# OFFICE OF THE STATE CORONER

# FINDING OF INQUEST

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| CITATION: | **Inquest into the death of Kevin Edward FOGARTY** |
| TITLE OF COURT: | **Coroner's Court** |
| JURISDICTION: | Brisbane |
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| FINDINGS OF: | Mr Michael Barnes, State Coroner |
| **CATCHWORDS:** | **CORONERS: Inquest, melioidosis, community acquired pneumonia, work place exposure to tropical diseases, clinical support for rural and remote medical practitioners** |

**REPRESENTATION:**

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| Counsel Assisting: | Mr Sean Farrell |
| Family of Mr Fogarty: | Mr Gerard Cross (instructed by Quinn & Scattini Lawyers) |
| Queensland Health: | Mr Terence Gardiner (instructed by TressCox Lawyers) |
| Ms Angela Fogarty: | Mr Gavin Rebetzke (Roberts & Kane Solicitors) |
| Ergon Energy: | Mr Heinz Lepahe (Nicol Robinson Halletts Lawyers) |

**Findings of the inquest into the death of Kevin Edward FOGARTY**

The *Coroners Act 2003* provides in s45 that when an inquest is held, the coroner's written findings must be given to the family of the person who died, each of the persons or organisations granted leave to appear at the inquest and to various specified officials with responsibility for the health system. These are my finding in relation to the death of Kevin Edward Fogarty. They will be distributed in accordance with the requirements of the Act and posted on the web site of the Office of the State Coroner.

# Introduction

Kevin Fogarty was an apparently fit and healthy, hard working family man who was born and lived most of his life in the Winton area. In February 2005, when he was 37, he fell ill and was admitted to the Winton Hospital with a diagnosis of gastroenteritis. Two days later he died there in the presence of his family.

These findings seek to explain how that happened and make recommendations aimed at reducing the likelihood of deaths happening in similar circumstances in future.

# The Coroner's jurisdiction

Before turning to the evidence, I will say something about the nature of the coronial jurisdiction.

## *The basis of the jurisdiction*

Because Mr Fogarty's family were concerned about the adequacy of the health care he received and also initially had suspicions that he may have come into contact with arsenic during the course of his employment as a linesman, his death was reported to police and the local coroner pursuant to s7 and s8(3)(b) and (d) of the *Coroners Act 2003.*

## *The scope of a Coroner's inquiry and findings*

A coroner has jurisdiction to inquire into the cause and the circumstances of a reportable death. If possible he/she is required to find:-

- whether a death in fact happened
- the identity of the deceased;
- when, where and how the death occurred; and
- what caused the person to die.

There has been considerable litigation concerning the extent of a coroner's jurisdiction to inquire into the circumstances of a death. The authorities clearly establish that the scope of an inquest goes beyond merely establishing the medical cause of death but as that issue was not contentious in this case I need not seek to examine those authorities here. I will say something about the general nature of inquests however.

An inquest is not a trial between opposing parties but an inquiry into the death. In a leading English case it was described in this way:-

*It is an inquisitorial process, a process of investigation quite unlike a criminal trial where the prosecutor accuses and the accused defends… The function of an inquest is to seek out and record as many of the facts concerning the death as the public interest requires.* [1]

[1] *R v South London Coroner; ex parte Thompson* (1982) 126 S.J. 625

The focus is on discovering what happened, not on ascribing guilt, attributing blame or apportioning liability. The purpose is to inform the family and the public of how the death occurred with a view to reducing the likelihood of similar deaths. As a result, the Act authorises a coroner to make recommendations concerning public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in future.[2] However, a coroner must not include in findings or any comments or recommendations a statement that a person is or maybe guilty of an offence or civilly liable for something.[3]

### *The admissibility of evidence and the standard of proof*

Proceedings in a coroner's court are not bound by the rules of evidence because s37 of the Act provides that the court "*may inform itself in any way it considers appropriate."* That doesn't mean that any and every piece of information however unreliable will be admitted into evidence and acted upon. However, it does give a coroner greater scope to receive information that may not be admissible in other proceedings and to have regard to its provenance when determining what weight should be given to the information.

This flexibility has been explained as a consequence of an inquest being a fact-finding exercise rather than a means of apportioning guilt: an inquiry rather than a trial.[4]

A coroner should apply the civil standard of proof, namely the balance of probabilities, but the approach referred to as the *Briginshaw* sliding scale is applicable.[5] This means that the more significant the issue to be determined, the more serious an allegation or the more inherently unlikely an occurrence, the clearer and more persuasive the evidence needed for the trier of fact to be sufficiently satisfied that it has been proven to the civil standard.[6]

It is also clear that a coroner is obliged to comply with the rules of natural justice and to act judicially.[7]This means that no findings adverse to the interest of any party may be made without that party first being given a right to be heard in opposition to that finding. As *Annetts v McCann*[8] makes clear that includes being given an opportunity to make submissions against findings that might be damaging to the reputation of any individual or organisation.

## The investigation

As soon as local police became aware that Mr Fogarty had died they attended at the hospital, completed the necessary paper work and made arrangements for his body to be transported to Rockhampton for autopsy.

Thereafter they attended to the obtaining of statements from family members and arranged for hospital staff to provide statements via a firm of solicitors retained by Queensland Health. The medical records were secured. The family obtained an expert's report which was provided to police and included in their report to the coroner along with the autopsy report.

Medical deaths are difficult to investigate, especially for general duties officers with no specialist training. In this case however, I consider Sgt McDowall has gathered all of the relevant

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[2] s46
[3] s45(5) and 46(3)
[4] *R v South London Coroner; ex parte Thompson* per Lord Lane CJ, (1982) 126 S.J. 625
[5] *Anderson v Blashki* [1993] 2 VR 89 at 96 per Gobbo J
[6] Briginshaw v Briginshaw (1938) 60 CLR 336 at 361 per Sir Owen Dixon J
[7] *Harmsworth v State Coroner* [1989] VR 989 at 994 and see a useful discussion of the issue in Freckelton I., "Inquest Law" in *The inquest handbook*, Selby H., Federation Press, 1998 at 13
[8] (1990) 65 ALJR 167 at 168

information and presented it in an easily accessible format. He highlighted the family's concerns and drew attention to some troubling factors. He succinctly summarised the issues which needed clarification by way on an inquest. I commend him for his good work.

# The inquest

The matter was originally scheduled to come before the Emerald coroner but a clash in his diary made this problematic. I therefore agreed to assume responsibility for the matter. A directions hearing was convened on 7 February 2007 at which Mr Farrell was appointed counsel assisting and leave to appear was granted to Mr Fogarty's family, his employer Ergon Energy Ltd and Queensland Health.

An issues list was distributed and a tentative list of witnesses discussed. With the concurrence of Mr Fogarty's family it was agreed the hearing would be held in Brisbane. The matter was then adjourned for hearing over three days commencing on 20 March during which 56 exhibits were tendered and 16 witnesses gave evidence.

At the conclusion of the hearing I sought and received submissions from those granted leave to appear in relation to the issues on which I was obliged to make findings and any recommendations that could be made pursuant to s46. I was greatly assisted by those submissions and thank the legal representatives for them.

# The evidence

## *Social History*

Kevin Fogarty was born on 28 December 1968. When he was eighteen he formed a relationship with Helen whom he married in 1992.

They have two sons, Jason who was born in 1988 and Mitch who was born in 2000.

Kevin was part of a loving and supportive nuclear family and had frequent contact with his extended family, many of whom lived in and around Winton.

When Kevin left school he worked for the Winton Shire Council until he started an apprentice with Ergon Energy approximately three years before he died. He was still working for Ergon at the time of his death.

Mr Fogarty was mostly fit and healthy throughout his life having only minor injuries and illnesses that appear to have had no bearing on his death.

He was a moderately heavy smoker for most of his adult life and was also a moderately heavy drinker. For a few years before his death Mr Fogarty's wife estimates that he would drink approximately eight to ten cans of beer on most nights and occasionally more on the weekend. However she is adamant that he never missed work because of alcohol abuse and that he could stop drinking when he wanted as he demonstrated a year or so before his death when he had a bet on that subject with his sister.

## *The events leading up to the death*

On 9 February 2005 Mr Fogarty and a work mate, Gary Stoll, responded to a power outage on a rural property some two and a half hours drive north west of Winton. As they were on their way to the job a heavy downpour occurred. Ergon had issued all its outside workers, including Messrs Fogarty and Stoll with personal protective equipments consisting of long trousers, long sleeved shirt, a helmet, two types of gloves, boots, safety glasses, a rain proof jacket and water proof pants. Unfortunately on this day these workers did not have their wet weather gear with them because they had decided to use another vehicle for the call out and had forgotten to transfer it. They nonetheless carried on and attended to the work. When they completed that job they went to another call for service before returning to Winton at about 8:00pm.

Whilst attending to those two calls for service Mr Fogarty and his workmate became very wet. They almost certainly came into contact with mud created by the downpour. This would have happened when they were rolling out cable on the ground before installing it and when they were climbing and holding on to ladders.

Nonetheless on returning home, despite being wet and cold they had apparently suffered no lasting ill effects and both went to work the next day.

On 11 February 2005, Mr Fogarty and his family started a four day long weekend during which they travelled to Townsville to watch one of the boys play football. The court received no evidence as to what transpired during this time. However, there is nothing to indicate Mr Fogarty was exposed to anything that would explain the severe illness he succumbed to soon after.

Mr Fogarty recommenced work on Tuesday 15 February 2005. So far as I can tell this day was uneventful. However the next day he came home at lunchtime and was extremely unwell. He was suffering from diarrhoea, vomiting and a fever and had shallow rapid breathing. Mr Fogarty told his wife that he had severe chest pain.

His wife was so concerned that she rang the local hospital and the person she spoke to advised her to bring her husband straight to the hospital. However, he didn't want to go and instead stayed at home in bed.

## *Mr Fogarty consults Dr Lai*

The next morning Mr Fogarty was no better and so at about 9.00am he went to the surgery of the local general practitioner, Dr Eric Lai who was also the medical superintendent of the Winton Hospital. On examination Mr Fogarty was found to have a temperature 39.5 degrees, a blood pressure of 90/60 and a pulse of 120. His heart sounds were normal. His lung fields were clear with no crepitations or rhonchi and the air entry was judged to be normal and equal in both lungs. Abdominal examination was normal. Mr Fogarty reported a history of nausea, vomiting and diarrhoea for the past day. He also reported mild intermittent chest pain on deep inspiration which the doctor described in his notes "*chest pain – atypical. 1 day*".

Dr Lai said he formed the view that Mr Fogarty was dehydrated and should be admitted to hospital to have that attended to. He diagnosed Mr Fogarty as suffering from gastroenteritis. It is significant that although the symptoms mentioned above continued, Mr Fogarty wasn't coughing at this stage.

## *Mr Fogarty is admitted to hospital*

Mr Fogarty was examined by the registered nurse who admitted him to the hospital at 10.15 am. The general observation sheet records vital signs similar to those found by Dr Lai except his pulse rate had increased to 140bpm and oxygen saturation was found to be 96%[9].

An ECG was done which eliminated a cardiac cause for Mr Fogarty's chest pain and he was commenced on IV fluids to respond to his dehydration. Blood was taken for testing.

His wife says he seemed better when she visited him at lunchtime. Mrs Fogarty visited again after work and again after dinner. She says that on both occasions her husband seemed to be improving and indeed the general observations chart shows that his temperature did return to normal mid afternoon, but as night fell it retuned to 38.5 degrees and remained high through out the night.

Mr Fogarty also remained tachycardic. At midnight his blood pressure remained low at 95/65 his oxygen saturation was 96%.

In the early hours of the 18 February 2005 Mr Fogarty was still complaining of chest pain and another ECG was performed. It showed nothing of significance. In the nursing notes the chest pain is described as "*sharp nature*" and "*present on inspiration.*" It was also recorded that "*patient noticed to have dry cough, had been coughing up green sputum previous few days. Awaiting samples."*

Throughout the first twenty-four hours of his admission Mr Fogarty vomited a number of times and continued to smoke cigarettes occasionally.

Mr Fogarty was also noted to be "*shaky and flushed.*" This led the nurse making the observation to query whether he needed Valium for alcohol withdrawal symptoms.

Dr Lai saw Mr Fogarty at about 8.00 am on the morning of 18 February while doing his morning rounds. He obviously came to a similar conclusion regarding alcohol withdrawal based on the history Mr Fogarty had given of drinking approximately eight cans of beer most days. Dr Lai noted "*patient has early DTs.*" Accordingly, he prescribed diazepam (or Valium) which is a standard treatment for alcohol withdrawal and directed that the suspected alcohol withdrawal symptoms be monitored and recorded in a specific chart.

When Mr Fogarty's wife visited at around lunchtime on 18 February, she noticed him coughing sputum into a cup. This is also recorded in the nursing notes made at 2.00 pm on that day. He was coughing persistently when she returned after work and accordingly Mrs Fogarty went to see a nurse to get some cough medicine for him. Notably, however, at 2.00 pm a nurse recorded that he had "*not been complaining of chest pain this shift.*"

The results of the blood tests which were taken on 17 February 2005 were reported shortly midnight by being faxed from the pathology company to Dr Lai's rooms. It is unclear when he reviewed them although Dr Lai says he thinks he saw them on the morning of 18 February.

[9] The following narrative of what occurred while Mr Fogarty was an inpatient at the Winton hospital is taken from the medical records, the statements and oral evidence of those involved in his care. It is of considerable concern that the records appear to have been altered in some important respects. Values of vital signs seem to have been changed and some accounts were not written up until hours after the events. Some oral drug orders were only recorded *post facto.* I was not able to establish how this happened in all cases and it leaves some doubt as to the accuracy of some of the records.

Significnatly, they showed a white cell count of 13.7 including neutrophils of 9.3, band neutrophils, metamyelocytes of 0.82 and myelocytes of 0.41.

Dr Lai gave evidence that those results did not cause him to revise his diagnosis of gastroenteritis. He considered them only mildly elevated.

The patient's high pulse rate and temperature were reported to Dr Lai when a nurse telephoned him at about 6.00 pm but, strangely, she did not mention and the doctor did not inquire about Mr Fogarty's oxygen saturation levels which were charted as 90% at that time.

The nurse gave evidence that Dr Lai did not like to be called unless *"it was a situation"* and that she called him on this occasion because she felt Mr Fogarty needed some sort of medical intervention. When she contacted him, Dr Lai did not seem unhappy to be disturbed but he was *"short"* and *"to the fact."*

Throughout 18 February, his second day in the hospital, Mr Fogarty's temperature was in the main above average – at 4.30 pm it was 39.9 degrees. His heart rate remained high and from 6.00pm his oxygen saturation began to decline. At midnight it was recorded as 86% and at 2.00 am on 19 February it had decreased further to 82%.

As a result of becoming concerned about Mr Fogarty's condition the senior nurse who was caring for him on the night of 18/19 February 2005 moved him to a room closer to the nursing station so that he could be monitored hourly. At about 2:00 am on 19 February 2005 the nurse placed him on pure oxygen by placing a face mask over his nose and mouth. This brought Mr Fogarty's blood oxygen saturation levels back up to 92%. He remained tachycardic.

Despite his concern about the patient, the nurse did not call Dr Lai. He said that he had been informed when he commenced at the hospital that Dr Lai did not like to be called unnecessarily and the decision as to whether to call him was a matter left up to the discretion of the nurses.

The director of nursing says that unless there was something that urgently required his attention, Dr Lai did not normally return to the hospital after his morning rounds, relying on telephone calls from the hospital for updates. She says that unless the doctor was concerned about a patient he was not in the habit of himself calling the hospital.

Throughout the early hours of 19 February 2005 Mr Fogarty became increasingly delirious and confused. It was very difficult for the nurses to manage him as he kept removing his oxygen mask and pulling out his intravenous line.

At about 5:45am Mr Fogarty was noticed to be missing from his room and accordingly the registered nurse rang the Dr Lai to advise him of this.

Mrs Fogarty says that about this time she heard a knock on the door and opened it to find her husband standing there. He came inside and said that he wanted to have a bath. She said that she was able to converse with him although he was from time to time irrational and incoherent.

She realised he was very ill and needed to go back to the hospital. He agreed so but told her he first wanted to lie down next to his young son for a while.

Mrs Fogarty brought her husband back to the hospital at about 6:15 am. He contiued to be resistant to appropriate nursing. He insisted on going outside to have a cigarette. At about 7.00 am he was

seen smoking on the veranda of the hospital by the director of nursing. She persuaded him to come back into the hospital.

## *Pneumonia is diagnosed*

Mr Fogarty was reviewed by Dr Lai at about 8:00am. On this occasion the doctor noticed that he had crepitations in both lungs. Accordingly the doctor ordered he be commenced on broad spectrum antibiotics. He was ordered Ceftriaxone, Gentamycin and Rulide. A chest x-ray was also ordered. Dr Lai spoke to Mr Fogarty's family and told them that he was very ill but that there was no reason for him to be transferred to Townsville. Dr Lai told them that the antibiotics he had prescribed should counteract the pneumonia he believed Mr Fogarty was suffering.

The director of nursing did the chest x-ray just before 9.00 am. It was apparent to her when she reviewed the film that Mr Fogarty had an extreme lung infection. She took the films over to Dr Lai's room and it seems he looked at them at around 10.15 in between seeing other patients.

The antibiotics that had been ordered at 8.00 am were not given to Mr Fogarty unit 9.50 am. The reason for the delay was not able to be ascertained. Although this almost certainly had no bearing on the outcome it was a troubling breakdown in procedures.

Dr Lai says that he realised when he saw the X-rays that Mr Fogarty was seriously ill but he believed that the antibiotics that he had ordered were the only treatment options available. He says that as the only doctor available in the town he could not leave his surgery immediately to go back to the hospital because of the urgent cases needing his attention. He says that he triaged all of these patients and postponed seeing those he felt he could safely put off; the others he either dealt with immediately or told them to come up to the hospital to see him later in the morning.

After receiving at least two calls from the hospital advising of the difficulty the nurses were having in responding to Mr Fogarty's severe agitation, Dr Lai came back to the hospital to review him at about 11:30am. He noticed the patient was still very agitated and confused and the nurses were having difficulty keeping the oxygen mask on him. Dr Lai noted that his oxygen saturation were between 80 and 90% when he was taking 100% oxygen and that he had a very high respiratory rate of between 40-50 breaths per minute. Mr Fogarty remained tachycardic with a heart rate of about 130 beats per minute.

The doctor formed the view that he should be given sedatives to make it easier to nurse him. He was therefore given chlorpromazine and diazepam.

Dr Lai consulted with the Royal Flying Doctor Service and it was agreed that he should be evacuated to Townsville for more expert intensive care treatment.

Because of his continued agitation Mr Fogarty was given more sedatives including on this occasion midazolam. His medication during this period was as follows:

11.25 am – chlorpromazine 50 mg IV
11.45 am – midazolam 5 mg IV
12.00 midday - midazolam 3 mg IV
1:00pm or 1:25pm - midazolam 5 mg IV

During this time Mr Fogarty continued to deteriorate. At 11.45 am his oxygen saturation was only 66% on room air and that only improved to 80% on oxygen when the mask could be kept on.

At midday Dr Lai spoke to an intensivist at the Townsville hospital and requested that he arrange for the Royal Flying Doctor Service to attend to fly Mr Fogarty to Townsville.

By 1:00 o'clock it was apparent that Mr Fogarty was in severe respiratory distress and required suction to clear his airways. His oxygen saturation was down to 70% and he was showing signs of peripheral circulatory failure. Dr Lai decided to intubate Mr Fogarty to secure his airway. This occurred at 1:23pm. Mr Fogarty was given an unspecified dose of Scoline to assist with this procedure. The nasotracheal tube was introduced and checked to be in place with good air entering both lungs. However he almost immediately underwent a cardiorespiratory arrest and at 1:29pm CPR was commenced. It was unsuccessful and at 1:47pm Mr Fogarty was pronounced dead.

Mr Fogarty's wife and other family members were at the hospital for most of the morning. I have no doubt they were very distressed by what they witnessed as Kevin became delirious and struggled for breath. I offer them my sincere condolences to them.

## *Autopsy and expert opinion as to cause of death*

On 22 February 2005 an autopsy was performed on Mr Fogarty's body by Dr Krause a pathologist and government medical officer. In his report and in the evidence he gave to the court, Dr Krause confirmed that the examination of Mr Fogarty's lungs indicated that they had been infected for "*maybe as long as a few days*" but probably not longer. On the other hand he considered that the lesions on the kidney and prostate appeared to have been there "*probably roughly a week perhaps longer*".

He attempted to grow cultures from samples taken at autopsy in order to identify the organism responsible for the sepsis. No identifiable organisms that may have been responsible were produced.

Dr Norton, the Director of Microbiology at the Townsville Laboratory of Queensland Health Pathology Services, was sceptical of the diagnosis of Melioidosis in the circumstances where no organism had been cultured successfully. He considered that other possibilities included staphylococcal and pneumococcal as these organisms can be difficult to culture if the patient has been treated with any antibiotics. Melioidosis on the other hand is less affected by board spectrum antibiotics and is likely to be able to cultured post mortem.

Dr Krause expressed the view that the reaction pattern in the infected tissue that he examined was quite different to what one would normally see with a staphylococcal or pneumococcal infections. In his view the necrotic changes were more consistent with what one would expect to be caused by burkholderia pseudomallei the bacteria which cause Melioidosis.

There was also evidence of alcohol induced liver disease. This is relevant as alcohol abuse is known to predispose the patient to Melioidosis infection.

I also received evidence on this issue from Professor Bartholomew Currie, the Head of Tropical Emergency and Infectious Diseases at the Menzies School of Health Research in Darwin. He is an acknowledged Australian expert on Melioidosis.

In Professor Currie's opinion it is not uncommon for melioidosis serology to be negative with recent infections. And while he would expect about 80% of blood cultures taken from severe melioidosis sufferers to result in a positive reading for the relevant bacteria the fact that blood

cultures did not produce the burkholderia pseudomallei bacteria in this case did not convince him that Mr Fogarty did not die of melioidosis. On the contrary Professor Currie's opinion was that this was the cause of death and he had a particular regard to the histological changes, specifically the nature of the necrosis seen in Mr Fogarty's kidneys and prostate.

## Findings required by s45

I am required to find, as far as is possible, who the deceased was, when and where he died, what caused the death and how he came by his death. I have already dealt with this last issue, the manner of the death. As a result of considering all of the material contained in the exhibits and the evidence given by the witnesses I am able to make the following findings in relation to the other aspects of the death.

**Identity** – The deceased person was Kevin Edward Fogarty

**Place of death** – He died at the Winton Hospital in central western Queensland

**Date of death** – Mr Fogarty died on 19 February 2005

**Cause of death** - He died from community acquired pneumonia as a result of a melioidosis infection which probably invaded his system as a result of exposure to mud in the work place.

## Concerns, comments and recommendations

Section 46 provides that a coroner may comment on anything connected with a death that relates to public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in the future.

That requires the coroner to consider whether the death under investigation was preventable or whether other deaths could be avoided in future if changes are made to relevant policies or procedures.

The circumstances of Mr Fogarty's death, in my view, raise the following issues for consideration from these perspectives:-

- Did Ergon take all reasonable steps to protect its workforce from the risks of contracting melioidosis?

- Would any changes to Ergon's practices reduce the likelihood of similar deaths occurring in future?

- Did Mr Fogarty receive a reasonable standard of care when he was a patient at the Winton Hospital?

- Would any changes to the policies or procedures of the Winton Hospital and similar health care facilities reduce the likelihood of similar deaths occurring in future?

### *Did Ergon take reasonable steps to protect its workforce?*

The evidence indicates that Mr Fogarty was issued with a rainproof jacket, waterproof pants and gloves. He did not wear them on the day that it seems likely that he contracted the infection

because he left them in another vehicle. Ergon cannot be held responsible for this; certainly no one directed Mr Fogarty to continue without that apparel. Rather, it is a testament to Mr Fogarty's commitment to his work that notwithstanding his failure to have access to the gear he nonetheless continued with the job in the inclement conditions. He obviously knew how important it was for remote rural dwellers to have their electricity supply restored as soon as possible.

The occupational health and hygiene manager for Ergon Energy, Ms Anne Slack, commenced her role in 2004 and was on maternity leave at the time of Mr Fogarty's death. She gave evidence that prior to Mr Fogarty's death information concerning the risk of melioidosis had not been disseminated to Ergon employees. Since Cyclone Larry in 2006, information concerning this risk has been disseminated to tropical areas but not the central west because it has not been identified as a risk faced by outdoor workers there.

Mr Anthony Henkst was the area operations manager for Ergon at the time of Mr Fogarty's death. He gave evidence that safety meetings would occur approximately every two months in the district depots. Tropical diseases were not discussed at those meetings. More recently however flyers on tropical diseases, including melioidosis have been issued by Ergon to its workers but he could not recall any discussion about the issue at any meeting he had attended.

Mr Jeffery Bowes was in February 2005 the manager for regional services. He is now the acting general manager of operations north for Ergon. He gave evidence that in February 2005 he was unaware of melioidosis and consequently he had no reason to conduct any investigation into whether Mr Fogarty's death may have been caused or contributed by anything that occurred in his workplace.

## *Are any changes needed to Ergon's work practices or policies?*

As it has been mentioned already, Melioidosis is contracted via exposure to a specific aerobic bacterium which usually lives deep in the soil but which can be flushed out by heavy rain

The Winton region is within the endemic area of melioidosis. It is likely that Ergon workers will on occasions unavoidably come into contact with mud. However if they are made aware of the risk this poses, it is likely that they will take steps to avoid contact when that is possible and/or monitor their health subsequent to such exposure so that if they contract melioidosis it is more likely to be speedily diagnosed.

I do not consider benignly sending around flyers or pasting of posters on meal room walls is likely to achieve this. I am sure that Ergon more actively manages the risk of physical injury in the workplace; I am of the view that they need to give greater prominence to the risk of contracting tropical diseases.

### Recommendation 1 - Workplace education risk of melioidosis

*I recommend that Ergon Energy Ltd proactively educate their workers as to the risk of contracting melioidosis and other tropical diseases in the workplace. I recommend that it review the information provided to workers in relation to these issue and give due consideration to how workers can be encouraged to actively engage with that information.*

## *Did Mr Fogarty receive a reasonable standard of care?*

Mr Fogarty did not receive any antibiotics until he had been in hospital for 48 hours. He died four hours later. These facts raise for consideration whether his condition was adequately monitored

and whether the diagnosis of pneumonia was unduly delayed. They also prompt inquiry as to whether he would have survived had he been evacuated to Townsville.

In considering these issues I have been greatly assisted by the independent expert evidence given by Dr Norton, the Director of Microbiology at Queensland Health's pathology laboratory in Townsville, Dr David Symmons, a senior staff specialist in emergency medicine at the Townville Hospital, Professor Bart Currie an infectious diseases physician at Royal Darwin Hospital and Head of the Tropical and Emerging Infectious Diseases Division of the Menzies School of Health Research and Dr John Raftos, a senior specialist in emergency medicine at St Vincent's, Sutherland, and Sydney Hospitals and a Senior Lecturer in Medicine at the University of NSW.

In critiquing the standard of care provided to Mr Fogarty it may be convenient to look separately at the initial diagnosis, the subsequent treatment and finally, the management of the emergency in the final hours of Mr Fogarty's life.

## Initial diagnosis

Dr Lai gave evidence that he was not aware at the time of Mr Fogarty's death that melioidosis was endemic to the Winton area and he had not previously treated the disease. He did say however, that he had treated many cases of community acquired pneumonia, averaging two to three patients per month in winter.

He said that when he examined Mr Fogarty on the morning of 17 February 2005 he formed a diagnosis of gastroenteritis. He said that as his examination of Mr Fogarty's chest was clear he did not consider pneumonia as a differential diagnosis. The notation of "*atypical chest pain*" was a reference to a possible cardiac cause and it was for that reason that he ordered an ECG. He did not believe that the chest pain that Mr Fogarty described was pleuritic in nature even though he described it that way in the letter he wrote the morning of 19 February 2005 when he was preparing to transfer Mr Fogarty to Townsville. He said that description was informed by what he then knew of Mr Fogarty's condition.

Dr Raftos was of the view that Mr Fogarty may have already been in septic shock when he presented on 17 February and that Dr Lai was unwise to rely on his examination of the patient to exclude pneumonia. He considered an x-ray should have been taken that day because only a small proportion of patients who have pneumonia present with symptoms that can be identified by clinical signs on chest examination. He said in his experience between 60 and 80% of people who are later shown to have pneumonia have normal chest examinations.

Professor Currie was not as critical. He agreed that if someone complained of pleuritic chest pain this would make him think of a chest infection. However he also acknowledged that general aches and pains associated with gastroenteritis might cause someone to mention chest pain. Generally he was not inclined to think a chest x-ray was necessarily indicated on the morning of 17 February 2005 and indeed in his view it was possible the chest x-ray taken then would have been clear having regard to the manner and speed in which melioidosis develops.

Dr Symmons said he would not have ordered a chest x-ray on the basis of Mr Fogarty's initial presentation but he agreed that a chest x-ray would be of assistance when settling a differential diagnosis where there are a number of competing possibilities.

## Subsequent treatment

Nor did Dr Lai consider that the symptoms he observed when he examined Mr Fogarty again at 8.00 am on 18 February were indicative of pneumonia. He said his assessment in this regard was

based on an absence of respiratory distress or typical crackling sounds in Mr Fogarty's chest. He said as a consequence of Mr Fogarty's chest being clinically clear on examination at that time the notes indicating earlier chest pain and a history of coughing green sputum did not cause him to reassess his previous diagnosis. At that stage he still considered that Mr Fogarty was suffering from gastroenteritis and alcohol withdrawal syndrome. He considered that as Mr Fogarty's blood pressure had improved and as his temperature was not as high as it had been on admission, he was on "*on the right path*".

Dr Lai said that if he had been notified on the evening of 18 February that Mr Fogarty's oxygen saturation levels were down to 90% he would have returned to the hospital and looked further into the symptoms which had been charted during that day.

Dr Lai denied giving any instructions that nursing staff at the hospital were not to call him if they were concerned about a patient although he agreed he was "*business-like*" on the phone. He acknowledged there were no guidelines in place stipulating when he should be contacted although he referred to the existence of a primary clinical care manual.

Dr Lai conceded that he was not aware of the significance of the presence of neutrophils, band neutrophils, myelocytes and metamyelocytes in the blood serology. He agreed that in retrospect these were indicates of pneumonia.

He also agreed that by 6.00 pm on the afternoon of 18 February, given the presence of these bodies in the blood, the fall in the oxygen saturation level to 90%, the fact that Mr Fogarty was still febrile and had a productive cough, pneumonia was the most likely diagnosis.

He said that had he been told all of these things he would have ordered a chest x-ray to be performed. He was unable to explain why he did not enquire about the oxygen saturation levels when the nurse spoke to him at 6.00 pm and gave him information about the other vital signs.

Dr Raftos was of the view that the observations on the afternoon of 18 February, particularly the oxygen saturation of ninety percent was something that should have been brought to the attention of Dr Lai by nursing staff. He was of the view that the hospital should have guidelines to stipulate when nursing staff are to contact a doctor. For example he suggested that if the heart rate is above 100 beats per minute, blood pressure below ninety systolic or oxygen saturation below ninety percent guidelines should require the nursing staff to contact a doctor.

Dr Raftos was of the view that throughout the management of this patient Dr Lai failed to give appropriate weight to the history of chest pain, and the notations concerning the production of green sputum.

Dr Raftos did not dispute that an initial diagnosis of gastroenteritis was reasonable; more his opinion seems to be that a differential diagnosis of pneumonia should have been maintained and considered as the case progressed.

Dr Raftos agreed with the other experts that the white cell count on the blood serology report was mildly high but not dramatically so. It was his view that the presence of myelocytes and metamyelocytes was indicative of the presence of a very serious infection – consistent with community acquired pneumonia. In his second written report Dr Raftos was adamant that these results were inconsistent with gastroenteritis, although when he gave evidence he conceded it was possible that such an infection could, in some cases, cause similar blood results.

Professor Currie considered that the white blood cell count was not inconsistent with gastroenteritis although the myelocytes and metamyelocytes were suggestive of a more severe infection.

Professor Currie did not consider Mr Fogarty was in septic shock on the morning of 17 February 2005 but that there was a progressive sepsis developing during 18 February 2005 and the evening of 18 and 19 February 2005.

He agreed with Dr Raftos that 90% oxygen saturation represented a desirable intervention level for further treatment and that when the saturation fell as low as 82% it should have caused serious concerns that the patient was substantially unwell.

Professor Currie was of the view by 6.00 pm on 18 February 2005 there was a significant indicator of the emergence of pneumonia and that the appropriate clinical course at that stage would have been to begin antibiotics. He would also have undertaken a chest x-ray at that stage.

Professor Currie indicated that had Mr Fogarty received appropriate melioidosis specific care on the evening of 18 February 2005, including admission to an intensive care unit and appropriate antibiotic treatment his chances of survival would have been greatly increased, albeit he still would have faced a 50% mortality risk. He thought that antibiotics alone on the evening of 18 February 2005 would not have made any difference although it may have "*bought a little more time*". The critical factor was diagnosis of melioidosis which would usually taken twenty four to thirty six hours by way of serology or the growing of cultures.

Dr Symmons said if he was caring for a patient with continuing chest pain and a cough producing green sputum, when the patient's oxygen saturation fell below 90% he would order a chest x-ray. When it was pointed out that these circumstances prevailed at 4:30 am on 18 February he indicated that he believes an x-ray taken at that time would have shown some pathology of pneumonia.

Dr Symmons agreed that the presence of myelocytes and metamyelocytes in the blood report indicated the presence of sepsis but that it was not inconsistent with gastroenteritis.

Dr Norton considered that the important aspect of the treatment was the time at which Dr Lai became aware that Mr Fogarty was breathless, coughing up green sputum and suffering pleuritic chest pain. He considered that this constellation of symptoms pointed to a condition that should have taken precedence over nausea, diarrhoea and vomiting. He agreed that confirmation bias may have contributed to Dr Lai failing to revise his initial diagnosis.

Dr Norton was of the view that towards the evening of 18 February 2005 it should have been recognised that things were not going as would be expected of a patient suffering gastroenteritis. He said that if Mr Fogarty had presented at the Townville Hospital with the symptoms he was displaying on the evening of 18 February, he would presume that melioidosis may be involved and order antibiotics that would counter it – Meropenem and Bactrim.

All of the experts who gave evidence in relation to the matter agreed that the management of Mr Fogarty was made more complex by the overlying alcohol withdrawal process he was most certainly undergoing. They also agreed that there were confusing aspects of the case; for example, that Mr Fogarty felt well enough to continue smoking right through to the morning of 19 February and that only six or seven hours before he died he was able to walk over a kilometre to his home.

## Emergency management

Dr Lai's evidence was that when he examined Mr Fogarty on the morning of 19 February, he quickly concluded that he was likely to be suffering from community acquired pneumonia even before he saw the x-ray. Dr Lai said that he had in the past treated such a condition with antibiotics with good outcomes. He acknowledges however, that when he saw the x-ray he realised Mr Fogarty's condition was more serious than he had previously thought and it is for this reason he began exploring the possibility of evacuating Mr Fogarty to Townsville.

Dr Lai defended his decision to sedate Mr Fogarty on the morning of 19 February on the basis that the staff would not have been able to maintain him on pure oxygen without taking this course. He acknowledged the risk that sedation would depress respiration but considered on balance its positive effects outweighed the negative.

Dr Lai was hesitant to intubate because he had only done the procedure about once a year and thought that if he could through sedation manage to keep the oxygen mask on Mr Fogarty they would be able to get him to Townsville without intubation. Dr Lai says that it was only when Mr Fogarty began to exhibit signs of peripheral circulatory failure did he realise that intubation was unavoidable.

Dr Lai explained his failure to request an RFDS extraction until approximately midday despite the low oxygen saturation levels from 6.00 am onwards on the basis that he wanted to see whether the antibiotics and the pure oxygen would make a difference to his situation.

He said that he took some comfort when he observed Mr Fogarty having a cigarette shortly after 8.00 am on 19 February as the doctor was leaving the hospital to attend his clinic.

Dr Raftos was of the view that Mr Fogarty should not have been given the sedatives that he was prescribed on the morning of 19 February without him first being intubated as there was too great a risk that they would suppress his respiration.

Dr Raftos conceded that Mr Fogarty should have been intubated when his oxygen saturation dropped below ninety percent.

Dr Raftos considered the situation confronting staff at the Winton Hospital would have been difficult to manage even in a modern well equipped city hospital. He was adamant however, that he would have intubated Mr Fogarty well before his oxygen saturations got as low as eighty two percent.

Professor Currie did not believe the delay of one hour and fifty minute between the antibiotics being prescribed and their being given made any material difference to the outcome. Professor Currie emphasised the difficulty in diagnosing melioidosis in remote rural towns such as Winton with limited health care resources.

Dr Symmons said that he did not consider that the giving of sedation was excessive without intubation. He said that patients with a reasonable level of alcohol use tend to be very tolerant to sedatives. Having said that, he said that had he been present he would have intubated Mr Fogarty early on the morning of 19 February but that it was a difficult procedure and he could understand why Dr Lai would have been reluctant to do so. He considered that given Dr Lai's lack of expertise he could understand the doctor avoiding intubation as long as Mr Fogarty was maintaining saturation above 80%.

Dr Symmons when apprised of the low oxygen saturation figures on the morning of 19 February 2005 said that he considered Dr Lai should have called for RFDS support sooner than he did. He agreed that Mr Fogarty was an appropriate candidate for evacuation by the Royal Flying Doctor. He said however, it is likely that Mr Fogarty would have received the same antibiotic treatment at Townsville as he received at Winton.

All of these specialists agreed that absent the diagnosis of melioidosis, the antibiotics given were an appropriate response to the community acquired pneumonia. As has been mentioned, however, Dr Norton suggests that once the presence of CAP is established in a patient living in the tropics, melioidosis should be presumptive diagnosis until tests could exclude it.

## *Findings and recommendations concerning medical care*

I do not consider that it can be proven that had Dr Lai more closely monitored Mr Fogarty and caused him to be transferred to Townville on 18 February he would have necessarily survived: he was severely infected with virulent bacteria. However, it would certainly have increased his chances of surviving. It is therefore necessary to consider why this didn't happen.

As a result of considering the above analysis I consider the evidence enables me to make the following findings and recommendations:-

### Lack of medical intervention

Dr Lai was not told important information indicating Mr Fogarty's condition was deteriorating during the afternoon and evening of 18 and early hours of 19 February. He acknowledges had he become aware of this he would have caused his chest to be x-rayed and may have had Mr Fogarty transferred to Townville.

He was deprived of this information because:-

- there were no guidelines in place that stipulated the circumstances under which nurses were to contact the doctor on call;
- Dr Lai's interpersonal relations with the nurses was such that they were reluctant to contact him; and
- he failed to make sufficient inquiry as to the patient's condition.

### Recommendation 2 - Development of guidelines regarding medical intervention

*If Queensland Health is to continue to operate hospitals that are not staffed by full time doctors it should develop guidelines that clearly identify intervention points that assist the nursing staff to know when a doctor's assistance should be sought.*

### Lack of knowledge and clinical advice

Melioidosis is not a rare disease: within its endemic range its incidence is apparently 5.8 cases per 100,000 of population according to an article by Professor Currie and others.[10] The same article reported 47 cases in 2001-02 wth a mortality rate of 21%.

[10] Cheng, Hanna, Norton, Currie et al, "*Melioidosis in northern Australia, 2001 – 02*," CDI Vol 27, no. 2, 2003 p272

However, Dr Lai's training and/or experience did not alert him to the possibility that Mr Fogarty was suffering from melioidosis - he said he was not aware it was endemic to the area - and he apparently had no ready source of more experienced or knowledgeable advice. This calls into question the privileging and credentialing process that led him to be appointed the medical superintendent of the Winton Hospital and the clinical support provided to him.

### Recommendation 3 – Training and on-going advice for rural practitioners

*I recommend that Queensland Health review Dr Lai's privileges and credentials and the clinical networks that are intended to provide support to remote and rural practitioners to ascertain how doctors such as the practitioner involved in this case can be more effectively supported.*

## *Referral to the Medical Board*

So far as is relevant to this case, the Act provides in s48(4) that a coroner may give information about a person's conduct to a disciplinary body for the person's profession if the coroner believes the information might cause the body to take steps in relation to the conduct.

This has naturally led me to consider whether I should refer Dr Lai's conduct to the Medical Board. It might be argued that his failure to assiduously monitor Mr Fogarty's condition in the afternoon and evening of 18 and the early hours of 19 February was professional conduct falling below the standard reasonably expected of a doctor in his situation. I know that Mr Fogarty's family think so. It might also be thought that administering sedatives known to depress respiration to a patient suffering pneumonia who has not been intubated is inappropriate.

However I am conscious that Dr Lai did not recklessly ignore Mr Fogarty. He spoke to a nurse at about 6:00pm on 18 February and she told him nothing that should necessarily have caused him to alter his earlier assessment. He heard nothing more until the next morning and by then, sadly, nothing could have been done to save Mr Fogarty.

Dr Lai did not choose to do nothing: as the emergency developed during the morning of 19 February, he considered the best approach to dealing with Mr Fogarty's dangerously low oxygen saturation levels, while he was also suffering acute delirium, was with sedation that might make it easier to keep an oxygen mask in place. Undoubtedly it would have been preferable to have intubated Mr Fogarty but all of the experts agreed that this was a procedure fraught with danger that even challenges specialists on occasions. Dr Lai was not skilled in the procedure and I can understand why he would wish to avoid undertaking it if possible.

It must be remembered that Dr Lai is a general practitioner, working largely alone in a remote, rural facility. He was very busy. There were numerous other patients clamouring for his assistance. He was confronted with a complex case that developed very quickly. He may have made some errors of judgement but I do not consider his conduct warrants professional sanction.

I am sure he has learnt from this sad case.

I close this inquest.
Michael Barnes
Staten Coroner
Brisbane

28 September 2007