
For the Family:	Mr Guy Sara of Counsel i/b Mr Chris Parker of Charltons Lawyers
For Queensland Health:	Ms Stephanie Gallagher, Solicitor, with Ms Julie Cameron, Solicitor, of Corrs Chambers Westgarth
For Qld Nurses' Union:	Ms Sally Robb of Counsel, i/b Ms Judy Simpson of Roberts & Kane, Solicitors
For QAS:	Ms Donna Callaghan of Counsel, i/b Ms Fiona Banwell of Department of Community Safety

Introduction

[1] This is an inquest into the death of Marcia Joy Loveday. Mrs Loveday was a frequent patient[1], over a number of years, of the Bundaberg Base Hospital. Her hospital records noted her known allergy to penicillin. She wore a *MedicAlert*® brand bracelet designed to notify persons to her known allergies.

[2] On 19 July 2010, she was in deteriorating health and was transported by ambulance to the Bundaberg Base Hospital, where she was admitted through the Accident & Emergency Department. Shortly after admission she was administered IV penicillin although she had a known[2] allergy to penicillin. Within minutes of this injection she allegedly suffered an allergic reaction, known as an anaphylaxis, was then administered appropriate treatment, but a few days later she passed away.

[3] It is unclear whether she died as a result of the alleged anaphylaxis or her underlying conditions which caused her to present to the hospital. In addition, I will also explore the issue of notification of known allergies in an Emergency Department setting, and the system of *MedicAlert* bracelets, better described as 'medical identification products'.

Tasks to be performed

[4] My first, and primary task under the *Coroners Act 2003* is to make findings as to who the deceased person is, how, when, where, and what, caused them to die[3]. In Mrs Loveday's case there is no real contest as to who, when, and where she died[4], my real task is to determine how and what caused her to die.

[5] Central to these issues are the questions of how Mrs Loveday's known allergy to penicillin was not made known to, or enquired about by, medical personnel in the Accident & Emergency Department (notwithstanding Mrs Loveday was a long-standing patient of the Bundaberg Base Hospital and her allergy to penicillin was on that hospital's records), she wore an 'alert' bracelet, and I need to consider what role the *MedicAlert* bracelet (or any such similar bracelet) has in such circumstances.

[6] Accordingly the List of Issues for this Inquest are:-

1. The information required by section 45(2) of the *Coroners Act 2003*, namely, when, where, and how Mrs Loveday died, and what caused her death.

[1] Recent recorded attendances at Bundaberg Base Hospital (UR No. 011556) were 1987, 1990, 1995, 1996, 2002, 2005, 2006, 2007, and 2010. Certain of these years had more than one attendance. Her first attendance is recorded as 1971 for the birth of one of her children.
[2] This allergy was recorded on her hospital records
[3] Coroners Act 2003 s. 45(2)(a) – (e) inclusive
[4] See paragraphs [55] and [56] of these Findings

2. Why Mrs Loveday's *MedicAlert*® bracelet was not observed and recognised prior to the intravenous administration to her of Ampicillin on the morning of 19 July 2010?

3 .Why Mrs Loveday's existing hospital file was not delivered to the Emergency Department at Bundaberg Base Hospital prior to the administration to her of Ampicillin?

4. Did Mrs Loveday suffer (i) anaphylaxis, or (ii) an anaphylactoid reaction, or (iii) anaphylactic shock, shortly after the intravenous administration of Ampicillin on the morning of 19 July 2010?

5. Did Mrs Loveday's reaction to the administration of intravenous penicillin on 19 July 2010 cause her cardiac arrest, from which she was resuscitated in the Emergency Department at Bundaberg Hospital on the morning of 19 July 2010?

6. Was Mrs Loveday's medical treatment in the Bundaberg Hospital from the time of her cardiac arrest on the morning of 19 July 2010 until her death in the hospital on 23 July 2010 in accordance with best practice, having regard to all the circumstances?

7. What condition, or conditions, caused Mrs Loveday's death on 23 July 2010?

8. Is it possible that the cardiac arrest suffered by Mrs Loveday in the Emergency Department on the morning of 19 July 2010 may have hastened or accelerated her death on 23 July 2010?

[7] The second task in any inquest is for the coroner to make comments on anything connected with the death investigated at an inquest that relate to public health or safety, the administration of justice, or ways to prevent deaths from happening in similar circumstances in the future[5].

[8] The third task is that if I reasonably suspect a person has committed an offence[6], committed official misconduct[7], or contravened a person's professional or trade, standard or obligation[8], then I may refer that information to the appropriate disciplinary body for them to take any action they deem appropriate.

[9] In these findings I address these three tasks in their usual order, section 45 Findings, section 46 Coroners Comments, and then section 48 Reporting Offences or Misconduct. I have used headings, for convenience only, for each of these in my findings.

[5] Coroners Act 2003 s.46(1)
[6] Ibid s.48(2)
[7] Ibid s.48(3)
[8] Ibid s.48(4)

Background history of Mrs Loveday

[10] Mrs Loveday was born on 11 December 1935. She was 74 years of age and resided with her husband, Mr Keith James Loveday, in the Bundaberg area. Mr and Mrs Loveday were married on 4 December 1954 and resided together since that time. Mr Keith Loveday has since passed away on 24 March 2011, less than a year after the death of his wife. Accordingly the family's interests were represented through Mrs Narelle Joy Curd, Mrs Loveday's daughter.

[11] Generally, Mrs Loveday's health was considered to be good, and she was considered a person who was particular about seeking medical treatment or assessment when she thought she may have a medical problem. Mrs Loveday's medical history included events such as an appendix been removed in 1968, and an operation, ultimately unsuccessful, to reattach a torn muscle in her shoulder. Mrs Loveday suffered from diabetes and glaucoma, and she may also have suffered from asthma.

[12] From a medical perspective it is important to note that Mrs Loveday suffered from an allergy to penicillin and had done so for about 20 years. Immediately she became aware of this allergy she took, what she believed to be, a responsible approach, by wearing a *MedicAlert*® bracelet on her wrist. She wore that bracelet consistently through the years. She was wearing it as usual on the morning of 19 July 2010.

The events immediately preceding hospital admission

[13] On Friday, 16 July 2010 Mrs Loveday complained of chest and abdominal pain. She attended her general practitioner at the Hinkley Central Medical Centre. Her complaints were investigated which then included that she was unable to sleep due to phlegm running down the back of her throat. The doctor prescribed her *Clarithromycin* 250 mg, one tablet twice per day.

[14] As at the 16 July 2010, Mrs Loveday's medicatory regime was:

> Clarithromycin 250mg - one tablet twice daily
> Aspirin 100mg - one tablet in the morning
> Diamicron 60mg - two tablets in the morning
> Diabex 1000mg - one tablet twice a day
> Lipitor 40mg - one tablet at night
> Symbicort Turbuhaler
> Xaltan eyedrops 0.005% - one drop at night

[15] Mrs Loveday's chest and abdominal pain remained with her over the weekend of 17 and 18 July 2010. Early on Monday morning 19 July 2010, she was having chest pain and trouble breathing. She contacted her daughter by telephone regarding this.

[16] Mrs Loveday then called an ambulance for herself, prior to 9.00am that day. She then called a second time, on the 000 number, as her

condition was worsening. At 9.02am, QAS Officers Maree Wein and Tracey Britton were directed to attend at 7 Lamb Street, Bundaberg, concerning a 74-year-old female patient with breathing difficulties[9].

[17] QAS arrived at the Loveday home at 9.09am. Mrs Loveday was noted to be in respiratory distress, was able to speak words only, and was barely able to answer QAS questions asked of her. She was immediately given oxygen, and was then able to talk more freely, and answer more questions. Mrs Loveday provided her medical history, and advised she had been to her doctor three days previously due to shortness of breath.

[18] Mrs Loveday also complained of abdominal pain at the navel level, which moved left to right, and was dull and sharp in nature. She denied chest, neck, and arm or jaw discomfort.

[19] It seems clear Mrs Loveday remained in considerable distress. She was very restless, was perspiring, and became incontinent. As she was being stair-chaired to the stretcher, she told QAS officers that it felt like 'someone was sitting on her chest'. QAS officers then requested ICP (Intensive Care Paramedic) backup.

[20] QAS Officer Wein set out subsequent events as follows:

> 'We then administered one spray (400 microg) of Glyceltrinitrate (GTN spray) to relieve the patient's chest pain, which took some effect.
> The patient retained a Glasgow Coma Score of 15, which essentially meant that she was fully conscious throughout the trip.
> We arrived at the Bundaberg Base Hospital Emergency department at 10.04am, and the patient was triaged at 10.10am.
> Patient was off-stretcher at 10.15am, at which time we handed the patient over to hospital staff and brief[ed] them of our actions and what knowledge we have of the patient, including her Penicillin Allergy.'

[21] The QAS officers then completed what is known as an 'eARF' - electronic Ambulance Report Form. Information provided by QAS is that this eARF was lodged at 10.50am on 19 July 2010[10]. The eARF contained details of allergies in the following terms:

> '**Antibiotic** Penicillin; **>> CECLOR, MINOMYCIN, KEFLEX**'

[9] Statement of Maree Aileen WEIN, 09/09/11.
[10] There is no contest that this time of electronic lodgement is accurate.

The *MedicAlert*® Bracelet

[22] Mrs Curd provided her mother's *MedicAlert* bracelet for inspection by the court, and the parties, during the hearing. She also provided photographs[11] of both the obverse, and reverse, of her mother's *MedicAlert* bracelet.

[23] The bracelet may be described as a faded, silver coloured, metal bracelet, styled as a metal interlocking chain-link style bracelet, attached to a tapered ended, oval shaped plate[12]. The entire bracelet, both the chain and oval shaped plate, is of a uniform colour, except for what appears to be substantial wear, as would be expected and consistent with long-term usage.

[24] There is on one side, the obverse, a slightly raised pattern of words, again in the uniform colour, stating 'MedicAlert', written as two separate words in a vertical arrangement. Located between these two words is the recognised medical symbol of two snakes entwined around a rod[13]. Again this is embossed on the plate and displays the same uniform silver colour.

[25] On the reverse of the plate is engraved a telephone number, an apparent 'reference number', and the words 'ALLERGIC TO PENICILLIN, MINOMYCIN, & CECLOR**',** in block typeface, in a vertical arrangement. The allergies to these conditions are consistent with those recorded by the QAS officers, with one addition (not omission) as detailed in paragraph [21] above.

The events on admission of Mrs Loveday at Bundaberg Base Hospital

[26] Three health professionals had initial contact with Mrs Loveday upon her arrival at Bundaberg Base Hospital. These were Nicole Marina BLUNT[14] (*RN* – Triage), Jeremy Paul SITOMAN (*RN* - Emergency Dept), and Doctor Kevin John POWER (Emergency Dept).

[27] RN Blunt was co-ordinating triage when the QAS arrived with Mrs Loveday. It was a very busy morning, with RN Blunt describing the scene as 'extremely busy'[15] and 'chaotic'[16]. There were already two

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[11] See exhibits G1 (obverse bearing the principal design) and G2 (reverse or back)

[12] The actual bracelet was available at the inquest and is of metal construction, silver in appearance, and not an item of gold jewellery as the photographs tendered as exhibits G1and G2 may appear to be

[13] Many "medical" organisations use a symbol of a short rod, entwined by one or two snakes, and at the top a pair of wings, which is known as a caduceus or magic wand. It is termed the "The Rod of Asclepius", which relates to a Greek God associated with healing or medicinal practices

[14] Throughout my Findings I use the term for any registered nurses as 'RN' then their surname and a Medical Doctor 'Dr" then their surname. This is no disrespect in not stating their proper name title, rather it is for convenience with ease of identifying their clinical designation

[15] exhibit F2, Statement of Nicole Marina BLUNT, at para 14

[16] ibid at para 15

other ‘stretchers’ waiting for attention, and RN Blunt recalls that the QAS with Mrs Loveday, came to the front of the line, ‘and appeared anxious to be seen first’. RN Blunt deposed in her statement dated 20 February 2011[17]:

> ‘I observed the patient to be experiencing an increased work of breathing and sitting upright on the stretcher with her eyes open. Oxygen was *insitu via* a mask (unable to recollect whether it was a non-rebreather or ordinary face mask). I am unable to recall the exact words by the officers but recall the symptoms included pain in chest and shortness of breath which made [m]e believe that the patient was experiencing a cardiac event. I immediately collected the triage details which included the patient details and the patient allergies prior to allocating the only acute bed available at this time, Resus 1. I directed [QAS] to take the patient to Resus 1 area but advised them to stay with the patient as the nurse was transferring another patient out of this area and would return as soon as possible with a bed to transfer the patient onto.’

[28] RN Blunt provided a further statement through the hospital's solicitors on 8 June 2011, in which she stated[18]:

> ‘18. I observed the patient to be experiencing some difficulties with breathing. She was sitting bolt upright on the trolley, with oxygen being administered by mask. Her eyes were open. I am unsure as to whether she was able to speak in sentences.
> 19. I recall the ambulance officers saying that Mrs Loveday had complained of chest pain and shortness of breath. (I am unable to recall their exact words). I remember thinking she must be suffering from an acute cardiac condition. I recall categorising Mrs Loveday as a 'Triage 2'.
> 20. I immediately collected the admission details required to generate the paper work. This included patient details and allergies. I recall the patient's allergies *included* Ceclor, Minamycin and Keflex. I do not recall the ambulance officers saying that Mrs Loveday was allergic to Penicillin. The Emergency Department Clinical Record was generated. Attached and marked with the initials 'NMB-01' is a copy of the Emergency Department Clinical Record.
> 21. I directed the ambulance officers to take Mrs Loveday into the resuscitation room, but to stay with her until a nurse arrived to take official handover. To the best of my knowledge, RN Jeremy Sitoman was Mrs Loveday's primary nurse.’

[17] Ibid at annexure ‘NMB-02”
[18] Exhibit F2

[29] The exhibit ‘NMB-01’, referred to by RN Blunt in her statement, is a printed document entitled *Emergency Department Clinical Record*. It contains no hand-written notation by any person. It is not suggested that any hand-written notation was made by RN Blunt in triage, with respect to Mrs Loveday. In the relevant box marked ‘Allergies’ are the printed words: ‘CECLOR, MINAMYCIN, KEFLEX’. Significantly, there is no reference to penicillin in this document.

[30] The order of listing of these three substances is the same as that contained in the QAS eARF, referred to above in paragraph [17]. Mrs Loveday's *MedicAlert*® bracelet specifically mentions ‘PENICILLIN, MINOMYCIN & CECLOR’. The bracelet does not mention ‘Keflex’.

[31] RN Blunt makes no reference in either of her statements to looking for, or sighting, any *MedicAlert*® bracelet or device. If RN Blunt had looked for, or seen the bracelet, I consider that she would have stated this fact.

[32] In her evidence given at the inquest, RN Blunt considered that if she had been told that Mrs Loveday had an allergy to penicillin she would have written this down. This was her usual practice. When she gave evidence she struck me as being a very experienced nurse. Significantly the Queensland Ambulance Service officer gave evidence that when she ‘handed over’ Mrs Loveday to RN Blunt she told RN Blunt of four allergies which included penicillin. The ambulance officer who provided that handover was Tracey Eileen Britton and she completed her electronic reporting form later that morning (electronically recorded as closed off at 10.52am) where she included penicillin in the known allergies.

[33] There is a conflict in the evidence between the ambulance officer and the triage nurse over what was said regarding the penicillin allergy at the patient handover in triage. It was suggested to me by counsel for Queensland Health that I need not resolve this conflict. On that issue I disagree. I think it important in the sequence of events, particularly as to my recommendations, that I do need to resolve this conflict in evidence.

[34] After viewing the ambulance officer and the nurse when giving evidence, I have formed a view that I accept the evidence of the ambulance officer that she told RN Blunt of the allergy to penicillin. I do this because the ambulance officer presented as a person who gave very straightforward evidence, could recall what occurred, and completed the reference to penicillin in her electronic report at about 10:52am that morning before she left the hospital. Of significance is that when the ambulance officer completed the electronic report (essentially as a contemporaneous note), she had no knowledge that Mrs Loveday had suffered a reaction due to her penicillin allergy.

[35] Whilst I prefer the ambulance officer's evidence over RN Blunt on this issue one must be careful to consider and appreciate the then triage system in place at Bundaberg Base Hospital under which RN Blunt and others were working. At that time the triage area was described as merely an area in a hallway with the triage administration officer not located next to the nurse. On this particular morning the triage area was very busy, which I accept. One must always bear in mind the circumstances under which someone is conducting their work, which can be in an environment far removed from the pace and environment which exists in a court room. I appreciate that an Accident & Emergency Department would certainly have times of very intense activity, where split second decisions and assessments are required to be made and implemented. This appears to be one of those times. I have formed the view that, regrettably, in this instance the triage nurse did not note down the fourth allergy of Mrs Loveday, her allergy to penicillin, which has in turn had consequences. Improvement in this system of triaging I speak about further in my coroner's comments or recommendations.

[36] RN Sitoman was working in the Emergency Department on a 7.00am to 3.30pm shift. Prior to the arrival of Mrs Loveday into his department, he had two other patients. He describes what happened[19]:

> '12. I saw Mrs Loveday arrive. She was wheeled in by the paramedics. She was sitting bolt upright on the trolley. She had a non-rebreather oxygen mask insitu, on high flow oxygen and it appeared as though she was trying to say short words. I could see she was acutely unwell and in respiratory distress.
> 13. I went straight to the store room to get the BIBAP machine.
> 14. Mrs Loveday's respirations were fast and she was using accessory muscles. She was clearly struggling to breathe. She was conscious and co-operative, notwithstanding the fact that she was agitated.
> 15. I received a handover from the QAS. I cannot recall Mrs Loveday's attempt at describing her discomfort, but to the best of my recollection, I think she pointed to her upper abdominal area.
> 16. I recall that Mrs Loveday's initial observations were satisfactory. She had breathing difficulties but her oxygen saturations were 98% on high flow oxygen.
> 17. I recall Mrs Loveday was assessed by Dr Kevin Power on arrival. She was also assessed by Dr Khalid Yousseff.
> 18. I also recall an intravenous cannula being inserted, bloods being taken and a Normal Saline bolus being given. I also recall that Mrs Loveday was given nebulised Salbutamol and a portable chest [x]ray being taken.
> 19. I remember Dr Power ordering IV Ampicillin and Hydrocortizone. I cannot recall the circumstances surrounding

[19] Exhibit F3

the administration of the drugs, including the checking procedures. I am fairly certain that I would have drawn the drugs up in the treatment room, but I cannot recall this occasion.

20. I can recall Mrs Loveday's condition deteriorating. She suffered a cardiac arrest and was actively resuscitated.
21. I recall that the resuscitation continued from 1043 to 1049 hours. Mrs Loveday's condition was stabilized.
22. During the resuscitation, I noticed the alert bracelet on Mrs Loveday's left arm, alerting staff to Mrs Loveday's penicillin allergy.'

[37] Exhibited to RN Sitoman's statement are copies of medical records bearing written notations, and RN Sitoman's initials. These entries begin on arrival of Mrs Loveday at 'Resus' at 10.15am. The covering sheet, which has been signed off by RN Sitoman, contains no information in the space provided for 'Allergies'. The reason for this is that RN Sitoman did not then know of Mrs Loveday's allergy status as the triage generated paperwork (which incidentally omitted the allergy to penicillin) had not been collected by him from the relevant 'pigeon hole'.

[38] RN Sitoman explained in his evidence at the inquest that whilst he was heading to collect the paperwork from the 'pigeonhole' his attention was distracted by Mrs Loveday's seriously deteriorating condition. Why the paperwork did not travel with the patient is a failure of the then system.

[39] I am informed, and I accept, that this system has now changed to ensure that the triage generated paperwork is at all times with the patient for treating clinicians to review.

[40] RN Sitoman was responsible for making the written entries from 10.15am until 10.40am. The final entry at 10.40am reads[20]:

> '200mg IV hydrocortizone - mobile CXR'

There is no mention at all of IV Ampicillin. From 10.43am ['Patient crashed'], entries were continued by RN Cherie Arnold, who went to the assistance of RN Sitoman upon his call for assistance.

[41] RN Sitoman stated that he first noticed Mrs Loveday's *MedicAlert* bracelet during the resuscitation process, after the 'Patient crashed' entry, which of course is after the prescribing, and administration, of the penicillin. There was no indication by him that the bracelet had previously been covered, or that it was otherwise not visible.

[20] Exhibit F3

[42] Dr Power was the first medical practitioner to have contact with Mrs Loveday. He provided a statement to the hospital's solicitors on 1 July 2011[21]:

> '11. I first saw Mrs Loveday being put into the resuscitation bay with QAS. …
> 12. I recall she was sitting upright on the trolley and looking critically unwell. She was diaphoretic and had marked respiratory distress. She was agitated, talking in very short phrases or single words.
> 13. No hospital records were available as she had not been to the Bundaberg Hospital and no family presented with Mrs Loveday to provide a history.
> 14. I walked into the resuscitation area partly through a verbal handover from QAS. The nurses were attaching monitors to Mrs Loveday.
> 15. It was my understanding that Mrs Loveday had complained of chest pain and shortness of breath (SOB). Her condition had apparently deteriorated after receiving initial treatment on the way to the hospital.
> 16. I recall a QAS officer saying she was a smoker with Chronic Obstructive Pulmonary Disease (COPD).
> 17. I examined Mrs Lovdeay. She was *in extremis.* Her respiratory rate (RR) was 34 and she had very poor air movement with marked wheeze. She was very tachycardic at 124 and hypotensive with a systolic blood pressure (BP) of 90. She was very confused. My initial diagnosis was that Mrs Loveday had an infective exacerbation of COPD. She may also have been septic, suspected because of her hypotensive state.
>
> …
>
> 19. The standard treatment for COPD is:
>
> (a) continuous Salbutamol nebs delivered *via* a high flow mask;
> (b) intravenous (IV) Hydrocortisone;
> (c) IV fluid bolus;
> (d) urgent portable chest x-ray (CXR).
>
> 20. Mrs Loveday did not respond to initial treatment.
> The CXR was reviewed and demonstrated a right lower lobe (RLL) consolidation[22].
> 21. Pursuant to current therapeutic guidelines, Mrs Loveday was administered antibiotics including IV Ampicillin and oral Roxithromycin. Antibiotics do not make an immediate difference to a patient's condition, but it is important they are given as soon as possible.
> 22. Following initial treatment as described [above], I then discussed the case with Dr Khalid Yousif who was the team leader on duty. Dr Yousif's orders were to continue current

[21] Exhibit F4
[22] 'right lower pneumonia' in typed notes. No handwritten notes have been provided to the inquest

therapy and Non Invasive Positive Pressure Ventilation (NIPPV) if she did not respond.

23. A few minutes later I was at the nurses' desk just outside the resuscitation bay when RN Jeremy Sitoman came to me and informed me that he was of the impression that Mrs Loveday's condition had deteriorated. …'

[43] Upon identifying a rapid deterioration in Mrs Loveday's condition, RN Sitoman immediately advised Dr Power. Dr Power, and shortly after Dr Yousif, went to the resuscitation cubicle where Mrs Loveday lay. Dr Power outlined what took place:

'24. Both Dr Yousif and myself immediately attended Mrs Loveday. She was clearly agitated and her respiratory effort had increased.

25. I considered the possibility of an anaphylactic reaction however there was no clinical evidence of such. She had no rash and no mucosal oedema. Intramuscular (IMI) Adrenalin was given and Mrs Loveday prepared for intubation.

26. Mrs Loveday then went into asystolic cardiac arrest.

27. Advanced Life Support (ALS) was initiated including CPR with IV Adrenalin. An Endotracheal tube (ETT) was placed. After two to three minutes of CPR and only one minute of Adrenalin, a return of spontaneous circulation (ROSC) was achieved. Mrs Loveday was ventilated in DEM and remained hypotensive despite successful resuscitation.

28. ICU was contacted. Dr Konopke, a Specialist from ICU immediately attended Mrs Loveday in DEM.

...

31. When discussing the possibility of Mrs Loveday having suffered an anaphylaxis to Penicillin, Dr Youssiff informed me that he had encountered no difficulties at all with airway swelling, *ie* angio-oedema (as you would expect in someone with an anaphylaxis). Mrs Loveday had a Grade 1 larynx and was very easy to intubate.

32. Dr Youssiff, the ICU consultant and myself discussed whether Mrs Loveday's collapse had been caused by a cardiac event or her rapidly deteriorating COPD. Irrespective of the cause, Mrs Loveday's cardio-respiratory collapse was treated pursuant to the criteria."

[44] In Dr Power's opinion, there was, at the time of Mrs Loveday's collapse, 'no clinical evidence' of an anaphylaxis. Dr Yousif assisted with Mrs Loveday's resuscitation. He too observed 'no signs of anaphylaxis'. However, he did advert to the possibility of such when speaking with Mrs Loveday's family following her resuscitation[23]:

[23] Statement of Khalid YOUSIF dated 19th May 2011.

‘9. The first time I recall seeing Mrs Loveday was when Dr Kevin Power requested assistance when Mrs Loveday collapsed. …
10. I went to the resuscitation bay, not in a supervisory role of Dr Power, but as an assisting Medical Officer.
11. Upon arrival I was told that:
    (a) Mrs Loveday had been in respiratory distress and was unable to give adequate history;
    (b) it was thought she had infective Chronic Obstructive Pulmonary Disease (COPD);
    (c) an intravenous line (IV line) had been inserted so that her medical condition could be treated;
    (d) a chest x-ray confirmed that Mrs Loveday had a community acquired pneumonia;
14. On my arrival, I recall that Mrs Loveday was unresponsive;
15. There was no respiratory effort from Mrs Loveday. I recall the staff performing CPR.
16. I understand that as soon as the allergy bracelet was identified, Dr Power ordered Adrenalin 0.5mg to be given intramuscularly (IM), thinking the collapse might be caused by an anaphylaxis.
17. I immediately attended Mrs Loveday's airway, by inserting an endotracheal tube (ETT). There was absolutely no response from Mrs Loveday.
18. I expected that if Mrs Loveday had collapsed due to anaphylaxis, there would be signs of anaphylaxis. I encountered no signs of anaphylaxis in that:
    (a) The ET tube was inserted easily. Mrs Loveday had a Grade 1 (easiest) larynx;
    (b) no tachycardia;
    (c) no rash;
    (d) no angiooedema; and
    (e) no bronchospasm.
19. I have never seen anyone suffer a severe anaphylaxis causing collapse yet have no associated effects.
20. Accordingly, I am of the view that Mrs Loveday's deterioration and collapse were caused by her disease process.
21. Mrs Loveday's Troponin 'i' was elevated indicating cardiac involvement. She lost consciousness because of her deteriorating clinical condition including end stage respiratory failure. This in turn caused strain on her heart and she suffered Myocardial Infarction.
22. It is extremely unlikely that the administration of Ampicillin changed Mrs Loveday's ultimate outcome.

…

25. I discussed the arrest with Mrs Loveday's husband and daughter. I informed her them [sic] Mrs Loveday was being artificially ventilated and I disclosed the fact that it was possible that her mother had suffered an anaphylaxis due to the inadvertent administration of Ampicillin. I also told Mrs Loveday's daughter that it was entirely possible that her mother's deterioration was due to her disease process itself."

[45] Dr Konopka, anaesthetist, has provided a statement to the hospital's solicitors. He makes no mention of a visit to the Emergency Department as mentioned by Dr Power[24]. He does state that 'Mrs Loveday's tryptase levels were not elevated as one would expect if she has suffered from a severe anaphalyxis'[25]. The opinions set out above from Drs Power, Yousif and Konopka point away from an anaphylactic reaction. Obviously, if it can be shown that anaphylaxis did not occur, then her death must have been due to her existing cardiac, pulmonary and gall-bladder conditions, either singularly or in combination.

[46] Following Mrs Loveday's deterioration in her condition she was immediately transferred to the Intensive Care Unit of the hospital. Her diagnosis at that time was 'NSTEMI [non ST elevation Myocardial infarction] + ? sepsis +/- anaphylaxis[26]'. This is recorded relatively consistently each day except on 21 July 2010 when it includes a reference to 'with cardiogenic shock'.

[47] Mrs Loveday failed to regain full consciousness throughout her time in the Intensive Care Unit, rather she had periods of waking when off sedation, and she reached a stage of being 'mildly arousable' but with 'no coordination of movements'[27]. Her chart provides a good record of her condition and treatment throughout her time in the intensive care unit.

[48] There is no criticism of her medical management from the time of her resuscitation in the Emergency Department at 10.43am on 19 July 2010, through to her treatment and management in ICU[28]. In fact the only criticism of her clinical management at the hospital was the incorrect administration of the Ampicillin[29].

[49] Ultimately Mrs Loveday died in the hospital's Intensive Care Unit on 23 July 2010 at 2.46pm[30].

[50] Her family expressed their concern that, whilst they understood her health was in a parlous state when she arrived at the hospital, because of the anaphylactic reaction Mrs Loveday never really regained consciousness and accordingly they never had the opportunity to say goodbye. Their position in this regard is entirely understood and respected. At no time throughout the inquest did I ever gain the impression that members of Mrs Loveday's family harboured any anger

[24] This may be oversight. His statement was not taken until 25/05/2011.
[25] Statement of Piotr Olgierd KONOPKA, para 12.
[26] Statement Dr AWS Thilakarathne dated 9 August 2011 at para 10 – 13 inclusive
[27] Ibid at para 13(a)(iv)
[28] Dr Vinen's report at pages 7 and 8, exhibit E3, Dr Vinen was the independent expert engaged by Mrs Loveday's family, and Dr AFT Brown, exhibit E4 page 4[6] which described her medical treatment subsequent to her cardiac arrest as "absolutely in accordance with best practice"
[29] Ibid at page 8
[30] see Life Extinct Form dated 23 July 2010, exhibit A2

towards those who medically treated her, rather they felt regret at not being able to say goodbye. The Loveday family adopted a most understanding position in relation to her medical treatment.

[51] In the circumstances an autopsy was required. An element of uncertainty was introduced following that autopsy.

[52] The autopsy examination was performed by Dr Rosemary Ashby on 28 July 2010. Dr Ashby has since passed away. Dr Ashby's Form 30 autopsy certification, issued shortly after completing the autopsy, was:

> 1(a) Cardio-renal failure
> due to
> 1(b) Gangrene of Calculous Gall Bladder
> [Other significant conditions - contributing to the death, but not related to the underlying cause [in 1(b)]:
> 2 Hypertensive and ischaemic heart disease; Diabetes mellitus
> Possible anaphylactioid reaction

[53] The Autopsy Report by Dr Ashby revealed that Mrs Loveday's gall bladder 'is darkened and strikingly distended, suggestive of impending necrosis'[31]. She described it as 'Necrotic (gangrenous)'[32]. It seems logical to accept that this condition was responsible for Mrs Loveday's abdominal pain of which she had complained to her husband, and to the QAS.

[54] Dr Ashby was nevertheless cautious about the possibility that an anaphylaxis had occurred. She stated in her report 'I am unable to say that an anaphylactoid[33] reaction has occurred but cannot say that it has not.[34]'

[55] Coroner Hennessey, who had previously made draft findings with respect to this death, understandably sought further assistance by way of a report from Dr Ian Mahoney, of the Clinical Forensic Medical Unit (CFMU), with the specific question:

> 'whether administration of penicillin needs to be further investigated in light of the Autopsy Report findings'.

[56] Dr Mahoney provided a short report to Coroner Hennessey on 5 August 2011, advising that he did not believe the penicillin issue required further coronial attention. Dr Mahoney noted that Mrs Loveday was seriously ill when she presented to the hospital, was given penicillin (although allergic to it), and shortly afterwards suffered

[31] Autopsy Report, 18/08/10, p 2.
[32] Ibid p 3.
[33] The appropriate term is 'Anaphylaxis' as Dr Brown's paper explains as set out below
[34] Ibid p 4.

cardio-respiratory collapse. He notes her resuscitation, and then observes:

> 'She then spent four days in intensive care until she died from other pathologies.[35]'

[57] In advising that the administration of penicillin did not require further coronial review, Dr Mahoney relied upon the following factors[36]:

1. Whilst an anaphylaxis or anaphylactoid reaction could have caused the cardiorespiratory arrest other possible causes or contributory factors in this case could include infection (septic shock) or heart disease (cardiogenic shock). The tryptase levels in this case do not provide confirmation of anaphylaxis.
2. The patient was resuscitated from her initial cardiorespiratory collapse and went on to be treated in intensive care for four days. Multiple pathologies were present and the underlying cause of death on the autopsy report is given as a gangrenous gallbladder. The patient was very ill before she had the penicillin dose and he did not believe the penicillin allergy made any difference to the outcome in this case.

[58] Following receipt of Dr Mahoney's report, Coroner Hennessey decided that an inquest would not be held. That finding was eminently reasonable in the light of the then evidence. That evidence pointed towards the following conclusions:

(i) that an anaphylaxis or anaphylactoid reaction was a possibility; but there was an absence of supporting medical evidence. Accordingly, it would not have been possible to find to the required standard of proof that an anaphylaxis or anaphylactoid reaction did occur;

(ii) if an anaphylaxis or anaphylactoid reaction did not occur, there was no basis for a finding that Mrs Loveday's death was caused by any other cause than her underlying cardiac, pulmonary or gallbladder conditions, either singularly or in conjunction with each other;

(iii) even if an anaphylaxis or anaphylactoid reaction did occur, its effect had been entirely 'spent' by the time of Mrs Loveday's death, i.e. it did not 'cause' death, nor did it hasten or accelerate the death.

[59] Following receipt of Coroner Hennessey's findings, Mrs Loveday's family requested that an inquest be held. This request was declined by

[35] Report of Dr Ian MAHONEY, 05/08/11, p 1.
[36] Ibid p 2.

Coroner Hennessey, in the absence of any further material requiring her consideration.

[60] Appropriately the family then commissioned a report from Dr John Vinen, Emergency Physician. Dr Vinen, a respected physician, provided a report dated 9 March 2012, wherein he provided an opinion as to the cause of Mrs Loveday's death[37]:

> 'Given:
>
> (a) Mrs Loveday's history of anaphylaxis to penicillin;
> (b) the temporal relationship between the administration of the ampicillin and her deterioration requiring resuscitation;
> (c) the documentation in relation to the causation of her deterioration by a number of practitioners,
>
> There can be no doubt that her sudden deterioration and subsequent events [including her death to a large extent] were due to the administration of an antibiotic to which she was allergic to [sic] resulting in an anaphylactoid [anaphylactic] reaction.'

[61] By letter dated 2 April 2012 a copy of this report was provided to the State Coroner with a request that an inquest be held.

[62] By letter of 4 May 2012, the State Coroner advised the solicitors for the family that, having regard to the conflicting medical evidence:

> 1. The investigation had been re-opened and was to be detailed to another coroner[38]; and
> 2. It was in the public interest for the investigation to proceed to inquest.

[63] Accordingly further investigations occurred, and then an inquest was held on the 9 and 10 September 2013.

Coroners Act s. 45(2) Findings

[64] As set out earlier my first task is to make findings in accordance with section 45(2) of the Coroners Act.

[65] Section 45(2) states:

> A coroner who is investigating a death or suspected death must, if possible, find-
> (a) who the deceased person is; and
> (b) how the person died; and
> (c) when the person died; and

[37] Report of Dr John VINEN, pp 5-6.
[38] Assigning the case to another coroner is the ordinary process

(d) where the person died, and in particular whether the person died in Queensland; and
(e) what caused the person to die.

[66] In this inquest there was no dispute, in fact there was agreement, as to who, where, and when, the deceased person died. The real issue is how, and what caused that person to die.

[67] Accordingly, pursuant to the Coroners Act s. 45(2)(a),(c) and (d), I make the following three findings:-

1. That the deceased person was Marcia Joy Loveday[39];
2. that Mrs Loveday died on 23 July 2010[40]; and
3. that Mrs Loveday died at the Bundaberg Base Hospital, Bundaberg, Queensland[41].

[68] The determinations to satisfy the Coroners Act s. 45(2)(b) and (e) findings are more problematic. They require resolution of differences of opinion between medically qualified personnel.

[69] A consideration of the observations of Mrs Loveday immediately following the administering of the Ampicillin, what happened in the ensuring few days until her passing, the observations made at the autopsy, together with the expert evidence of these issues, is crucial to determining the essential issues of:-

a. 'Did Mrs Loveday suffer (i) anaphylaxis, or (ii) an anaphylactoid reaction, or (iii) anaphylactic shock, shortly after the intravenous administration of Ampicillin on the morning of 19 July 2010?'[42],

which if answered affirmatively, leads to the further question of :-

b. 'Did Mrs Loveday's reaction to the administration of intravenous penicillin on 19 July 2010 cause her cardiac arrest, from which she was resuscitated, in the Emergency Department at Bundaberg Hospital on the morning of 19 July 2010?[43]',

and thirdly:-

c. 'Is it possible that the cardiac arrest suffered by Mrs Loveday in the Emergency Department on the morning of 19 July 2010 may have hastened or accelerated her death on 23 July 2010?'[44]

[39] Positive identification occurred on 23 July 2010 at 9.04pm, through personal identification by Mrs N.J. Curd, Mrs Loveday's daughter (see QPS Form 1) exhibit A1
[40] See Bundaberg Hospital "Life Extinct Form", dated 23 July 2010, exhibit A2
[41] Ibid, exhibit A2
[42] Inquest Issue No. 4
[43] Inquest Issue No. 5
[44] Inquest Issue No. 8

[70] Accordingly the first question is:-

a. 'Did Mrs Loveday suffer (i) anaphylaxis, or (ii) an anaphylactoid[45], reaction, or (iii) anaphylactic shock, shortly after the intravenous administration of Ampicillin on the morning of 19th July 2010?'

[71] Anaphylaxis is used to describe both IgE, immune-medicated reactions and non-allergic, non-immunologically triggered events[46]. It has been described as representing:-

> '… the most catastrophic of the immediate type generalised hypersensitivity reactions. Anaphylaxis following exposure to a trigger presents in a dynamic continuum from mild to severe, gradual in onset to fulminant, and may involve multiple organ systems or cause isolated shock or wheeze. It presents unheralded in otherwise healthy people, and mandates prompt clinical diagnosis based on pattern recognition and probability, in the absence of any immediate confirmatory test. It remains the quintessential medical emergency, that clinicians and other health care workers both pre and in-hospital must be familiar with, as urgent treatment averts death from hypoxia or hypotension[47].'

[72] There appears to be no international agreement on the precise definition of anaphylaxis and there is reported, also, no prospectively validated grading system to link the clinical features of anaphylaxis with its severity, urgency, treatment, or outcome[48]. What is common, amongst the medical personnel who gave evidence before me, was that the quicker the patient's reaction, the more likely the patient has a greater sensitivity to the trigger/s causing the anaphylaxis.

[73] Dr A Brown, who gave evidence has included, in his most helpful paper (which was exhibit E4.5), that penicillin is the most common cause of drug induced anaphylaxis. Around 1:500 patient courses have an apparent allergic reaction[49].

[74] Dr Vinen's research is that 12.7% of patients admitted to Australian hospitals reported an allergy to penicillin, with 0.7 to 10% of the population suffering some kind of adverse reaction to penicillin. He advised that between 0.0004% and 0.15% of penicillin courses administered result in immediate anaphylactic reactions[50].

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[45] Anaphylactoid reactions are immediate systemic reactions which mimic anaphylaxis but do not involve IgE mediated immune response (see Dr Vinen's report at page 3, exhibit E3)
[46] Current Management of anaphylaxis, Brown, AFT, at page 213, exhibit E4.5
[47] exhibit E4.5 'Current Management of anaphylaxis', Brown, AFT, at page 213,
[48] Ibid, p 214
[49] Ibid p 215
[50] Dr Vinen's Report dated 9 March 2012 at page 1

[75] Accordingly, a possible anaphylaxis type reaction to penicillin medication is not a completely unusual event, based on both experts' figures.

[76] The observations of the Bundaberg Hospital medical personnel of Mrs Loveday's presentation before administration of IV penicillin was that she was experiencing difficulties with breathing[51], sitting bolt upright on the trolley[52], oxygen was being administered by mask[53], her eyes were open[54], she was only able to speak in very short phrases or single words[55], and was in marked respiratory distress[56].

[77] The diagnosis made by Dr Power was that Mrs Loveday had an effective exacerbation of chronic obstructive pulmonary disease (COPD). She may also have been septic, suspected because of her hypotensive state[57]. No criticism[58] is made of this diagnosis by any medical expert and, in view of the then available information, was appropriate.

[78] Dr Power then commenced standard treatment for COPD. He advised that Mrs Loveday did not respond to the initial treatment and that a chest x-ray demonstrated a right lower lobe consolidation (likely right lower pneumonia[59]). Dr Power says that pursuant to current therapeutic guidelines, Mrs Loveday was administered antibiotics including IV Ampicillin. He readily admits that 'antibiotics do not make an immediate difference to a patient's condition, but it is important they are given as soon as possible[60]'. At this time Mrs Loveday's *MedicAlert* bracelet was not noticed and, significantly, Dr Power stated that 'No hospital records were available for Mrs Loveday as she had not been to the Bundaberg Hospital'[61]. That particular assertion is, of cause, incorrect[62]. In his evidence at the inquest he sought to qualify this 'absolute' statement to an assertion that her records where not readily available as she had not been to the Bundaberg Hospital for some time.

[79] Following administration of the IV Ampicillin Mrs Loveday was observed, within minutes, by RN Sitoman, to suffer a rapid

[51] See statement of RN Blunt exhibit F2,
[52] See statements of Dr Power exhibit F4, RN Sitoman exhibit F3, RN Blunt exhibit F2
[53] See statements of RN Blunt exhibit F2 and RN Sitoman exhibit F3
[54] See statements of RN Sitoman exhibit F3, RN Blunt exhibit F2, and Dr Power exhibit F4
[55] See statements of RN Blunt exhibit F2, RN Sitoman exhibit F3, and Dr Power exhibit F4
[56] See statements of RN Sitoman exhibit F3 and Dr Power exhibit F4
[57] See statement of Dr Power exhibit F4 at para 17
[58] See Dr Vinen's and Dr Brown's reports
[59] This is stated in the typewritten hospital notes (although no handwritten notes of this were produced)
[60] See statement of Dr Power exhibit F4
[61] See Dr Powers statement at para 13, restated in paragraph [32] above of these Findings
[62] Mrs Loveday was in fact a frequent patient over many years, see footnote 1

deterioration in her condition and suffer a cardiac arrest[63]. Significantly the deterioration was rapid and occurred within minutes.

[80] The clinical observations by Dr Power and Dr Yousif were that Mrs Loveday could have suffered an anaphylactic reaction but they opined that there was no clinical evidence of this. Dr Power's observations are stated as[64]:-

> 24. Both Dr Youssiff and myself immediately attended Mrs Loveday. She was clearly agitated and her respiratory effort had increased.
> 25. I considered the possibility of an anaphylactic reaction, however there was no clinical evidence of such. She had no rash and no mucosal oedema. Intramuscular (IMI) Adrenalin was given and Mrs Loveday prepared for intubation.
> 26. Mrs Loveday then went into asystolic cardiac arrest.
> 27. Advanced Life Support (ALS) was initiated including CPR with IV Adrenalin. An Endotracheal tube (ETT) was placed. After two to three minutes of CPR and only one minute of Adrenalin, a return of spontaneous circulation (ROSC) was achieved. Mrs Loveday was ventilated in DEM and remained hypotensive despite successful resuscitation.
> 28. ICU was contacted. Dr Konopke, a Specialist from ICU immediately attended Mrs Loveday in DEM.
> **...**
> 31. When discussing the possibility of Mrs Loveday having suffered an anaphylaxis to Penicillin, Dr Youssiff informed me that he had encountered no difficulties at all with airway swelling, *ie* angio-oedema (as you would expect in someone with an anaphylaxis). Mrs Loveday had a Grade 1 larynx and was very easy to intubate.
> 32. Dr Youssiff, the ICU consultant and myself discussed whether Mrs Loveday's collapse had been caused by a cardiac event or her rapidly deteriorating COPD. Irrespective of the cause, Mrs Loveday's cardio-respiratory collapse was treated pursuant to the criteria.'

Dr Yousif's observations were stated as[65]:-

> '14. On my arrival, I recall that Mrs Loveday was unresponsive;
> 15. There was no respiratory effort from Mrs Loveday. I recall the staff performing CPR.
> 16. I understand that as soon as the allergy bracelet was identified, Dr Power ordered Adrenalin 0.5mg to be given intramuscularly (IM), thinking the collapse might be caused by an anaphylaxis.

[63] Statement RN Sitoman, exhibit F3 at para 20
[64] Exhibit F4
[65] Exhibit F5

17. I immediately attended Mrs Loveday's airway, by inserting an endotracheal tube (ETT). There was absolutely no response from Mrs Loveday.
18. I expected that if Mrs Loveday had collapsed due to anaphylaxis, there would be signs of anaphylaxis. I encountered no signs of anaphylaxis in that:
    (a) The ET tube was inserted easily. Mrs Loveday had a Grade 1 (easiest) larynx;
    (b) no tachycardia;
    (c) no rash;
    (d) no angiooedema; and
    (e) no bronchospasm.
19. I have never seen anyone suffer a severe anaphylaxis causing collapse yet have no associated effects.
20. Accordingly, I am of the view that Mrs Loveday's deterioration and collapse were caused by her disease process.
21. Mrs Loveday's Troponin 'i' was elevated indicating cardiac involvement. She lost consciousness because of her deteriorating clinical condition including end stage respiratory failure. This in turn caused strain on her heart and she suffered Myocardial Infarction.

[81] Dr Brown was specifically asked to comment on these clinical observations and whether an anaphylaxis, or anaphylactoid, reaction could have occurred.

[82] Dr Brown's expert opinion was that Mrs Loveday did then suffer from an anaphylaxis, manifesting as anaphylactic shock, shortly after the intravenous Ampicillin injection. His view was supported by the fact that the collapse followed within minutes, and that sudden cardiovascular collapse within minutes of receiving an intravenous drug to which a patient is allergic is a typical time course in response for an acute anaphylactic reaction. He stated that anaphylaxis can manifest as sudden cardiovascular collapse alone, without associated cutaneous alerting features such as rash or oedema. He stated that this is because cutaneous alerting features may be absent in 10% to 20% of cases of anaphylaxis. In addition laryngeal and facial oedema may also be absent in 30% or more of cases of anaphylaxis. Dr Brown said that contrary to Dr Power's comment the absence of rash and muscular oedema is not against a diagnosis of anaphylaxis[66]. Dr Brown also considered Dr Yousif's comments of the absence of rash, angioedema, bronchospasm, tachycardia and collapse alone is again not against a diagnosis of anaphylaxis[67]. Dr Vinen was of the same opinion. Dr Mahoney did not question Dr Brown's expert opinion. I accept Dr Brown's opinion on this issue. Accordingly, I find that Mrs Loveday did suffer an anaphylaxis.

[66] Clearly the 'absence' of cutaneous features is an issue for education of medical personnel, and I comment on this later in my Findings
[67] Exhibit E4 at paragraphs 4 – 4ix/

[83] Accordingly the second question must now be considered:-

b. "Did Mrs Loveday's reaction to the administration of intravenous penicillin on 19th July 2010 cause her cardiac arrest, from which she was resuscitated, in the Emergency Department at Bundaberg Hospital on the morning of 19th July 2010?"

[84] The expert opinion of Dr Brown was that Mrs Loveday's reaction to the injection of IV Ampicillin did directly cause a cardiac arrest just minutes later. He described the clinical observations as 'a typical contemporaneous response to the intravenous exposure to an agent to which a patient is known to be allergic[68]' significantly he described[69] that:-

a. it is likely that Mrs Loveday was suffering from an acute respiratory illness on her admission to the ED on the morning of 19 July 2010, as manifested by history of lung disease, recent breathlessness and phlegm production. It is also likely that Mrs Loveday was in addition suffering from an acute cardiac event, as manifested by chest pain responsive to glyceryl trinitrate GTN, breathlessness with a preference to sit upright, and sweating.
b. In the light of these two potential presenting complaints, and the respiratory infection caused her cardiorespiratory arrest, I would have expected this to have been preceded by a fall in oxygen saturations, and or inability to breathe with respiratory distress prior to the sudden cardiac arrest with asystole. These did not occur.
c. Likewise, had there been a cardiac cause for the cardiorespiratory arrest, I would have expected this to have been preceded by a sudden cardiac arrhythmia such as ventricular tachycardia (VT) or ventricular fibrillation (VF), which would have been visible on the ECG monitor. This also did not happen.
d. In addition, I note the serum tryptase level results taken at 4:54 PM on 19 July (level 1.5 at 6 hours and 11 minutes post-collapse); at 4.00pm on 20 July (level 1.8 at 29 hours and 17 minutes post-collapse); at 5.00am on 23 July (level 2.0 at Day 4 post-collapse) and at post mortem (level 9.1 on Day 5 post-death). Although these are all below the upper limit of normal at 11.4 – 13.5 ng/mL, contrary to Dr Konopka's comment the absence of a rise in serum tryptase levels does not exclude a diagnosis of anaphylaxis. This is an incorrect assertion. I say this because:-
e. A mast cell tryptase level may not be elevated following anaphylaxis if it is taken too late. One recommended interval to take a mast cell tryptase level is at 15 minutes to 3 hours after

[68] Ibid at 5i/
[69] Exhibit E4 at paragraphs 5iv – 5vi inclusive

onset of the suspected anaphylactic reaction. An alternate recommendation to when to take a tryptase level is as soon as feasible, at 1-2 hours after symptom onset and at 24 hours or in convalescence.

f. Therefore, as the first mast cell tryptase sample was taken at 6 hours and 11 minutes, it may simply have missed any rise. This would relate to tryptase's short half-life of 2 hours, meaning that the level may have already fallen back to normal.
g. In addition, the serum tryptase level may simply not rise at all following anaphylaxis. Therefore a mast cell tryptase level cannot be used to exclude anaphylaxis if it is normal.
h. Whilst it is true that the absence of a rise in serum tryptase is thought to be more common following food anaphylaxis, and or when shock is absent, this still does not preclude a likely diagnosis of anaphylaxis in Mrs Loveday's case.

[85] Dr Vinen's views on this issue were very succinctly covered in his report, where he agreed that Mrs Loveday had an anaphylactoid reaction to the penicillin[70]. Dr Vinen expressed in his evidence at the inquest, that the opinion and conclusions of Dr Brown on this issue were agreed by him.

[86] Accordingly I find, in accordance with the opinion of Dr Brown, confirmed by Dr Vinen, that the administration of IV penicillin on 19 July 2010 did cause Mrs Loveday to suffer cardiac arrest.

[87] Therefore the third question to consider is:-

c. "Is it possible that the cardiac arrest suffered by Mrs Loveday in the Emergency Department on the morning of 19th July 2010 may have hastened or accelerated her death on 23rd July 2010?"

[88] Dr Brown's view was clear that Mrs Loveday would almost certainly have died in hospital following her admission on 19 July from her cardiorespiratory failure, and gangrenous gall bladder causing septicaemia, irrespective of whether she suffered from an acute anaphylactic reaction. This was even if Mrs Loveday then had an operation to remove her gall bladder, because she would still have developed irreversible multiple organ failure with cardiorespiratory and renal failure. He was unable to determine the precise effect the anaphylactic shock had, but in his view it was clear that Mrs Loveday would not have survived to leave hospital even if she had not suffered an acute episode of anaphylaxis[71]. He considered that with the prompt intervention by Dr Power and the administration of intra-muscular adrenaline and other treatment steps taken, the effect of the anaphylaxis had in fact passed, and Mrs Loveday then succumbed a

[70] Exhibit E3 at page 6, question 2
[71] Exhibit E4 at page 6, para 8viii

few days later to her combination of other serious conditions. She was, in his words, 'a very sick woman' when she first presented to the emergency department on the Monday morning.

[89] Dr Vinen was not so convinced. He considered that with early surgical intervention Mrs Loveday had a chance of survival, although he conceded her chances were very limited. Dr Brown considered that even with surgical intervention, Mrs Loveday was most unlikely to have survived[72].

[90] Whilst respecting Dr Vinen's opinion I was impressed by Dr Brown on this issue.

[91] Accordingly I find that whilst the cardiac arrest was suffered by Mrs Loveday, the effect of it did not hasten or accelerate her death on 23 July 2010.

[92] The next question to consider is:-

6. Was Mrs Loveday's medical treatment in the Bundaberg Hospital from the time of her cardiac arrest on the morning of 19 July 2010 until her death in the hospital on 23 July 2010 in accordance with best practice, having regard to all the circumstances?

[93] I will not restate what I have set out earlier, but it is clear that in the independent expert opinions of Dr Brown and Dr Vinen that Mrs Loveday's medical treatment in the Bundaberg Hospital, from the time of her cardiac arrest until her death in the hospital, was in accordance with best practice and cannot be criticised[73].

[94] It was also the observation of both experts that her treatment from the time of admission was appropriate except, of course, the administration to her of the IV Ampicillin (and why this occurred)[74].

[95] The next question to consider is:-

7. Why Mrs Loveday's *MedicAlert*® bracelet was not observed and recognised prior to the intravenous administration to her of Ampicillin on the morning of 19th July 2010?

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[72] Exhibit E4 at 8i

[73] it is clear that Dr Vinen and Dr Brown excluded from the assessment of 'appropriate care' the failure by both Dr Power and RN Sitoman to establish the patient's allergy status prior to prescription and administration, of the ampicillan

[74] I note Dr Vinen also felt there was a failure to identify the Medicalert bracelet, and this is intrinsically bound up in the failure to establish the patient's allergy status either through the hospitals medical records, the ambulance personnel, or the patient herself who presented with a GCS of 15

[96] I have set my observations of the design and appearance of the *MedicAlert* bracelet in paragraphs [22] – [25], inclusive, above.

[97] The bracelet, to my mind, does not have any standout or striking feature to immediately draw a persons attention to it as a device to warn of the wearers' medical allergies. Rather it resembles an item of jewellery. To my mind this is a deficient feature of the bracelet for which its' design appears to place fashion above function.

[98] What is clear from the evidence of Dr Power is that the *MedicAlert* bracelet was never noticed at all whilst Mrs Loveday was at the hospital prior to the administration of the Ampicillin. Quite alarmingly the ambulance officer, who spent approximately one hour with Mrs Loveday, never noticed it either. There was no suggestion that the bracelet was in any way obscured from view by clothing. It was only after Mrs Loveday began to show signs of an anaphylactic reaction did R.N. Sitoman notice the bracelet.

[99] The conclusion I draw from the evidence is that whilst Dr Power failed to diligently observe the *MedicAlert* bracelet, he most likely mistook it for an item of jewellery. The bracelet in its design needs to have as its purpose, its focus on being a method of 'alert' (its primary focus), rather than as a fashion accessory. Concerning to me was the evidence given by the very experienced emergency department practitioner, Dr AFT Brown[75], that when he asked young interns or nursing staff at the hospital[76] where he practises if they knew what a *MedicAlert* bracelet or jewellery was, that they did not recognise these items, nor did they routinely search for them.

[100] I will comment further on this in my section 46 Recommendations.

[101] The next question is:-

3. Why Mrs Loveday's existing hospital file was not delivered to the Emergency Department at Bundaberg Base Hospital prior to the administration to her of Ampicillin?

[102] Mrs Loveday was a person who was cautious about her medical treatment. She was a frequent patient[77] of the Bundaberg base Hospital, as her records showed. Dr Power is simply incorrect to say 'No hospital records were available as she had not been to the

[75] Dr Brown practices regularly in the Accident & Emergency Department at the Royal Brisbane & Women's Hospital, Brisbane. This, in addition to his published papers on anaphylaxis, gives him exposure to the current "cut and thrust" of an emergency department at a very large hospital

[76] Dr AFT Brown is a Senior Staff Specialist, Department of Emergency Medicine, Royal Brisbane and Women's Hospital (RBWH), Brisbane, Qld.

[77] Refer to footnote numbered 1 above

Bundaberg Hospital'[78] or 'not been to hospital for quite some time' as he stated in evidence at the inquest[79].

[103] Her hospital records were clearly marked for her allergies on the cover. I think it important to observe that these hospital records need merely to have been with the patient for any clinician to see the alert sticker on the outside of the records/hospital file. The clinician need not have even commenced to read the file to have known that the patient had an allergy status. Any clinician would then know to establish what her then current allergy status was. Mrs Loveday was conscious (she had a GCS of 15), and able to talk in 'short phrases' or even nod or shake her head to questions. I am sure she could have pointed to her wrist, or raised it, to display her bracelet. She could have readily advised of her allergies in a number of ways, if only the enquiry was made of her.

[104] When Mrs Loveday was admitted to the hospital she was triaged as a category 2 patient. This meant that she was required to be seen, or clinically attended to by medical personnel, within 10 minutes. Certainly her treatment commenced within that time period. There is no criticism by any expert of the timeframe within which treatment commenced. There was no valid criticism of RN Blunt's triaging of Mrs Loveday as a category 2 patient[80].

[105] Mrs Loveday's hospital records were held in a storage area approximately 175 metres from the Emergency Department. This was due to her not attending the hospital recently. The process for recovering these patient records is categorised on a number of codes depending upon urgency. They are numbered (1) – (4), with '1' being the most urgent code.

[106] Mrs Loveday records were requested as a code 2 whish aligns to her triage assessment. The administration officer should have requested those files with the appropriate urgency of code 2, which would have meant those files were delivered within ten minutes to the Emergency Department. That simply did not occur, and there was no reasonable explanation given to me as to why it did not occur. At the inquest I did not have available to me sufficient evidence to identify why on this occasion the system failed, other than to note that the system did fail.

[107] At this time it is useful to examine the Bundaberg Base Hospital triage system as at 2010.

[108] A statement was provided by Angela Dingle[81] who is employed by the hospital in the position of Acting Business Practices Improvement Officer.

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[78] Exhibit F4 at para 13
[79] Inquest evidence recorded at 2.18pm
[80] Dr Vinen thought that Mrs Loveday may have been a category 1, but accepted category 2 would also be appropriate
[81] Exhibit F18

[109] Ms Dingle described[82] how the hospital uses a patient administration system known as 'Hospital Based Corporate Information System' (termed HBCIS). The salient features of this system, for the purposes of this inquest, are that it:-

a. is operated by an administration officer,
b. who worked nearby, but not next to the triage nurse,
c. it produced an alert flag (i.e. the flag signifying or referring to any adverse drug reactions, allergies, infection control or a social alert)
d. but there was no obligation upon noting the alert flag to inform the triage nurse nor include this in any of the then created paperwork to alert clinicians who may later be treating that patient[83].

[110] I see this as an alarming deficiency in work practice. I was informed[84] by the Senior Administration Officer in the Department of Emergency Medicine at the hospital, Ms Nicole Reid, that the triaging system has now been very significantly altered with the relocation of the triage area now in the Department of Emergency Medicine.

[111] Ms Read admitted in her evidence that in the old Department of Emergency Medicine that some of the triage took place in a separate area to where the administration officer was located, but that now the physical layout of the new Department of Emergency Medicine differs in that the triage nurse station and the administration officer are in a location together. Now the administration officer can hear the triage taking place.

[112] More importantly, and to my mind most importantly, I am now advised that when an alert flag is raised for a patient the administration officer has a positive obligation to print that out, and attach it to, the other paperwork then generated for that patient. They ensure this is given to the triage nurse to be forwarded with the patient. The important factors to draw from this are that there is now:-

a. a changed system,
b. a positive obligation on the administration officer to act when they see an 'alert flag' for a patient, and
c. that a printed copy is attached with the other paperwork which the triage nurse will then forward through with the patient so that the treating clinicians will see when they review the admission notes.

[113] I comment further on this issue in Coroners Comments below.

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[82] Exhibit F18 at paragraph 4
[83] Exhibit F20 at paragraph 15
[84] Exhibit F20

List of Inquest Issues - Answers

Coroners Act s. 45(2): 'Findings'

[114] Dealing with the list of issues for this inquest the findings are as follows:-

[115] ***Issue 1.*** My primary task is the information required by section 45(2) of the *Coroners Act 2003*, namely:

a. Who the deceased person is – Marcia Joy Loveday[85],
b. How the person died – Mrs Loveday died due to multi-organ failure, overlaid by an episode of an anaphylaxis reaction of which the effects had passed, leading to her death four days later[86],
c. When the person died – 23 July 2010[87],
d. Where the person died – Bundaberg Base Hospital, Bundaberg, Queensland[88], and
e. what caused the person to die – Cardio-Renal Failure, Gangrene of Calculous Gall bladder, and the Significant underlying conditions of hypertensive and ischemic heart disease, diabetes mellitus, and anaphylaxis reaction[89]

[116] I specifically find that the Form 30 Autopsy Certificate[90] at item 2 – 'Other Significant Conditions' which says 'possible anaphylactoid reaction', should be corrected to 'anaphylaxis reaction[91]'. Both medical experts agreed that this was the correct position as to her actual cause of death. Accordingly pursuant to section 97 Coroners Act 2003 I shall notify, in writing, the Registrar of Births, Deaths and Marriages of this inquest's findings and the Registrar shall, in turn, correct the register of the Death Certificate[92].

[117] ***Issue 2***. Why Mrs Loveday's *MedicAlert*® bracelet was not observed and recognised prior to the intravenous administration to her of Ampicillin on the morning of 19th July 2010?

[118] I have set out my relevant observations and analysis on this issue at paragraphs [22] – [25] and [95] – [100] above. Accordingly in the circumstances I find that the medical personnel simply did not look for,

[85] See exhibit A1 QPS Form 1
[86] Incidentally the Life Extinct Form refers to it as being a 'Death in care', where it is properly a "Death was healthcare related" categorisation
[87] See exhibit A2 Life Extinct Form
[88] See exhibit A2 Life Extinct Form
[89] See exhibit A3, Form 3 Autopsy Certificate
[90] Exhibit A3
[91] Dr Brown's evidence confirmed this issue
[92] See Births, Deaths and Marriages Act s.42(1)(d)

nor recognise, the *MedicAlert* brand bracelet prior to the administration of the Ampicillin injection, because they failed to recognise it as a medical identification product.

[119] ***Issue 3***. Why Mrs Loveday's existing hospital file was not delivered to the Emergency Department at Bundaberg Base Hospital prior to the administration to her of Ampicillin?

[120] I have set out my relevant observations and analysis on this issue at paragraphs [101] – [113] above. Accordingly, in the circumstances, I find that there is insufficient evidence available to me to know definitively of why Mrs Loveday's existing hospital file was not delivered prior to the Emergency Department prior to the administration to her of IV Ampicillin, other than to note that was not delivered in accordance with the urgency code it was allegedly assigned.

[121] ***Issue 4.*** Did Mrs Loveday suffer (i) anaphylaxis, or (ii) an anaphylactoid reaction, or (iii) anaphylactic shock, shortly after the intravenous administration of Ampicillin on the morning of 19th July 2010?

[122] I have set out my relevant observations and analysis on this issue at paragraphs [70] – [82] above. Accordingly, in the circumstances, I find that Mrs Loveday did suffer an anaphylaxis shortly after the administration to her of the IV Ampicillin.

[123] ***Issue 5***. Did Mrs Loveday's reaction to the administration of intravenous penicillin on 19th July 2010 cause her cardiac arrest, from which she was resuscitated, in the Emergency Department at Bundaberg Hospital on the morning of 19th July 2010?

[124] I have setout my relevant observations and analysis on this issue at paragraphs [83] – [86] above. Accordingly, in the circumstances, I find that Mrs Loveday did suffer a cardiac arrest as a reaction to the administration of IV Ampicillin to her, but she was successfully resuscitated from that cardiac event.

[125] ***Issue 6***. Was Mrs Loveday's medical treatment in the Bundaberg Hospital from the time of her cardiac arrest on the morning of 19th July 2010 until her death in the Hospital on 23rd July 2010 in accordance with best practice, having regard to all the circumstances?

[126] I have set out my relevant observations and analysis on this issue at paragraphs [92] – [94] above. Accordingly, in the circumstances, I find that Mrs Loveday's medical treatment from the time of her cardiac arrest, until her death on 23 July 2010, was in accordance with best practice having regard to all the circumstances.

[127] ***Issue 7.*** What condition, or conditions, caused Mrs Loveday's death on 23rd July 2010?

[128] I have set out my relevant observations and analysis on this issue at paragraph [115] above. Accordingly, in the circumstances, I find that the conditions which cause Mrs Loveday death on 23 July 2010 were cardio-renal failure, gangrene of calculous gall bladder, and the significant underlying conditions of hypertensive and ischemic heart disease, diabetes mellitus, and anaphylaxis reaction.

[129] ***Issue 8***. Is it possible that the cardiac arrest suffered by Mrs Loveday in the Emergency Department on the morning of 19 July 2010 may have hastened or accelerated her death on 23 July 2010?

[130] I have set out my relevant observations and analysis on this issue at paragraphs [87] – [91] above. Accordingly, in the circumstances, I find that the cardiac arrest suffered by Mrs Loveday in the Emergency Department on the morning of 19 July 2010 did not hasten, or accelerate, her death on 23 July 2010, and that the effects of the cardiac arrest had entirely passed as at 23 July 2010.

Coroners Act s. 46: 'Coroners Comments' (Recommendations)

[131] This incident does provide the opportunity to recommend important improvements aimed at reducing the risk to patients in similar situations.

Medical identification products

[132] Medical identification products, such as a *MedicAlert*® brand bracelets, are represented as providing personal medical information in the case of emergencies, specifically where the wearer can not advise the attending medical professional of their condition, such as for allergies.

[133] It was very clear to me at the inquest that medical identification products, such as *MedicAlert* bracelets, have very little 'recognition factor' by persons within the medical fields. The lack of recognition factor appears to be 'across-the-board' from nursing staff through to practising doctors. On the evidence of Dr AFT Brown it did not matter if the clinician was a first-year intern or a very experienced medical emergency practitioner. It was suggested in information from the Chief Executive Officer of the Australian MedicAlert Foundation that perhaps this comes from the variety of medical identification products that are now available, and the lack of standardisation[93], as they operate in a totally unregulated market.

[134] After viewing the *MedicAlert* bracelet that Mrs Loveday was wearing at the time of her admission to hospital I can understand why such a bracelet was not immediately recognised by busy medical personnel. Mrs Loveday's bracelet resembled a piece of well worn jewellery. Apart from the engraving on it there was no distinctive feature of its appearance.

[93] See exhibit H1 annexure 'A'

[135] Counsel Assisting at the inquest tended a number of photographs[94] of other examples of *MedicAlert*® branded bracelets. I comment on one design in particular because it highlighted an issue to me. The item is of a bracelet design which, in my opinion, appears akin to a piece of costume jewellery[95] as the bracelet itself had lilac[96] coloured baubles[97] making up the 'links' of the bracelet, with a plain, gold coloured, tapered, metal plate where the important medical information was recorded for allergies or the like. What struck me about this item of medical identification product, as did Mrs Loveday's, was that, very regrettably, fashion has overtaken function in the design of the item. I am very firmly of the opinion that function is the sole objective if this item is to perform its intended task. Fashion must only ever represent a very small element in the overall consideration of its design.

[136] I was advised at the inquest that these items can be purchased 'just about anywhere', including over the internet, so there is very little utility in legislative regulation of this area. Instead it will rely upon the individual deciding that they prefer 'function' over 'fashion' in protecting the interests of the end user. Manufacturers, retailers, and promoters, of these items need to also adopt that approach. At the inquest I mentioned that I also knew, through media coverage[98] which would be known widely and which I feel I can take judicial notice of, that there is now an increasing number of people having these items (or warnings) tattooed on themselves. This may simply increase the difficulty for medical personnel in quickly recognising that the tattoo is for a medical status, such as allergy, rather than simply a "decorative[99]" tattoo. No photographic examples of these tattoos were provided at the inquest so I cannot comment further other than say that they would be of very little utility for the purpose for which they are intended.

[137] Clearly manufacturers, retailers, and promoters of medical identification products should only make available those items which distinctly place function over fashion, and which bear a distinct and readily recognised medical symbol. It seems the Rod of Asclepius is not broadly recognised, even by medical personnel[100], which very much surprised me. Certainly a well recognised medical symbol is the red cross, on white background, being the international symbol of the Red Cross Society, but of course its' use would require the Red Cross Society to allow their symbol to be licensed for any product. At the very least for the brand 'MedicAlert' their bracelet needs to have as its' most prominent

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[94] See exhibit G7

[95] and I mean no disrespect to the designers or retailers of this item, rather I am using it as an example of this design as against other designs available

[96] It may also be seen as lavender, but in any event it was a soft purple shade and I do not profess to be a colour consultant

[97] I do not profess to be completely au fait in the world of fashion jewellery but I think most people will be familiar with the term 'bauble', especially if they viewed the item

[98] And the CEO of Australian MedicAlert Foundation also commented on this in her affidavit, see exhibit H1

[99] If "decorative" is the correct term

[100] Refer to the evidence of Dr AFT Brown

feature the words ‘Medic’ or ‘Medical’ and ‘Alert’. These words would need to stand out very prominently on the bracelet, no doubt in a contrasting colour, and be in a durable finish[101] to ensure it does not become dull over time through use.

[138] In addition the medical profession needs to educate all medical personnel, particularly first response personnel, to look for these items, and to recognise the various styles they may be.

[139] I note that Queensland Health has already taken a step[102] in this regard, by issuing a Safety Bulletin[103] and displaying signage in the Resuscitation bays and Emergency departments. These were steps taken before the inquest occurred. That is most promising, and commendable, as it was in response to Mrs Loveday's death, rather than reactionary to the inquest outcome. Hopefully there will be continued promotion of this, perhaps through the issuing of warning bulletins at regular intervals to keep these issues uppermost in medical personnel’s minds. It is also advisable that the various medical schools take the small amount of time required to teach their students, at a time when they are commencing their practical work, of the styles of medical alert bracelet that are available, and to be vigilant to look for them.

[140] As Queensland Health has already taken steps to notify medical personnel I do not feel a recommendation is required in that regard, and I am sure that the various medical schools in Queensland could simply include this information in their curriculum, rather than it being required as a specific recommendation from this inquest.

[141] I do wish to make clear that I encourage the wearing of medical alert or medical identification products, as they do have benefits. It is their ‘recognition factor’, the seemingly endless design variety, and in some cases their ‘innocuous’ design features, that I focus on as requiring improvement.

[142] **Recommendation** - That manufacturers, retailers, and promoters of medical identification products only make available those items which:-

(i) distinctly place function over fashion in their design, and
(ii) bear a distinct and readily recognised medical symbol or wording depicting that it is a medical identification product,
(iii) all wording, identifying it as a medical identification product, needs to be very prominent on the bracelet, in a contrasting colour, and of a durable finish, so that it is a standout feature on the bracelet.

[101] Such as gloss enamel
[102] Se exhibit F1 which details the HEAPS (*Human Error and Patient Safety*) Review and the implementation of recommendations of that review
[103] Patient Safety Notices 01/2013 (dated 20.03.2013) and 07/2013 (dated 05.07.2013)

Education of Anaphylaxis

[143] The doctors who gave evidence before me were all experienced practitioners. What was evident is that even experienced practitioners were unaware that certain cutaneous features, usually associated with anaphylaxis, may not present in a patient even though they are suffering an anaphylactic reaction. It was only the very experienced, specialist, emergency department practitioners who were aware that anaphylaxis can readily occur without presentation of certain cutaneous features.

[144] Clearly, with the widespread nature of the occurrence of anaphylaxis, greater education of medical personnel would assist. Accordingly I recommend that Queensland Health and the Queensland Ambulance Service consult with the very experienced specialist doctors in this area, and prepare brief, and appropriate, educational material, to disseminate and educate their medical personnel, especially those who practise in the Accident and Emergency Department setting and as first response ambulance officers.

Patient Records, Triage and Emergency Departments, and 'Alert' wristbands

[145] The circumstances, as at 2010, of the physical layout of the triage area at the Bundaberg Base Hospital, the process of the administration officer in record retrieval, and the lack of positive obligation to notify of alert flags, was an extremely poor situation.

[146] I note that this situation has already been addressed by Queensland Health. A repetition of the same issue that occurred with Mrs Loveday should not now occur at the Bundaberg Base Hospital.

[147] Although that hospital has addressed their triage/record retrieval/alert flag issues, there may be a similar '2010 like situation' waiting to occur at any other hospital throughout Queensland. Accordingly I recommend the Queensland Health conduct an audit, within six months, of their hospitals to identify if any similar 'Bundaberg Base Hospital 2010 style triage situation' exists elsewhere. If it does Queensland Health will need to take appropriate action to implement the necessary changes of the type of changes seen in the Bundaberg Base Hospital situation.

[148] Queensland Health should also have a system of continual education, at regular intervals, by issuing their Patient Safety Notices regarding the types and styles of medical information products. Whilst I do not make this a formal recommendation of this inquest I do encourage Queensland Health to set an appropriate timeframe for education, or reminding, of all clinicians to be aware of, and look for, the various medical information products which may be worn by patients.

[149] Queensland Health should also continue the process of having signage, as it presently does, in all Accident and Emergency Departments, and Resuscitation bays regarding medical information products likely to be worn by patients.

[150] One issue which was only briefly canvassed at the inquest was whether first responder medical personnel, whether that be an ambulance officer or an Accident and Emergency Department triage nurse, should as soon as they establish the patient has a significant condition(s), such as a known allergy, that an 'alert' wristband be placed on the patient's wrist. Dr AFT Brown advised that it was a practice that he had seen utilised, by means of a red coloured alert wristband, and sighting of the wristband, which was sufficiently unusual in appearance being bright red and stating 'ALERT' on a patient, immediately caused a clinician to stop to realise that they must enquire as to what the particular alert related to. When I enquired at the inquest of the ambulance officer as to whether this practice could be done, they thought it was possible, but of course they had not had any opportunity to consider properly all the ramifications and practicalities of implementing such a procedure.

[151] The question I posed myself is whether such an alert wristband, if placed on Mrs Loveday by the ambulance officer, would have avoided her being administered the IV Ampicillin, when clearly her known allergies were not successfully passed 'along the chain', due to a breakdown in communication at the patient handover in the triage area, and even the three recorded allergy information did not pass from the triage nurse to the Emergency Department nurse due to the patient's paperwork not travelling with the patient.

[152] If Mrs Loveday had been wearing a red alert wristband then I consider that clearly the prescribing doctor, or nurse administering the medication, would very likely have seen the red alert wristband and stopped, before administering the medication, to enquire what of the red alert related to. I do not see how a simple red alert wristband could be a difficult, or expensive, system to be implemented.

[153] As I stated, I do not have enough information to make this a formal recommendation, but I do have enough information to make a recommendation that Queensland Health and the Queensland Ambulance Service consult, investigate, and, if appropriate, devise a policy to implement a wristband alert system along these lines.

[154] Accordingly, summarising my Coroners Comments or Recommendations, outlined above, they are as follows:-

1. That manufacturers, retailers, and promoters of medical identification products only make available those items which:-

    (i) distinctly place 'function' over 'fashion',
    (ii) bear a distinct and readily recognised medical symbol, or wording, depicting that it is a medical identification product, and

(iii) have all wording, identifying it as a medical identification product, as very prominent on the bracelet, in a contrasting colour, and of a durable finish, so that it is a 'standout' feature of the bracelet.

2. That Queensland Health and the Queensland Ambulance Service consult with the very experienced specialist doctors in this area, and prepare brief, and appropriate, educational material, to disseminate and educate their medical personnel, especially those who practise in the Accident and Emergency Department setting and as first response ambulance officers.

3. That Queensland Health conduct an audit, within six months, of their hospitals to identify if any similar 'Bundaberg Base Hospital 2010 style triage situation' exists elsewhere. If it does they will need to take appropriate action to implement the necessary changes of the type of changes seen in the Bundaberg Base Hospital situation.

4. That Queensland Health and the Queensland Ambulance Service consult, investigate, and, if appropriate, devise a policy to implement a wristband Alert system for patients who have significant medical conditions.

Coroners Act s. 48: 'Reporting Offences or Misconduct'

[155] The Coroners Act section 48 imposes an obligation to report offences or misconduct.

[156] At inquest Dr Kevin Power and RN Jeremy Sitoman both conceded that each should have independently ascertained Mrs Loveday's allergy status before prescribing[104] or administering[105] to her the IV Ampicillin medication.

[157] Both medical expert witnesses, Dr Vinen and Dr Brown, considered that the clinical staff's medical treatment was 'textbook', other than their failing to first obtain the patient's allergy status. Both experts agreed that there had been a failure in the required standard of practice by these two clinicians in this one regard[106]. It was obvious to me how very difficult it was for both Dr Power and RN Sitoman to admit their error, but they did so openly and readily. It was plain their error on this occasion has already caused them great distress and each have modified their practice[107].

[104] Prescribing in the case of Dr Power
[105] Administering in the case of RN Sitoman
[106] Although Dr Brown did comment that if he did not have the patient's allergy status that he would have, because of Mrs Loveday's parlous medical condition, prescribed and had administered penicillin 'but with some regret' as he termed it
[107] RN Blunt has also modified her practises and, most significantly, appropriately teaches this to her student nurses as she now is in a nurse education role

[158] Importantly it was not suggested, nor recommended, to me by any party at the inquest that any person or entity should be referred for investigation of an indictable, or other offence, or misconduct. This position that was adopted, especially by the next of kin of Mrs Loveday, must be very welcomed by Dr Power, RN Sitoman, and in her lesser role, RN Blunt. Whilst ultimately it is a decision for me to decide I agree with that position, that no person or organisation should be referred for further investigation. Understandably the family must finally have closure which this inquest brings.

[159] Accordingly, in this matter, I make no such referrals under section 48.

Magistrate O'Connell
Central Coroner
Mackay
28 October 2013