



# MAGISTRATES COURT *of* TASMANIA

## CORONIAL DIVISION

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### **Record of Investigation into Death (Without Inquest)**

*Coroners Act 1995  
Coroners Rules 2006  
Rule 11*

**(These findings have been de-identified in relation to the name of the deceased, family, friends, and others by direction of the Coroner pursuant to s57(1)(c) of the Coroners Act 1995)**

I, Robert Webster, Coroner, having investigated the death of OV

**Find, pursuant to Section 28(1) of the Coroners Act 1995, that**

- a) The identity of the deceased is OV;
- b) OV died of complications arising from a laryngeal obstruction caused by a metal screw;
- c) OV's cause of death was hypoxic brain damage; and
- d) OV died on 7 May 2022 at Hobart in Tasmania.

In making the above findings I have had regard to the evidence gained in the comprehensive investigation into OV's death. The evidence includes:

- The Police Report of Death for the Coroner;
- Tasmanian Health Service (THS) Death Report to Coroner;
- Affidavit with respect to identity;
- Affidavit of the forensic pathologist Dr Christopher Lawrence;
- Affidavit of the forensic scientist Juliette Tria of Forensic Science Service Tasmania;
- Affidavit of Ms WR
- Affidavit of Mr EM;
- Affidavit of Ms Elise Hill;
- Affidavit of Dr Tu Quyen Mai;
- Affidavit of Ms Nikki Teders;
- Affidavit of Mr Andrew Healey;

- Affidavit of Mr Samuel Miller;
- Affidavit of Constable Scott Wilson;
- Records obtained from Ambulance Tasmania (AT);
- Medical records obtained from THS;
- Medical records obtained from Davey Street Medical Centre; and
- Report from the coronial medical consultant Dr Anthony Bell MB BS MD FRACP FCICM.

## **Background**

OV was just over 11 months old (date of birth 1 June 2021) and he resided with his mother, WR, and two older half siblings at the date of his death. His father, EM, did not live permanently with OV but he visited very frequently.

OV was a healthy young boy who had no illnesses or medical issues prior to 4 May 2022. The records of OV's general practitioner corroborate this and demonstrate he attended regularly for baby checks and immunisations. WR's THS records confirm OV's birth was normal and he was healthy when born. WR was admitted on 1 June 2021 and discharged home on 3 June 2021 at which time it was noted she was mobilising well, she was breastfeeding and had no concerns. The evidence confirms OV's were loving and attentive.

## **Circumstances Leading to Death**

On 4 May 2022 WR was at home with her three children and EM had been staying since 2 May 2022. WR got up early with her two older children and got them ready for school. OV woke up at about 7:30 am and his mother gave him his milk and started getting ready for the day. WR woke EM and asked him to look after OV while she took the other two children to school. EM got up and started playing with OV in the living room and WR left to take the older two children to the local primary school.

EM says he was sitting at the dining table and OV was playing at his feet with "some stuff on the floor". EM was supervising OV and took from him a black pen lid and a necklace because EM thought these items could be dangerous.

At approximately 9:05 am<sup>1</sup> EM says he heard WR drive into the driveway after returning from dropping her elder two children at school. EM says he told OV "Mum was home and dad was going to go for a quick smoke." He got to the baby gate which blocks the stairwell of the house which was about 1.5 m from where he was seated when he heard OV making a

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<sup>1</sup> This time is incorrect given the emergency call was made to 000 at 8:58 AM. See below at page 4. Nothing turns on this time difference.

choking sound. He immediately ran over to OV and tried to take whatever was in his mouth out. He could not locate anything so he picked OV up and rolled him over and patted him on the back to try and dislodge whatever was in his mouth. That did not work so he called out to WR. On her arrival in the living room she observed EM holding OV face down whilst slapping his back. She tried to put her fingers down his throat because it was clear to her he was choking on something. EM also tried to put one of his fingers in OV's mouth in an effort to dislodge whatever it was.

WR ran outside with OV seeking assistance from neighbours. An ambulance was called and Mr Miller, who lives across the road, arrived, and commenced cardiopulmonary resuscitation (CPR) on OV while being instructed by ambulance personnel who remained on the phone. An ambulance arrived and officers took over CPR. Another ambulance crew arrived after which OV's parents were advised they had retrieved a screw from OV's throat. OV and WR were transported to the Royal Hobart Hospital (RHH) in an ambulance while EM followed behind in another ambulance.

OV was treated in the emergency department. On examination his Glasgow Coma Scale Score<sup>2</sup> was 3 and there were initially no movements, but it was later noted he had respiratory effort. He was admitted to the paediatric neonatal intensive care unit with the aim of stabilising his condition and assessing his recovery over the next few days. It was determined by way of testing that OV had suffered a severe ischaemic brain injury and he died on 7 May 2022.

### **Investigation**

Dr Christopher Lawrence conducted a post-mortem examination on 9 May 2022.

Dr Lawrence noted OV suffered a respiratory arrest and attempted resuscitation resulted in the removal, by Magill's forceps, of a 2 cm metal screw from the larynx. Resuscitation was attempted and a heartbeat was regained however unfortunately OV died on 7 May 2022 due to cerebral oedema which occurred as a result of hypoxic brain damage.<sup>3</sup> Dr Lawrence accepts the report by ambulance officers that a screw was found in the larynx and he says

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<sup>2</sup> The Glasgow Coma Scale (GCS) is a clinical scale used to measure a person's level of consciousness after a brain injury. The GCS assesses a person based on their ability to perform eye movements, speak, and move their body. These three elements make up the scale; that is eye, verbal, and motor. A person's GCS score can range from 3 (completely unresponsive) to 15 (responsive). The score is used to guide immediate medical care after a brain injury and also to monitor hospitalised patients and track their level of consciousness.

<sup>3</sup> Cerebral hypoxia occurs when a person's brain receives insufficient oxygen.

this was the cause of the hypoxic damage to the brain. He says there was no residual injury and there were no other traumatic injuries.

The records of AT reveal a call was received to attend OV's home at 8:58 am on 4 May 2022, the case was categorised as the most urgent of cases and an ambulance was dispatched immediately. An ambulance was at the scene at 9:04 am and with OV at 9:05 am. After being treated OV was transported to the RHH arriving at 10:17 am. An intensive care paramedic arrived at 9:20 am and directed that OV be transferred into the ambulance at which time that officer took over his care. At 9:22 am OV's airway was visualised under laryngoscopy and a screw was located under the epiglottis<sup>4</sup> and it was removed. OV's GCS score while in the care of AT personnel did not rise above 3.

Ms Teders and Mr Healey were the first paramedics on the scene. On their arrival they describe OV as blue and cyanosed<sup>5</sup> and Ms Teders noticed he was making agonal respirations<sup>6</sup> and had liquid coming out of his airway and nose. Mr Healey picked up OV and put him over his knee and performed five back blows after which OV's airway was inspected however no foreign body, which was the cause of the choking, was found. He therefore laid OV down and commenced CPR. Ms Teders checked OV's airway with a laryngoscope but she could not see anything apart from a lot of blood and vomit in his airway. She asked Mr Healey for suction but they had to start CPR as OV was not breathing and they could not feel a pulse. At the same time as performing CPR they were trying to clear his airway. They inserted an OPA<sup>7</sup> to assist breathing and they commenced ventilating which was successful and they continued suctioning. One of them was performing compressions and the other ventilations and they swapped every two minutes or thereabouts.

They reported a cardiac arrest was in process and they continued with CPR. Mr Healey replaced the OPA with an advanced airway device (igel) but he was unable to insert this so the OPA was put back in. There was a rise and fall in OV's chest.

Ms Hill, and intensive care paramedic, arrived and directed Ms Teders and Mr Healey to take OV straight to the ambulance and place him on a stretcher after which Ms Hill took over

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<sup>4</sup> The epiglottis is a flap of tissue that sits beneath the tongue at the back of the throat. Its main function is to close over the windpipe or trachea while a person is eating to prevent food entering the airway.

<sup>5</sup> A bluish purple hue to the skin.

<sup>6</sup> Is an abnormal pattern of breathing and brainstem reflex characterized by gasping and laboured breathing. Possible causes include cerebral ischemia, extreme hypoxia (inadequate oxygen supply to tissue), or even anoxia (total depletion of oxygen).

<sup>7</sup> An oropharyngeal airway (also known as an OPA) is a medical device called an airway adjunct which is used in airway management to maintain or open a patient's airway. It does this by preventing the tongue from covering the epiglottis, which could prevent the person from breathing. When a person becomes unconscious, the muscles in their jaw relax and allow the tongue to obstruct the airway.

OV's primary care. Once inside the ambulance Ms Hill says the primary crew continued with the CPR and she noted a GCS of 3, OV was breathless and had no pulse and a rhythm in asystole<sup>8</sup>. Ms Hill then used the laryngoscope to inspect the airway where she observed vomit, a watery fluid tinged with blood and a metal screw approximately 2 cm in length with a head measuring approximately 5 mm sitting superiorly to the epiglottis. She used the Magill's forceps and continued laryngoscopy to take hold of the screw and remove it. She also used suction to clear the airway of secretions. Immediately after removal of the screw Ms Hill administered oxygenation while CPR was continued. She inserted an igel and at about this time a third ambulance crew arrived on the scene.

A member of the third crew successfully placed an intraosseous needle and administered the first dose of adrenaline in accordance with clinical practice guidelines. Ms Hill removed the igel due to a concern with respect to potential airway swelling. She inserted an endotracheal tube and reattached ventilation equipment. This was successfully put in place and that was confirmed by both Ms Hill and another officer. At the next pulse check it was noted OV's colour had improved significantly and he had a pulse of approximately 40 bpm. It was decided this was too slow and external compressions were continued for two more minutes. At the next pulse check he had a carotid pulse and a heart rate of 104 but low blood pressure. Shortly after this the aeromedical doctor and flight intensive care paramedic arrived. Further doses of adrenaline were administered in line with clinical practice guidelines to support perfusion. As OV was now more stable he was immediately transported to hospital. On route to hospital a second intraosseous needle was inserted and an adrenaline infusion was commenced with good effect. OV remained unconscious but towards the end of the journey to hospital he did start to take very occasional spontaneous breaths. His oxygenation had improved significantly and his heart rate and blood pressure were stable. The hospital team then took over OV's care.

The aeromedical doctor was Dr Mai. She is employed by AT as a prehospital and retrieval consultant. She received notification of this emergency at 9:07 am and arrived at 9:44 am by road as a decision was made there would be no time advantage to take the helicopter. New Norfolk and Brighton are localities they usually attend by road. She made a number of observations including that OV was in the back of the ambulance with two intensive care paramedics, he was intubated and hand ventilated by one of the intensive care paramedics while the other intensive care paramedic was managing the infusion lines. OV appeared pale, cyanosed, deand floppy. The decision was made to transfer him to the RHH. Dr Mai travelled to the hospital in the ambulance with OV and the treating team. She was advised by Ms Hill that she removed the screw with a pair of Magill forceps after visualising it on

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<sup>8</sup> No heartbeat.

laryngoscopy. Dr Mai recalls seeing the screw which was dark in colour and 1.5 to 2 cm long with a small Phillips head. She did not think it was very big to be a choking hazard but says it must have lodged at an awkward angle.

I note a debrief was held after this incident which was conducted by Ms Hill as it was recognised by the operations supervisor, James Scott, that she had experience in debriefs from previously being an operations supervisor and because she had the clinical support knowledge to contribute to the debrief. Ms Tedders, Mr Healey, Dr Mai, Andrew Summers who was an intensive care flight paramedic who attended the scene with Dr Mai, and the third AT crew to attend the scene which consisted of Cameron Banks and Simon Mouchet, all attended the debrief with Ms Hill. It was conducted on the basis that it was an opportunity to discuss what had occurred and to have any questions answered. Each participant spoke and each outlined their role in the case and it was considered the case had gone as well as it could have given the circumstances.

Although Dr Mai did not attend initially and did not see OV's condition she says the cause "is presumed to be reversible" and "OV's outcome could have been different." She says AT has a rule that no crewmember is allowed to intubate a child under the age of 12 months unless this procedure is undertaken by a doctor. Having said this she says Ms Hill's decision to perform this procedure was the correct decision. I agree. OV had no chance of survival unless this procedure was performed and by the time a doctor arrived it would have been far too late. She says if the initial crew had advanced airway skills or more airway training the outcome could have been different. She believes at the time they arrived OV was alive, from a reversible cause and he died and therefore in her view this reflects potential inexperience of the road crew and may reflect gaps in airway training skills maintenance. She says airway disasters are few and far between and it is hard to have on-the-job training or exposure but she is unaware of how this training is provided to ambulance personnel. She says only herself and one other doctor are specialist anaesthetists and airway trained and she does not believe they are asked to provide any education to AT personnel. She says AT crews should consist of a senior and junior paramedic with the senior officer having at least 5 years' experience. She says AT crews can call for backup from another crew at any time and can call an intensive care paramedic or doctor for advice as there is a retrieval consultant on call 24 hours a day 7 days a week. She confirms she spoke to Ms Hill prior to her attendance at OV's address about this case and she says she, when on duty, is available to speak to the attending crew if required but she notes she does not receive many calls.

Dr Mai also says there is a tasking matrix for the helicopter crew doctor and flight paramedic team (HEMS team) which allows automatic deployment of the critical care team by helicopter or by road. She does not know whether there is any wider education given to

road crews regarding advice upon request. She thinks there is a divide between the road crews and the aeromedical unit which she thinks may influence the decision to call for assistance or not to call. Having said all that she confirms this was a stressful job for the entire team that attended and they all worked well, and professionally together and they did their best under trying circumstances.

A response to the comments of Dr Mai was sought from both Ms Hill and AT. First Ms Hill says there are AT clinical practice guidelines for paramedics and intensive care paramedics. One of them is CPG P0301 titled Endotracheal Intubation (paediatric) and one of the contraindications for intubation in that guideline is a patient who is less than 1 years old. The reason for this is the size of the airway in small infants and other methods can be used until arrival at hospital. Given OV was in excess of 11 months of age she made the decision to intubate him. This decision was based on a few factors; first she is qualified to intubate children and adults, she discussed the decision with her colleague, it was considered safe to perform, OV was in a critical condition and the procedure would secure his airway. I note it was conducted successfully.

As an intensive care paramedic she does not have specific knowledge of the tasking matrix for the HEMS team. She understands its deployment is at the discretion of the Communications Centre and the team was deployed in this case after Ms Hill requested they attend. She says in her experience intensive care paramedics and paramedics call the HEMS team when they feel the team may be able to contribute something to improve the patient's condition. She provides an example where a patient has suffered a significant head injury and the HEMS doctor can perform rapid sequence induction intubation which a paramedic does not have the skill to perform. She is of the view that she will call that team if she believes the doctor can improve the patient's condition. On this occasion she did call the HEMS team and she spoke to Dr Mai. She sought advice regarding the performance of a potential cricothyroidotomy<sup>9</sup> if she was unsuccessful in removing the obstruction as she needed to ventilate OV.

AT also confirmed Ms Hill was qualified to intubate OV and considered it was safe and necessary to do so in order to provide treatment. A copy of the relevant guideline was provided. AT supports Ms Hill's decision to intubate OV. AT also confirmed Ms Hill was unlikely to be able to understand the tasking matrix for the HEMS team as she is not responsible for determining when they are deployed. That responsibility rests with the State

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<sup>9</sup> This is a procedure whereby an incision is made through the skin and cricothyroid membrane to establish an airway during certain life-threatening situations, such as airway obstruction by a foreign body, angioedema, or massive facial trauma. A cricothyroidotomy is nearly always performed as a last resort in cases where other means of tracheal intubation are impossible or impractical.

Communications Centre Deployment Supervisor who is supported by the retrieval consultant in relation to complex clinical decisions. Any crew can request further support including a HEMS team once they assess the scene which is what Ms Hill did in this case.

AT advised it did not have a protocol that guides the composition of a road crew however a number of principles guide the rostering of paramedics and they include:

- Paramedics completing the graduate year, transitioning from another service or conducting return to work, are rostered to work with a registered paramedic who holds an independent scope of practice issued by AT;
- Paramedics who hold an intensive care scope of practice are typically not rostered together and instead they are distributed across the metropolitan area to optimise an intensive care response required and to improve the level of clinical leadership and oversight within the shift;
- A clinical support officer and operational supervisor is rostered during the shift to optimise clinical leadership and oversight within the region should a major or complex incident occur;
- A retrieval consultant that is a doctor is available for medical consultations and advice should that be required by a paramedic;
- At least one medical retrieval team which consists of a retrieval consultant and an intensive care flight paramedic and one fixed wing retrieval team which consists of a registrar and an intensive care flight paramedic is available to respond to an emergency anywhere in Tasmania; and
- In this case there were 2 paramedics with an intensive care paramedic involved in OV's treatment prior to the attendance of the HEMS team. There was also a third team who arrived before the HEMS team.

As to training there are two different educational programs for the management of a foreign body airway obstruction; one for registered paramedics and the other for volunteer ambulance officers. The training for volunteer ambulance officers is not relevant in this case as it did not involve the attendance of a volunteer officer. The training package for registered paramedics is completed on commencement with AT as part of the induction process. It also forms part of AT's essential skills maintenance program which was last provided in the 2019/20 financial year but suspended due to the COVID-19 pandemic. The delivery of this program recommenced this year.

Endotracheal intubation is a clinical skill performed by paramedics who hold an intensive care paramedic scope of practice. Initial training consists of theoretical learning, practical exercises and simulated cases on training manikins including specialised airway manikins and



a week-long theatre placement alongside an anaesthetist. The training is delivered by AT's intensive care paramedic educators whose core role is program delivery which includes the intensive care paramedic course. AT's retrieval consultants have been included in teaching previously although there is no requirement for their involvement in the initial learning process.

Clinical skills such as endotracheal intubation must be maintained by an AHPRA<sup>10</sup> registered paramedic by each clinician undertaking 30 hours of continuing professional development every 12 months. AT provides an ongoing clinical support officer led essential skills maintenance program that is conducted to ensure competency but as noted above this was paused in 2019/2020 due to the COVID-19 pandemic. It will recommence in August of this year. In addition retraining is offered on an as needed basis to all intensive care paramedics state-wide. In addition a clinical support officer may identify knowledge and/or skill gaps on the review of a case and provide follow-up which includes refresher training. Alternatively an intensive care paramedic may request support from a clinical support officer at any time to undertake refresher education.

Foreign body airway obstruction is a core component of basic airway management and includes the use of a laryngoscope and Magill's forceps which are tools used to manually manipulate an airway to locate and remove a foreign body. Training is conducted using airway manikins with obstructions made from small objects being introduced into a simulated airway and step through drills demonstrated.

Because of the concerns raised by Dr Mai, I organised for the coronial medical consultant Dr Anthony Bell to review all of the evidence in this case. He reviewed all of that material and provided some background information which is as follows. Tracheobronchial foreign body aspiration (FBA) is a potentially life-threatening event because it can block respiration by obstructing the airway, thereby impairing oxygenation and ventilation. FBA in children may be suspected on the basis of a choking episode if such an episode is witnessed by an adult or remembered by the child. In contrast, the clinical presentation of an unwitnessed FBA may be subtle, and diagnosis requires careful review of the history, clinical assessment, and the judicious use of radiography and bronchoscopy.

The majority of aspirated foreign bodies (FBs) in children are located in the bronchi. Laryngeal and tracheal FBs are less common. Although most aspirated FBs are located in the bronchi, large, bulky FBs (e.g. food) or those with sharp, irregular edges may become lodged in the larynx. This is particularly common in infants younger than one year. Tracheal narrowing or weak respiratory effort may predispose an infant to exposure to a tracheal FB.

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<sup>10</sup> Australian Health Practitioner Regulation Agency.

Compared with bronchial FBs, laryngotracheal FBs are associated with increased morbidity and mortality.

With involvement of the layperson, the crucial time between a life-threatening illness or injury and the institution of emergency medical management can be reduced. Specific examples of the important role of bystanders include the following:

- In a systematic review of four studies performed during the 2019 update of the American Heart Association paediatric basic life support guidelines, dispatcher-assisted cardiopulmonary resuscitation (DA-CPR) was associated with a significant improvement in the rates of bystander CPR and one-month post-cardiopulmonary arrest survival with DA-CPR. The authors of the update recommended that emergency medical dispatch centres offer DA-CPR for presumed paediatric cardiopulmonary arrest, especially when no bystander CPR is in progress.
- Multiple studies have demonstrated the importance of bystander involvement in witnessed cardiac arrest. With the introduction of automated external defibrillators, the role of the layperson has expanded beyond CPR into the management of ventricular fibrillation.
- Bystander intervention has been effective for removing a foreign body from the airway. In a study that compared bystander intervention with emergency services intervention for the management of 103 children (aged 0 to 15 years) with foreign bodies in the airway, the airways were cleared before emergency services arrived in 85 percent of the children, either by a bystander (47 percent) or the child (38 percent). These findings support the American Academy of Paediatrics (AAP) recommendation that new parents/primary caregivers and other laypersons who care for children (e.g. teachers, day care providers) be trained in CPR.

In this case the paramedics performed as a team and gave sound care. Vomiting and blood complicated the airway visualisation making finding the screw difficult. The paramedics were unable to intubate OV and therefore reverted to using bag valve mask ventilation which appeared to be efficient based on chest movement.

The intensive care paramedic (Ms Hill) with more developed airway skills positioned the patient in the ambulance to allow an easier position to check the airway and intubate. This decision was the only possible method available to save the patient's life in this critical situation.

Dr Bell notes Dr Mai says “... *at the time the first crew arrived the patient was alive, from a reversible cause and the patient died, and this reflects in my opinion in the potential inexperience of the road crew...*” When the paramedics arrived the patient was critically ill as shown by agonal breathing and then found to be in asystole. Agonal breathing can, in Dr Bell’s long experience, continue for 10 to 15 minutes after a person dies. He thinks the likelihood in this case is OV was already deceased when paramedics arrived. Accordingly, he concludes that Dr Mai’s suggestion OV was alive is a moot point.

Dr Bell says the sooner an airway is re-established the better the chances of survival. In this case the call made to AT took place at 8:58 am and Ms Hill was not able to remove the screw until 2 minutes after her arrival at 9:20 am. Accordingly OV’s airway was obstructed for a minimum of 24 minutes and in those circumstances the chances of him making a full recovery were almost non-existent. Dr Bell concludes there are no issues with the care provided by AT personnel.

Dr Mai has raised some interesting questions. However I am satisfied that Ms Hill and AT have provided satisfactory answers to all those questions. In my view the treatment of OV by Ms Hill cannot be faulted. She carried out her duties diligently and professionally on a critically ill young child in very trying circumstances. I am of also of the view the AT officers who were first on the scene did their best in very trying circumstances. Locating the screw proved difficult because of the presence of vomit and blood and the ventilation they were able to provide to OV appeared to be effective as there was chest movement observed.

As to the screw, neither WR nor EM know exactly where it came from. They had tried to assemble a child gate at the top of the stairs but the screw did not fit so WR put it away. She suspects the screw may have come from that gate but she is not sure. EM also thinks that might be the source of the screw however in a recent conversation with Senior Constable Barnes on 4 July 2023 he advised that five months after OV’s passing he noticed a screw missing out of the wind up blinds in the lounge/dining area near to where OV was when he took the necklace from him. They had asked somebody to replace the blinds and they had measured up but had not returned. Again that is also a possibility but given these are mere possibilities rather than probabilities I can make no finding about the source of the screw.

Finally there is absolutely no evidence that OV’s parents were in any way responsible for his passing. This was a very unfortunate and tragic accident.

## **Comments and Recommendations**

The circumstances of OV's death are not such as to require me to make any comments or recommendations pursuant to Section 28 of the *Coroners Act 1995*.

I extend my appreciation to Senior Constable Alisha Barnes for her investigation.

I convey my sincere condolences to the family and loved ones of OV.

Dated: 14 November 2023 at Hobart in the State of Tasmania.

**Robert Webster**  
**Coroner**

