QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INVESTIGATION

CITATION:	**Non-inquest findings into the death of Noelene Gaye BISCHOFF and Yvana Jean Yuri BISCHOFF**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Brisbane
DATE:	30 March 2015
FILE NO(s):	2014/122 & 2014/123
FINDINGS OF:	Terry Ryan, State Coroner
CATCHWORDS:	CORONERS: Allergic type reaction, scombroid syndrome, histamine fish poisoning, asthma, food safety, Smartraveller website.

Background

On 31 December 2013 Noelene and Yvana Bischoff left the Brisbane International Airport for a holiday in Bali. Their flight arrived in Denpasar on the same day. They travelled to Ubud where they stayed for 3 nights at the Casa Ganesa Hotel. During their stay they visited attractions in the Ubud area.

On 3 January 2014 Noelene and Yvana travelled to a beach resort at Padang Bai on the east coast of Bali where they checked in at approximately 3:50pm.

Noelene and Yvana later dined at the hotel restaurant where they shared a meal comprising grilled mahi mahi, or dolphin fish (coryphaena hippurus) together with a vegetarian pizza and chicken curry. They also drank a range of non-alcoholic refreshments.

Onset of Illness

Early on 4 January 2014 Yvana contacted staff at the resort seeking urgent medical attention for her mother and herself.

It appears that the onset of their symptoms commenced at approximately 10:00pm on 3 January 2014. Noelene's condition was significantly worse than Yvana's at this time. She was experiencing dizziness, nausea and vomiting.

After medical assistance arrived at the resort Noelene was transported by ambulance to the Klinik Penta Medica, a 24-hour medical centre at Karangasem.

A medical report obtained from Penta Medica indicates that ambulance officers arrived at the resort at 00:45am and found Noelene to be pale and cyanosed with decreased consciousness. She was injected with adrenaline, given oxygen by mask and an injection of dexamethasone – an anti-inflammatory corticosteroid used to treat breathing disorders.

Unfortunately, Noelene did not respond to treatment at the medical centre. A death certificate issued by the examining physician from the clinic records the time of her death as 2:00am on 4 January 2014.

By this time Yvana's symptoms were identical to those of her mother. Yvana had been provided with the same initial treatment as Noelene at Penta Medica.

At 02:15am she was transferred by ambulance to the Bali International Medical Clinic (BIMC) at Kuta, over 50kms from Karangasem.

Yvana was conscious upon arrival at BIMC at 03:40am but her condition deteriorated rapidly. She was speaking in phrases and gasping for air. She had central cyanosis and mottled skin and was given oxygen and intravenous fluids.

Yvana had several seizures and was given midazolam and diazepam. At 04:00 hours she went into cardiac arrest and CPR was commenced.

A death certificate was issued for Yvana by Dr Valensia Hanafi from the BIMC at 5:38am on 4 January 2014. The certificate indicates that the cause of death could not be established without an autopsy.

Investigation

Noelene and Yvana's family expressed concerns about the cause and circumstances of their deaths, and requested that an autopsy be conducted by a forensic pathologist in Queensland in order to exclude undiagnosed medical conditions and foul play.

The family had advised the Department of Foreign Affairs and Trade they did not want a post-mortem examination to be conducted in Indonesia and requested that the bodies be repatriated to Australia for this purpose.

As the deaths occurred outside Australia, they could not be investigated in the absence of a direction from the Attorney-General and Minister for Justice. On 6 January 2014 I sought a direction under section 12 of the *Coroners Act 2003*.

On 7 January 2014 a direction was given by the Acting Attorney-General and Minister for Justice to the State Coroner to investigate Noelene and Yvana's deaths. On 11 January 2014 Noelene and Yvana's bodies were repatriated to Australia.

The location of the deaths presented significant challenges for the investigation. With the assistance of the Australian Federal Police, a number of requests for assistance were made to the Indonesian National Police (INP), including a request for advice about the outcomes of any forensic testing that had been undertaken in Indonesia.

A request was made of the INP that any forensic pathology samples gathered in Indonesia, including food samples and all test results, be returned to Brisbane. The INP response with respect to testing of vomit samples found at the hotel was that they contained traces of Bailey's liqueur, soft drink, ibuprofen and ethanol.

A request was also made for all medical notes and records on file to be obtained, including the ambulance record and BIMC notes. The INP subsequently advised that they were unable to release these records as they were considered official investigation documents.

A request was made for a list of medications together with any samples. The INP provided a detailed list of medications and advised that all medications had been legitimately purchased in Australia.

The INP also advised that it had determined that the Bischoffs had not received any medical treatment during their stay in Indonesia apart from on the night of their deaths.

Dr Kunti from the Sangla Hospital Mortuary advised that Noelene and Yvana had presented in respiratory distress and were administered medication to revive them during the time in the ambulance. This medication was described in general terms only as 'energetik' and 'adrenalin'. Dr Kunti made a specific reference to Yvana having died of cardiac arrest after presenting with respiratory distress.

A request was also made for photographs of the scene. The INP advised that they had taken photographs but they were not notified of the incident until 08:00am on 4 January 2013. The photographs were not supplied as a number of people including hotel security staff had been in the hotel room prior to the INP's arrival.

Ongoing attempts were made up until June 2014 to obtain forensic specimens believed to be held by Indonesian authorities. In July 2014 advice was received that any specimens recovered by Indonesian officials during the examination of the scene had been destroyed.

Autopsy examinations

Autopsy examinations were conducted on 12 January 2014 by experienced forensic pathologist, Dr Alex Olumbe.

The post-mortem examinations for each woman showed no signs of injury. Both autopsies showed mild to moderate congestion and oedema of the upper aero-digestive tract, mild congestion around the vocal cords and pulmonary oedema. Noelene and Yvana both presented with moderate dilatation of the heart.

Histological examination of the lungs showed moderate to severe changes of asthma and examination of the upper aero-digestive tracts showed changes consistent with acute anaphylactic reaction.

Blood samples were taken for analysis which indicated the presence of significantly elevated tryptase (in view of possible anaphylaxis), elevated levels of histamine and methyl histamine which is the major metabolite of histamine.

On 4 February 2014 Dr Olumbe and Chief Forensic Pathologist Dr Charles Naylor met with family members and advised that they had formed the opinion that the cause of Noelene and Yvana's deaths was an allergic type reaction caused by food they had eaten, especially fish, or by the so-called scombroid syndrome (also called histamine fish poisoning), or a combination of these causes. This was confirmed in subsequent correspondence to the family from Dr Naylor.

Dr Olumbe's report noted that the allergic reaction present is likely to have been anaphylaxis, which occurs when the body's own cells release histamine and other chemicals in response to an external allergic trigger. The autopsy showed clear evidence of allergy or asthma. Anaphylaxis can be resistant to treatment in those with previous asthma.

Dr Olumbe also noted that scombroid syndrome occurs after eating certain types of fish in which particular bacteria produces high levels of histamine. He also noted that scombroid syndrome may be more severe in women and those with previous allergies or asthma.

The features of anaphylaxis and scombroid syndrome are similar because histamine plays an important part in both. Dr Olumbe noted that the only reliable way to distinguish them is to test a piece of fish for histamine, which was not possible in this case.

Numerous negative test results ruled out a wide range of causes of death such as bacterial food poisoning and chemical contamination of food. In addition, there was nothing to suggest that Noelene or Yvana had been drugged.

The medical and scientific investigators engaged in examining the possible causes of death included the fields of forensic pathology, toxicology, radiology, coronial nursing, neuropathology, immunology, bacteriology, virology, food chemistry and food DNA testing.

On 28 February 2014 Dr Olumbe issued a certificate listing the cause of death for Noelene as an allergic type reaction, with underlying conditions of asthma and obesity. Dr Olumbe issued a certificate for Yvana listing the cause of death as an allergic type reaction with the underlying condition of asthma.

Consistent with his earlier advice to the family, Dr Olumbe concluded that the cause of the allergic type reaction was possibly food that Noelene and Yvana had eaten and/or the scombroid syndrome. The exact underlying cause or the triggering factor could not be established.

Conclusion

Based on the police investigation and the autopsy reports, I consider that there is sufficient information to enable findings to be made about the circumstances of Noelene's death and Yvana's death.

I do not believe that more useful information would be obtained by holding an inquest, particularly having regard to the location of the deaths and potential witnesses, and the challenges presented in any further investigation.

While I do not consider that it is in the public interest to hold an inquest, after consultation with the family, the findings will be published in accordance with section 46A of the *Coroners Act 2003.*

Findings required by s. 45

Identity of the deceased:	Noelene Gaye Bischoff
How she died:	Noelene died within hours of developing a severe reaction to food, likely to have been fish, consumed while on holiday in Indonesia.
Place of death:	Klinik Penta Medica, Karangasem, Bali, Indonesia
Date of death:	4 January 2014
Cause of death:	1(a). Allergic type reaction (not otherwise specified) Other contributory factor: 2. Asthma, Obesity
Identity of the deceased:	Yvana Jean Yuri Bischoff
How she died:	Yvana died within hours of developing a severe reaction to food, likely to have been fish, consumed while on holiday in Indonesia.
Place of death:	Bali International Medical Clinic, Kuta, Bali, Indonesia
Date of death:	4 January 2014
Cause of death:	1(a). Allergic type reaction (Not otherwise specified) Other contributory factor: 2. Asthma,

Travel and Food Safety

The circumstances of Noelene and Yvana's deaths highlight the importance of travellers being fully informed about the risks of travelling to particular destinations, and the importance of food safety generally.

The Department of Foreign Affairs and Trade provides travel advisories for over 160 countries on its Smartraveller website[1]. These are updated regularly. The advice for Indonesia as at 30 March 2015 includes a health warning as follows[2]:

> *You should also be aware that illness caused by naturally occurring seafood toxins such as ciguatera, as well as scombroid (histamine fish poisoning) and toxins in shellfish can be a hazard (for more information see Queensland Health's fact sheet). Seek urgent medical attention if you suspect poisoning.*

The Queensland Health fact sheet on Naturally Occurring Seafood Toxins notes that scombroid poisoning can occur when certain types of fish, not limited to those of the scombroid species, are not immediately chilled and stored properly[3].

> *The flesh of the fish starts to decompose by bacterial action soon after being caught. In this process, histidine in the flesh of the fish is converted into histamine. This can occur rapidly if fish is not chilled properly. Freezing or cooking the fish once it has been contaminated will not kill the toxin and prevent illness. Therefore, chilling the fish as soon as possible is important to prevent contamination by histamine.*

This advice applies equally to fish caught and consumed within Australia as well as in overseas destinations. While Australia has a comprehensive food safety framework, consumers of food obtained in regions without such a framework, or outside the regulated sale of seafood within Australia[4], need to be aware of the significant risks associated with eating fish that may not have been transported and stored under controlled temperatures[5].

I close the investigations.

Terry Ryan
State Coroner
Brisbane
30 March 2015

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[1] http://www.smartraveller.gov.au
[2] http://www.smartraveller.gov.au/zw-cgi/view/Advice/Indonesia
[3] www.health.qld.gov.au/foodsafety/documents/fs-37-sea-toxin.pdf
[4] Australia New Zealand Food Standards Code - Standard 4.2.1 - Primary Production and Processing Standard for Seafood
[5] The Standard defines "temperature control" to mean maintaining seafood at a temperature of:
(a) 5°C, or below if this is necessary to minimise the growth of infectious or toxigenic microorganisms in the food so that the microbiological safety of the food will not be adversely affected for the time the food is at that temperature; or
(b) another temperature – if the food business demonstrates that maintenance of the food at this temperature for the period of time for which it will be so maintained, will not adversely affect the microbiological safety of the food.