QUEENSLAND COURTS

# OFFICE OF THE STATE CORONER

# NON-INQUEST FINDINGS

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| CITATION: | Investigation into the death of Lilly Ella DAW |
| TITLE OF COURT: | Coroners Court |
| JURISDICTION: | Southport |
| FILE NO(s): | 2011/361 |
| FINDINGS OF: | James McDougall, Coroner |
| CATCHWORDS: | Coroners: twin pregnancy, intrauterine foetal death, cystic encephalomalacia, Twin-Twin Transfusion Syndrome |

Lilly Ella Daw was approximately one month old. She was born on 8 December 2010 to Haley Sergeant born 29 December 1990. Haley had her first pregnancy in 2009. At this time she was in grade twelve at school. Haley had a history of heavy alcohol and tobacco use. Macy Sergeant was born on 2 February 2010.

Haley was referred to the Logan Hospital on 22 September 2010 with an unplanned second pregnancy. The date of conception was around April 2010. It was twin pregnancy. An ultrasound conducted on 8 November 2010 indicated the gestation to be 27 weeks plus three days. At this time an abnormal full blood count was identified for Haley and this was discussed with the haematology team at Princess Alexandra Hospital.

On 25 November 2010 an ultrasound was undertaken which showed an intrauterine foetal death. The gestation at this time was 29 weeks plus one day. Twin one (Lilly Ella Daw) was normal at this time and twin two was deceased. Haley told doctors she was smoking at least 20 cigarettes a day, sometimes up to 35 cigarettes a day throughout her pregnancy.

When reviewed at the Mater Fetomaternal Unit it was considered that the demise of twin two had occurred in the last three days. There is a query that foetal anaemia was present in twin one as a result of the twin/twin transfusion. It was recommended that a foetal MRI scan should be undertaken two to three weeks post intrauterine foetal death to assess neurological damage to the surviving twin (Lilly Ella Daw). This was to be facilitated through the Mater Fetomaternal Unit.

Paediatrician, Dr Stephen Withers offers the opinion that the risk for a neurological injury to the surviving twin (Lilly) referred to the ultrasound report undertaken at the mater Hospital were estimated to be in the range of 20 per cent.

An ultrasound undertaken on 3 December 2010 was reported as showing no change in the surviving twin (Lilly). The foetal MRI was never undertaken but had been scheduled for between 9 and 16 December 2010.

Haley went into labour in the early hours of 8 December 2010 and delivered at home. Lilly was delivered at 02.35 hours. She required resuscitation and was transferred to the special care unit at Logan Hospital.

Between 2.00am and 3.00am on 30 January 2011 Lilly's father, Jamie Scott Daw and Mother, Haley Cassandra Sergeant put Lilly Ella Daw in their bed with them as she was restless and not sleeping. They went back to sleep with Lilly Daw sleeping in the middle of the bed between them. Jamie Scott Daw awoke at about 6.30am and noticed Lilly was awake as she looked at him and moved her arms in a manner as though she was stretching. He said Lilly went back to sleep and then he went back to sleep.

At approximately 8.00am on 30 January 2011 both parents woke up and noticed Lilly lying still between them on the bed but to be bleeding from the

nose. Jamie Scott Daw telephoned Queensland Ambulance Service as he realised Lilly was not breathing. The operator gave advice to Jamie Daw on how to perform CPR and the ambulance arrived a short time later. Lilly Ella Daw was pronounced deceased at 08.25 hours on 30 January 2011.

An autopsy was conducted on 1 February 2011. At autopsy streptococcus pneumonia, a bacterium which can cause pneumonia was isolated from a post mortem sample of blood. There is no evidence of sepsis during life however and the significance of this finding, according to the pathologist, is unclear. What was found at autopsy however was cystic encephalomalacia. The pathologist comments:

*"This is a striking and unusual condition which may be associated with sudden death. Given the history, this was likely secondary to intrauterine twin foetal death with twin-twin transfusion. The contributions from potential birth trauma, co-sleeping and isolation of streptococcus pneumonia from a post mortem blood culture are of more speculative significance. For these reasons, I am certifying the death as being due to cystic encephalomalacia."*

The cause of death was found cystic encephalomalacia.

This matter was investigated at my request by Dr Stephen Withers, Paediatrician and Clinical Geneticist. In relation to obstetric care, Dr Withers says as follows:

*"Clearly it was identified that these twins were at risk. They were referred to the Fetomaternal Unit of the Mater Mothers Hospital. The question to be considered is whether having being identified as MCDA twins, should they have been referred prior to the demise of twin two. A diagnosis was made and an appropriate strategy was put in place to survey the surviving twin for what was identified as a significant risk of neurological injury – 20 percent. One of the problems that occurred which derailed this entire process was that Haley delivered at home. As a result of this by the time the surviving baby, Lilly, arrived at hospital there is no specialist specific need for anyone to review the obstetric notes in any detail. The demise of twin two had already been identified and so this presented no special legal issue. Haley's desire to leave hospital as quickly as possible following the delivery meant that her own notes would simply have gone back into the filing system as soon as she was discharged from hospital…"*

In relation to neonatal care, Dr Withers says:

*"Lilly did remarkably well whilst in the neonatal care unit at Logan Hospital. The issue however is that clearly that no one was cognisant of the potential issues for and MCDA twin were there had been the demise of one twin. If anyone had known of the potential risks then of course they would have followed up with some form of cranial imaging. This did not occur…*

*Lilly was discharged home at <36 weeks gestation on day 28. This seemed relatively early and one would hope that there had been a very detailed follow*

*up put in place with community support in these circumstances. I am not aware this occurred. I am not aware that the risk of SIDS was discussed with Lilly's parents."*

Dr Withers then goes on to discuss Lilly's paediatric care and refers to her presentation with a viral respiratory tract illness identified to be Parainfluenza Type 2. He comments that there is no information as to how Lilly recovered from this illness. Dr Withers comments in relation to Twin/Twin Transfusion Syndrome that this is a complication of monochorionic/diamniotic twin pregnancy occurs as a result of shunting that occurs from one twin, often referred to as the donor twin, and the other twin, referred to as the recipient twin. The shunting occurs through a series of vascular anomalies within the placenta. The net result is that the donor twin becomes hypovolaemic, anuric and develops oligohydramnios (decreased amniotic fluid). The recipient twin becomes hypovolaemic and polyuric with polyhydramnios (increased volumes of amniotic fluid). He says that when recognised this condition can be treated. But he says the difficulty in this case was that by the time a referral had been made to the Mater Fetomaternal Unit the demise of twin two had already occurred. In relation to cystic encephalomalacia, Dr Withers says, the risk of this undertaken for monochorionic twins was considered to be 18 per cent. The neurological injury that occurs most frequently is multi cystic encephalomalacia. This is where there is significant loss of brain tissue in cyst form in the area where this tissue has been lost.

Dr Withers concludes that Lilly was a baby who was significantly compromised by her underlying neurological injuries. She had experienced a presentation to hospital in the weeks before with cyanosis and apnoea. This was in the context of a significant respiratory tract illness with confirmed Parainfluenza Type 2. Other notable events included co-sleeping and a family history of heavy tobacco use, both risk factors for SIDS.

Having considered all of the evidence I find that it is not in the public interest to proceed to inquest in this matter as it has been fully investigated and Dr Withers has addressed all of the issues adequately in his report. I do however, refer Dr Withers' report and my findings to the Office of the Health Ombudsman for his consideration.

**James McDougall**
**Coroner**
**Southport**
**29 January 2015**