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# IN THE CORONER'S COURT FOR NORTHERN IRELAND

# IN THE MATTER OF AN INQUEST TOUCHING UPON THE DEATH OF JOHN ALEXANDER McHUGH

Mr David Reid BL (instructed by Ms Sophie Laverty, Coroners Service for Northern Ireland) on behalf of the Coroner Mr Sean Smyth BL (instructed by Ms Maeve Holland, Directorate of Legal Services) on behalf of the Western Health and Social Care Trust (WHSCT) Ms Catriona Forde (P J O'Hare Solicitors) on behalf of the Next of Kin

### **BEFORE CORONER DOUGAN**

### Introduction

[1] The inquest proceeded in Laganside Courts on 23 January 2023, and on 2, 3, 4 and 13 September 2024. During the inquest, I received evidence from a number of witnesses, and I considered a number of statements admitted under Rule 17, together with voluminous hospital notes and records. It is not possible to recite all the evidence, although all the evidence has been considered before arriving at these findings.

# Evidence

[2] The deceased, John Alexander McHugh of 16a Lurganboy Road, Castlederg, County Tyrone, died on 3 August 2019 in Altnagelvin Hospital.

[3] Mr Sean McHugh, son of the deceased, gave evidence to the inquest, which was admitted by way of Rule 17. Mr McHugh told the inquest that his father was born and raised in Castlederg, County Tyrone. He was the second youngest of six children. In 1972, aged 19, he moved to London and worked for London Transport for 40 years. The deceased married in 1980 and had three children, Sean, Kirsty and Kathryn. Mr McHugh described how, apart from his family, his father had two great loves, sport and music. He played football, squash and golf and supported Manchester United and Arsenal, as well as Tyrone.

[4] Mr McHugh recounted how his father had a great personality, and that he was fun to be with. After he retired, he spent a number of years travelling with his partner Ms Diana Swatosh. They spent winters in Florida and summers in London and Ireland.

[5] In 2018 the deceased decided to move home to Castlederg, and he renovated his new home with vigour. In June 2019, he discovered a small lump under his tongue, and he was diagnosed with squamous cell carcinoma of left side of tongue. Mr McHugh stated that his father was a fit and healthy man up to that point.

[6] On 29 July 2019, the deceased was admitted to Altnagelvin Hospital for surgery. Mr McHugh described how his father was upbeat and positive. Following the surgery, Ms Swatosh provided the family with regular updates, explaining that the doctors were happy with his progress. On 2 August 2019, Mr McHugh received a photo from Ms Swatosh of his father laughing at a get-well card, commenting that the doctor was pleased with his progress as he was only three days out from surgery. Later that night the deceased passed away.

[7] Mr McHugh detailed how the deceased's loss devasted his family and friends. He recounted how his father was his best friend and advisor and how he has found it exceedingly difficult to come to terms with his death. He revealed that there was some comfort in that fact that the last months of his life were happy ones, spent with family and friends in the country that he loved. Mr McHugh outlined that he and his family have many unanswered questions about what happened on the morning of 3 August 2019. They want to be reassured that measures are put in place to ensure the safety of patients in the future.

[8] Ms Diana Swatosh, the deceased's partner of four and a half years, gave evidence to the inquest. She told the inquest that she attended the hospital with the deceased on 29 July 2019 when he was admitted for surgery. At 09:00 hours on 30 July 2019, the deceased was taken to theatre. At 16:00 hours she received a call informing her that the surgery went well with no complications. He then spent two days in the High Dependency Unit (HDU) in Altnagelvin Hospital.

[9] On 31 July 2019, Ms Swatosh spoke with one of the deceased's consultants and he referred to the surgery as a "boring surgery." The deceased was not speaking but was communicating by writing. He was drinking water and sitting in his chair and his vital signs were good.

[10] At 13:00 hours on 1 August 2019, Ms Swatosh visited the deceased and noticed that his tracheostomy tube had been removed. The deceased covered the hole to speak, and she stated that he could be easily understood. She described how he had a lot of congestion, and that he was being treated for a chest infection. He walked the corridor and was in better spirits.

[11] At 14:00 hours on 2 August 2019, Ms Swatosh arrived to visit the deceased, and she noted that there was much more swelling under the deceased's chin area than there was the day before. She stated that "it was evidently swollen", and that she was surprised and concerned. She believed she mentioned this to Mr Smith, one of the deceased's consultants, and he replied that it was normal and did not recheck the area and showed no further interest. Ms Swatosh told the inquest that she did not see the swelling decrease from this time onwards.

[12] Ms Swatosh described to the inquest how the deceased could not swallow little sips of water, and when he tried, it dribbled out of his mouth. His congestion was clearing as he was on a new antibiotic, he was speaking well, able to walk down the corridor and wash in the bathroom. Ms Swatosh felt that he was back to his old self. Ms Swatosh left and at 20:15 hours she received a text message from the deceased, "many thanks for the second card, I love you more each day x."

[13] At 04:00 hours on 3 August 2019, Ms Swatosh received a telephone call from the hospital, informing her that the deceased was having difficulty breathing and she was asked to attend the hospital. She arrived at 05:15 hours and was informed that the deceased had passed away. Mr Stenhouse, the deceased's consultant, told Ms Swatosh that they did not know what had happened and could not explain it. A doctor from Intensive Care Unit (ICU) informed her that they had tried to intubate the deceased but could not get the tube down his throat and they then tried using the tracheal hole but could not get it in. They then commenced CPR, which was unsuccessful.

[14] Ms Swatosh acknowledged the enormous loss felt by the deceased's passing, "We were active people, and we did so many different things throughout that time. Not only did he spend the winters with me in Florida, but we were also back and forth several times throughout the year, going to national parks, hiking, playing pickleball ball and golf." She stated, "we were really busy people, having a good time."

[15] Mrs Sylvia McHugh, sister-in-law of the deceased, gave evidence to the inquest, which was admitted by way of Rule 17. At 05:25 hours on 3 August 2019, Ms Swatosh telephoned her explaining that the deceased had difficulty breathing and that they needed to attend the hospital immediately. She contacted the deceased's brother Maoliosa, and they attended the hospital together. When they arrived, a nurse informed them that the deceased had woken up, had difficulty breathing and despite CPR being conducted for 45 minutes, he sadly passed away. When the deceased's brother Hilary arrived, they sat with the deceased and prayed.

[16] Mr John Stenhouse, Consultant Oral and Maxillofacial Surgeon, gave evidence to the inquest. He told the inquest that the deceased was referred on 21 June 2019 and was reviewed by him as a new suspect cancer case on 4 July 2019. The deceased described having a painful lesion on the left side, underneath his tongue. He felt that it had been present for six weeks and that it was gradually increasing in size. He had stopped smoking about 35 years ago and prior to this he had smoked twenty cigarettes a day for 14 years.

[17] Mr Stenhouse explained to the inquest that his examination showed no lymph nodes palpable in the deceased's neck. On the left floor of his mouth, the deceased had a 5mm raised lesion with a 1cm area of altered lining of the mouth surrounding it. Mr Stenhouse felt this could be a squamous cell carcinoma (mouth cancer) of the floor of the mouth. The deceased underwent a biopsy of the lesion, MRI scan and CT scan.

[18] On 17 July 2019, the deceased was assessed by Mr Ged Smith, Consultant Oral and Maxillofacial Surgeon and Mr Stenhouse's colleague, at the Head and Neck clinic. Pathology had confirmed a squamous cell carcinoma. On the MRI scan, the primary tumour was visualised, and Mr Stenhouse told the inquest that it measured 20mm. There was no discernible spread to the lymph glands in the neck.

[19] On 24 July 2019, Mr Stenhouse again reviewed the deceased. The plan was for a tracheostomy, left neck dissection, extraction of a lower left molar tooth, resection of the tumour and reconstruction with a left radial forearm free flap. Mr Stenhouse explained that the aim was to remove the cancerous tissue plus a centimetre of normal looking tissue from around it.

[20] Mr Stenhouse explained that the deceased's treatment plan was ratified at the Regional Multidisciplinary Team (MDT) meeting on 29 July 2019, which was held in the Royal Victoria Hospital. He explained that the MDT was made up of many disciplines from Trusts throughout Northern Ireland. The update report recorded the MDM plan as "T1N1(M0) squamous cell carcinoma left floor of mouth for resection Tuesday 30<sup>th</sup> July 2019." No minutes or notes of the meeting exist.

[21] On 29 July 2019, the deceased was admitted to Ward 8. Mr Stenhouse told the inquest that the intended benefit of the operation was to cure the cancer.

[22] On 30 July 2019, the deceased was taken to the operating theatre and anaesthesia was commenced at 09:10 hours. Mr Stenhouse told the inquest that the operation itself went "exceptionally well" and was completed at 14:45 hours. The deceased was then transferred to the HDU. Mr Stenhouse explained that the tissue extracted was sent to the pathology lab for testing and the histopathology report, dated 30 August 2019, recorded the dimensions of the tumour to be 8mm in length, 7mm in width and 2mm depth, and the resection size had a centimetre either side and that was what was taken out at the time of surgery. He stated that he and Mr Smith based the resection on the MRI scan and what they were seeing clinically at the time of surgery.

[23] The comments and opinions of Consultant Oral and Maxillofacial Surgeons, Mr Baldwin, and Mr Patel, who provided expert reports to the inquest, were put to Mr Stenhouse during evidence. Mr Baldwin and Mr Patel were of the opinion, that, in view of the size of the primary lesion, the patient's age and comorbidities, there were other surgical options available, which would have been less invasive and of a shorter duration. Mr Stenhouse replied that he and Mr Smith did not have the final pathology when planning treatment and their decision making was based on clinical examination of the deceased and the scanning. He opined that, at the time, they had initially a diagnostic biopsy suggesting the lesion was 30mm deep, then a scan suggesting a 20mm lesion, a T2 (meaning tumour size 20mm to 40mm), not T1 (0 or 1 mm to 20mm), which it proved to be. At the MDT meeting the staging was T1N1M0, M0 meaning metastasis, N1 meaning nodal status (lymph nodes in the neck), which, he stated, indicated the need for a neck dissection and resection. Mr Stenhouse stated that they wanted to also take malignant tissue from around the lesion, so they removed the lesion plus 12 mm and therefore achieved what they set out to do. He stood by the decision to conduct a neck dissection as they did it, "based on the thickness and size of the primary tumour."

[24] Mr Stenhouse was of the view that Mr Baldwin and Mr Patel's conclusions were based on hindsight, they were working on the final pathology, "and that is something that we didn't have until four weeks after the resection." He went on to state, "what we took away was the lesional tissue plus a centimetre and we wouldn't have been happy to leave the patient without reconstruction." Mr Stenhouse did agree that with the benefit of the pathology report, four weeks later, based on what was taken away, the surgery was more than what was required, as suggested by Mr Baldwin and Mr Patel. However, Mr Stenhouse went on to say, "I think I would still argue it, because given the defect that was created, we would still have to put a reconstruction in...there are two consultant surgeons looking at the defect - we make a decision at that time."

Mr Stenhouse did not agree with the suggestion of Mr Patel, that an [25] alternative surgery was a possibility, namely, a wide excision of the tumour to achieve histological clearance, without neck dissection and a delayed decision on neck treatment depending on histological findings and potentially bringing the patient back for further surgery. He retorted, "we had a guideline saying we should be doing a neck dissection (depth of 3mm or more), we had an MDT decision ratifying a neck dissection, and we had decided on a reconstruction at the time of surgery." He went on to explain, "I always say to the patients, 'what I aim for you is to be swallowing normally and talking on the phone so that everyone on that phone can, (a) understand you, and (b) know it's you.' And to get that kind of functional outcome, a reconstruction was the right thing to do in this case, and I would stand by that decision." He accepted that there was no detailed note of what exactly was discussed and agreed at the MDT. He stated that the surgery conducted was an appropriate one, and one which Mr Patel and Mr Baldwin suggested was an option. Mr Baldwin stated, "the surgical plan was a well-recognised approach, and the use of the temporary tracheostomy is also accepted practice although not necessarily universally used for small tumours."

[26] In August 2019, the Western Health and Social Care Trust requested the Royal College of Surgeons of England Invited Review Mechanism, to review the Trust's Oral and Maxillofacial Surgery Head and Neck Cancer Service. A review took place in November 2019, and an Invited Service Review (ISR) report was produced. Like Mr Patel and Mr Baldwin, the ISR report, also questioned the need for such extensive surgery, considering the ultimate histology of an 8mm tumour. Again, Mr Stenhouse expounded that the ISR report did the same thing as Mr Baldwin and Mr Patel, and worked backwards from the final pathology report, which was not available to Mr Smith and Mr Stenhouse until after the surgery.

[27] When questioned on whether a smaller operation may have prevented the deceased's death, as it would have been a shorter procedure, without the need for a tracheostomy, Mr Stenhouse told the inquest that he did not agree. He explained how the operation did not actually take very long, and if they had not performed a reconstruction, it may have knocked an hour off the time only. He stated that the tracheostomy "is a difficult one. If you were to say to me 'doing that operation today, would I have done a tracheostomy - no, I wouldn't have.' And it's why we took the tracheostomy out reasonably early because we didn't actually need the tracheostomy." In 2019, views were changing on the need for tracheostomy for a lot of this kind of work."

[28] The following day, 31 July 2019, the deceased was seen post operatively by Mr Smith. His observations were noted to be stable. Mr Stenhouse stated that the reconstructed flap was healthy, "pink, warm, soft" and at that stage it was decided, by Mr Smith, to take the drain off the forearm, to take the cuff down on the tracheostomy tube and to allow sips of sterile water. He was seen regularly that day and Mr Smith was happy with the deceased's progress.

[29] That afternoon, Mr Stenhouse reviewed the deceased, and he was also happy with the deceased's progress. The deceased was complaining of some discomfort on the left side of the reconstruction, and Mr Stenhouse prescribed him an anti-inflammatory. Mr Smith reviewed him later, and it was noted that the deceased had copious bloodied mucoid secretions. A note records "as per Mr Smith, not for decannulation until secretions lessen."

[30] Mr Stenhouse told the inquest that throughout the evening of 31 July 2019, the deceased was reviewed regularly. It was noted that there were multiple secretions present from the deceased's chest, at 20:00 hours a note records, "secretions +++." He was discussed with anaesthetics, and it was felt that there was irritation from the tracheostomy tube, and a sputum sample was sent, and it was advised that the deceased should continue antibiotics post operatively.

[31] Overnight into 1 August 2019, the secretions were described as "copious" and "thick, brown."

[32] Mr Stenhouse reviewed the deceased again at 08:45 hours on 1 August 2019. His observations were noted to be stable. His inflammatory markers were falling and although the notes recorded "continuing secretions ++", Mr Stenhouse told the inquest that he felt it was safe to remove the deceased's tracheostomy at this stage, as he appeared to be clearing his chest of the secretions, past the tube himself. The tracheostomy tube was removed by Mr Stenhouse. The deceased's oxygen saturation was noted to be 99.9% post removal. Mr Stenhouse's treatment plan noted that nasal specs could be used, drain two to be removed, "can have tea or coffee if wants", for SALT (speech and language therapy)/physio review and four hourly flap observations.

[33] Mr Stenhouse reviewed the deceased again at 16:00 hours and at this time, a neck drain was also removed, leaving a single neck drain in place. He stated that the deceased's observations were stable and that he was doing exceptionally well following removal of the tracheostomy tube. He stated that the deceased was producing good amounts of sputum from his chest; however, he was managing to cough it out, in his view, very satisfactorily.

[34] In relation to the removal of the neck drain, at this time, Mr Stenhouse explained that there was 20mls of drainage in 24 hours which was under the 30ml cut off and therefore perfectly fine to remove, and in any event a second drain remained in place.

[35] In relation to the removal of the tracheostomy tube at this time, Mr Stenhouse told the inquest that a tracheostomy is inserted for several reasons. Firstly, it keeps the airway out of the surgical field. The second reason is the potential for swelling post operatively, as in the first 48 hours, there is potential for oedema and swelling to take place around the surgical site. The third reason is that the patient may need to go back to theatre. Mr Stenhouse went on to highlight how they may cause problems, and that there is growing opinion that tracheostomy should be avoided, as it is not always required and that current guidelines suggest it should be removed as soon as possible.

[36] Mr Stenhouse declared that the deceased did exceptionally well for 44 hours after surgery, with no issues after removal of the tube. He explained that, in his view, he satisfied the Western Health and Social Care Trust's Guidance 'Guidance on caring for an adult patient with a tracheostomy within a hospital setting', specifically 'section 6: weaning and decannulation', which applied at the time. The guidance outlined, "for many patients, a tracheostomy will be a temporary measure therefore staff need to be aware of the methods used in weaning a patient from a tracheostomy through to its removal (decannulation). Clinical decisions must be made by the nursing, physiotherapy and medical staff in terms of the suitability and readiness of the patient to be weaned or decannulated." The guidance then set out a number of points which should be explored. Mr Stenhouse illustrated to the inquest, how, in his opinion, he satisfied the points and how decannulation was appropriate on the morning of 1 August 2019, without weaning; "can the patient maintain and

protect an upper airway?" He was coughing superbly well; he had a great cough reflex and was clearing his secretions beyond his mouth in most cases. "Are they free from ventilatory support?" Yes, he was free from the ventilator for 48 hours. "Are they haemodynamically stable?" Yes, the ITU digital record showed almost no variance in the observations. "Are they absent from fever or active infection?" No fever was recorded through the post op period, and he was able to clear his secretions into the mouth with a good cough. He did have a chest infection, but we were treating it actively. "Is the patient alert?" Yes, he was awake and alert, conversing. "Do they have a strong consistent cough?" Yes, we have already established that. "Do they have control of their saliva?" He was managing his own secretions well throughout this and saliva is produced at the rate of 750 to 1.5 litres a day. So, there was a lot of saliva being managed quite happily at this stage. "And are there any further planned procedures?" No, at this stage we were very happy that surgically everything was progressing very well. "Is this patient causing us concern?" No, he was doing well, he was getting better, he was improving. And again, we come back to the fact that the tracheostomy tube is a potential source of trouble for us. If the tube becomes dislodged or displaced the airway is gone. So, my question wouldn't be why did I take the tube out, it would be why wouldn't I take the tube out. All the criteria were met, and he did exceptionally well after removal of the tube." Mr Stenhouse pointed out that chest x-rays were taken on 30 July 2019 and 1 August 2019 and by 1 August the deceased's lungs were largely clear, also highlighting improvement. Mr Stenhouse emphasised that going by the deceased's clinical notes, x-rays and comments and decisions made by ICU consultants the Trust's guidance was explored and adhered to in relation to the removal of the tracheostomy tube.

[37] In relation to the suggestion that there may have been the potential for weaning of the tracheostomy, as recommended in the Trust guidance, Mr Stenhouse replied that weaning means to change the tube to a smaller tube, and he stated that that process has a risk. He explained that the deceased was in intensive care with one-to-one nursing and that decannulation is a trial and if any patient struggled to breathe or saturations fall, a tube could be inserted again without difficulty and that is the process they used for 12 years prior to the deceased's death, rather than the weaning process, despite the Trust Guidance in place. He agreed that decannulation decisions were made by the individual consultants at the time, him and Mr Smith and that, according to the Guidance, decisions should have involved SALT as well as nursing and physiotherapy and medical staff. He stated that nursing staff were present and thinks he did discuss it with an anaesthetist.

[38] Mr Baldwin and Mr Patel took the view that the tracheostomy tube was removed too early and that it may have been best to leave it in until all drains had been removed, to ensure no further neck swelling after drain removal. In their view, there were clear issues with chest secretions, as recorded in the deceased's medical notes and the removal appeared to contradict the Trust Guidance. This was put to Mr Stenhouse for comment, and he replied that the tracheostomy tube was removed because it was not being used for the purpose it was put in for, and that the deceased was coping with secretions and coughing past the tube. He stated that whilst the tube was removed, the hole was left open as a safety net. He opined, "Did I remove it too early? I don't know. Would it have been removed by the Friday night (2<sup>nd</sup> August) in any case? Yes, it would. Because by the Friday morning, the secretions were slowing down, he was looking much better, everything was looking better, and it would have been taken out Friday morning if not Thursday morning."

[39] When asked, in his opinion, had the tracheostomy tube remained in place during the deceased's post operative care, would the outcome have been any different, Mr Stenhouse replied that he could not say, but he did confirm that he would not have left a size 8 cuff tracheostomy tube in until Friday 2 or Saturday 3 August 2019. He stated, "Again, it comes back to why we would leave a tube in that is achieving nothing for the patient on the off chance that something totally unexpected, unexplained and catastrophic would happen."

[40] Mr Stenhouse told the inquest that following the establishment of the Task and Finish Group, a new tracheostomy policy was written, which he stated was very robust and far more in depth than the old guidance. The new policy states that all patients with a tracheostomy tube in place will undergo a weaning process prior to decannulation and it sets out two separate weaning guides - one for a short-term and long-term tracheostomy tubes and a specific weaning pathway for head and neck surgical patients prior to decannulation. Therefore, weaning must now take place, and it must be a multi-disciplinary approach.

[41] In relation to a neck drain being removed on 1 August 2019, just after the tracheostomy tube was removed, Mr Patel's opinion, was put to Mr Stenhouse. Mr Patel opined that you should not remove the tracheostomy tube before you remove any of the suction drains. Mr Stenhouse commented, "the drains were static by the time they came out, there was very little being produced. They were taken out appropriately." He went on to say, "The first drain was removed, when at 20mls in 24 hours, which is perfectly acceptable. Again, we would never remove two drains at once because there's no back-up for the first drain being removed. So, I think in relation to the second drain, there was actually no drainage in the 24 hours up to its removal, so there would be no reason to keep them in. Again, anything you leave in longer than you need is a source of infection."

[42] At approximately 16:00 hours on 1 August 2019, the deceased was assessed by Ms Sheena Furey, Speech and Language Therapist, who noted that the deceased was coughing following swallowing liquids. She advised that he be restricted from free fluids, which was recommended by Mr Stenhouse, to sterile water only orally with advice on swallow manoeuvres provided.

[43] Mr Stenhouse was asked how he reconciled his assessment of the deceased at 08:45 hours, when he was seen to be managing oral secretions and consequently his tracheostomy was removed, to Ms Furey's assessment at 16:00 hours when the deceased was having difficulty swallowing sips of water. Mr Stenhouse told the inquest that the deceased was managing his saliva and "the secretions were going

down somewhere", as they were not coming from his mouth resulting in a wet top. He agreed that both he and Mr Smith were encouraging the oral intake of water, although his plan at 08:45 hours stated, "can have tea or coffee if wants" and on both occasions were effectively overruled by Ms Furey, who recorded clinical signs of aspiration.

[44] In relation to the comments from Mr Baldwin and Mr Patel on whether oral intake of sterile water was commenced at the appropriate time, and the impact on the deceased coughing with severe distress, Mr Stenhouse explained that coughing can be a sign that there is aspiration going on, but aspirating small volumes of sterile water, "clinically doesn't seem to be of any great significance."

[45] On the morning of 2 August 2019, the deceased was assessed by Mr Smith. His oxygen saturation was found to have fallen to 92% and chest physiotherapy was recommended, and his antibiotic was changed to a more potent and broad-spectrum antibiotic. At that time, the deceased was advised, by Mr Smith, to take free fluids.

[46] When reviewed again at 13:30 hours, by Ms Furey, it was felt the deceased was coughing following swallowing fluids and she again recommended that he be restricted to sterile water only. He was assessed by Mr Smith later in the afternoon when his remaining drain was removed, and Mr Smith advised that the deceased should continue with oxygen therapy, regular chest physiotherapy and free fluids, despite the advice given by Ms Fuery earlier that day.

[47] During the 2 August 2019, the deceased had over five interactions with medical staff including, Mr Smith, SALT, a dietician and physiotherapist. Mr Stenhouse confirmed that flap monitoring was conducted regularly and at midnight on 3 August 2019, and it was observed there were no changes. This involves physically checking in the mouth with the use of light and fingers.

[48] On the night of 2 August 2019, it was noted that the deceased was complaining of mild pain and no sleep. Zopiclone was prescribed by Dr Toner at approximately 00:30 hours. He was still not sleeping at 01:30 hours, and he denied he was in pain but was having strange dreams. He was still awake at 03:00 hours and moving about the bed and had no complaints. Mr Stenhouse stated that, according to the notes, during that period the deceased did not have any difficulty talking or obvious deterioration.

[49] At 03:45 hours on 3 August 2019, Mr Stenhouse was called to attend the deceased. When he arrived, at 04:10 hours, the deceased was undergoing CPR and had been intubated by the surgical tracheostomy wound. The decision was taken to stop the resuscitation attempt by the team which included Dr Dripps, Consultant Anaesthetist and Mr Stenhouse.

[50] Mr Stenhouse was informed that, prior to his arrest, the deceased had complained of difficulty breathing, with rapidly dropped oxygen saturation. Intubation by his oral cavity had not been possible due to large amounts of swelling

of the tongue and throat. He had, therefore, been intubated via the tracheostomy site.

[51] Mr Stenhouse told the inquest that he inspected the upper aerodigestive tract and noted no foreign body but massive oedema (swelling) of the back of the tongue and throat with an almost impossible view of the vocal chords below. He described how it was not like anything he had seen in a post operative patient before.

[52] The deceased's neck was swollen but soft and there was some bruising present on the skin of the neck. He explained that he took a blood sample for mast cell tryptase (an indicator of anaphylaxis) as he thought that this was a possible cause for the massive oedema.

There was discussion with Mr Stenhouse about the cause of the massive [53] oedema following the surgical operation. He stated that, "I still don't know what has caused that, which is of concern." He agreed with a comment from Dr Bodenham, Consultant in Anaesthesia and Intensive Care Medicine, expert appointed on my behalf, that some swelling would be expected in the area given the extent of surgery, but this would generally resolve over time and be improving by day four post-surgery. He stated, "I would expect the swelling to be at its worse 48 hours after surgery and to recede after that. So, to get new swelling after four days, I would almost say is unlikely to be surgical swelling or post-surgical swelling." He was of the view that bleeding as a cause could be ruled out and he explained that the bruising around the deceased's neck was consistent with post-surgery and perfectly normal. In relation to infection, he stated that there was no evidence of infection in the neck as you would expect to see swelling and pus in the neck and there was no evidence of that at post mortem. The deceased did have a chest infection for which he was receiving treatment by way of antibiotics and physiotherapy. In relation to angioedema, as postulated by Dr Bodenham, whereby swelling can be seen in conditions like anaphylaxis or exposure to a drug causing a severe systemic allergic reaction with some reactions, immediate or delayed, or alternatively a more local allergic reaction, with, for example Zopiclone, Mr Stenhouse replied that it was his thought at the time that there may have been a massive allergic reaction. He explained that Zopiclone was the last drug taken an hour and a half, two hours prior to the event, however, in literature it is a rare effect, but not impossible. He went on to say that whilst it is not unheard of, you would expect a mast cell tryptase to be elevated if there is a massive allergic reaction, and there was not in the deceased's case. In relation to Dr Bodenham's suggestion of thrombosis of radial forearm free flap as a possible cause of the oedema, Mr Stenhouse explained that, if this were the case, one would see little dark spots of blood around the periphery of the flap, which becomes swollen and navy blue in colour. Also, flap observations were conducted, and it looked pink and healthy. Mr Stenhouse also ruled out blocked lymphatic channels and deep vein thrombosis, as there was no evidence of either.

[54] Mr Stenhouse concluded by stating that, "we, as a team, have been over this several times and we have tried to come to a sensible answer in our own heads and

we cannot give you an honest answer as to why this occurred ... There is no clear cut, easy answer as to what happened."

[55] Mr Patel's opinion was put to Mr Stenhouse, that a combination of continued increase to the soft tissue swelling, due to continued surgical oedema, infection and coughing led to progressive narrowing of the deceased's pharyngeal airway and eventually he was unable to maintain adequate oxygenation. Mr Stenhouse disagreed with this and stated that there was no evidence of such a gradual scenario, opining, "we've no evidence of pharyngeal oedema. We have a set of obs that are entirely normal. We have no respiratory distress, we have a patient maintaining their oxygen saturations, we have a patient who is coughing and clearing their airways nicely. We have a patient who is well, he is wandering around the ward with his relatives. This is not a picture of an impending slow brewing swelling in the neck." He went on to say, "I don't like the theory that this has been a gradual slow process. If it's a gradual slow process, it's gone from a point where the deceased was comfortable, he could breathe and speak quite comfortably at midnight, to a point where he couldn't breathe at all in three and a half hours, so something's tipped him over the edge. And I don't like things I can't explain. I can't explain what's happened. It just doesn't make sense to me."

[56] In relation to a comment made in the ISR Report, that the Head and Neck Cancer Service at Altnagelvin Hospital was not functioning as an adhesive unit, Mr Stenhouse explained that they were a small, tight team, and that he disagreed with this finding. Mr Stenhouse confirmed that head and neck surgeries were suspended pending the outcome of the ISR Report and that the Service stopped surgery altogether. He explained that these surgeries now take place in the Ulster Hospital, because of COVID 19, the Service lost its infrastructure and had no ward and could not satisfy the criteria that should be met for surgery under NICE guidance.

[57] Mr Ged Smith, Consultant Oral and Maxillofacial Surgeon, gave evidence to the inquest. He agreed with all his colleague Mr Stenhouse's evidence. Mr Smith explained that he and Mr Stenhouse worked as a team and performed surgeries together.

[58] On 17 July 2019 Mr Smith reviewed the deceased. The biopsy confirmed the presence of a moderately differentiated Squamous Cell Carcinoma. The diagnosis from the biopsy was conveyed to the deceased and treatment options were discussed.

[59] Mr Smith told the inquest that a proposed surgical plan was put forward to the deceased, a combined treatment option with surgery followed by Radiotherapy, guided by pathology, which Mr Stenhouse stated would give the best possible outcome for the deceased.

[60] On the 24 July 2019, the deceased was reviewed by Mr Smith along with Mr Stenhouse. It was confirmed that scans showed no evidence of distance spread of this disease, and the surgical plan was discussed again.

[61] Mr Smith told the inquest that, at this time, the deceased wished to proceed with surgery. An operation date of 30 July 2019 was fixed for a tracheostomy, left neck dissection, resection of tumour and reconstruction utilising a left radial forearm free flap. Mr Smith stated that this proposed treatment plan was discussed at the regional Multi-Disciplinary Team meeting.

[62] Mr Smith told the inquest that he agreed with Mr Stenhouse's comments that the correct surgery was performed, stating, "personally I thought he would require reconstruction in view of the position of the tumour and the size of the altered tissue that could be seen ... if we were going to reconstruct, we would have done a neck dissection. I am fairly adamant about that. If you go into the neck, you do a neck dissection." He agreed with Mr Stenhouse's comment that one must look at the decision-making process that they made at the time and not from the end point backwards, as he stated this was the approach the experts adopted.

[63] The deceased was admitted on the 29 July 2019 and the operation was undertaken on the 30 July 2019 with Mr Stenhouse and Mr Smith present along with other members of the surgical team and anaesthetic team. Mr Smith told the inquest that the procedure was entirely uneventful. The deceased was subsequently reviewed by Mr Smith and Mr Stenhouse, and by junior staff.

[64] Mr Smith reviewed the deceased at 08:20 hours 31 July 2019, and stated that the flap reconstruction was very good, and his drains were minimally active. He stated that there was no evidence of any swelling at the operative site. Mr Smith advised that the cuff on the tracheostomy be deflated, to prevent any risk of pressure necrosis to the tracheal wall from prolonged pressure from the cuff. He then suggested a Dietetic review regarding his nasogastric feeding and suggested that the flap observation should continue hourly. That morning, staff recorded "secretions +++" and "sputum: copious, bloodied mucoid secretions."

[65] Mr Smith reviewed the deceased again at midday on the 31 July 2019, and his observations were stable with his oxygen saturation at 99%. He was experiencing secretions as staff noted "very strong spontaneous cough, clearing copious thick bloodied mucoid secretions." Mr Smith stated that he was managing these very well. The treatment plan was to leave the tracheostomy tube in situ and the deceased's notes record "as per Mr Smith, not for decannulation until secretions lessen."

[66] Later that evening, junior staff recorded that the deceased had "secretions +++", and "dirty secretions" which were notable, although Mr Smith stated that these were not noted as being problematic and were being managed well past the tracheostomy tube.

[67] At 08:45 hours on 1 August 2019, the deceased was reviewed by Mr Stenhouse. His observations had remained stable, although secretions were continuing and noted to be ++. Mr Smith described to the inquest that the tracheostomy tube was removed by Mr Stenhouse at this time and replaced with nasal speculums for oxygen delivery. A drain was removed from the neck, and it was advised that he could move to free fluids. Mr Stenhouse requested a Speech and Language assessment. He was subsequently seen by the Speech and Language Therapist Ms Furey and recommendations were made for sips of sterile water only.

[68] In relation to the decision by Mr Stenhouse to remove the tube with secretions ++ that morning, Mr Smith commented that he believed, like Mr Stenhouse, that the tube was actually increasing the secretions and the chest improved on extubation and by all accounts the deceased was managing the secretions and so "removing it was not a bad decision." He went on to say that surgical stomas are open, and the tube could be re-sited two weeks afterwards with minimal manipulation. He stated that there was never a suggestion after decannulation that the tube should be reinserted, and he stated they have a very low threshold for putting it back in.

[69] At 08:30 hours on 2 August 2019 Mr Smith assessed the deceased, and his observations remained stable after removal of the tracheostomy tube. His oxygen saturations were consistently above 96% and he was comfortable, speaking in sentences with good voice, although on withdrawal of supplemental oxygen through nasal specula, his saturation was brought down to 92%, recovering to 99% on delivery of oxygen via nasal specula.

[70] In relation to neck swelling, which Ms Swatosh stated she observed and brought to Mr Smith's attention, Mr Smith explained that he did not observe anything unusual, "These patients always get some swelling in the superficial tissues after the neck incision, and that's what I saw in the deceased, but there was no collection of fluid below the flaps, and that was borne out in the pathology. There was no collection of fluid in the neck, so the drain removals were appropriate as far as that's what you would get. But there was certainly no collection, certainly nothing that would occlude an airway and certainly nothing that would have contributed to this." He stated that the flap checks, conducted by nurses and junior staff, were to specifically look for swelling within the surgical site and in the neck. When asked whether the deceased should have been nil by mouth at this stage, Mr Smith replied that sips of fluid is essentially nil by mouth.

[71] Mr Smith commented that the deceased was producing a considerable amount of sputum, although, in his view, he was coping well with this, coughing it up into his mouth. Mr Smith suggested chest physiotherapy should continue and suggested changing the antibiotics to reduce the sputum that he was producing. He recommended that he could progress to free fluid, although again the deceased was assessed by Ms Furey at 13:30 hours and maintained on sips of sterile water only. Mr Smith stated that, the deceased, never at any point progressed beyond sips of sterile water for mouth hygiene. [72] Later that day, the deceased was reviewed by a dietician and Mr Smith. Mr Smith removed a second drain from the neck as there had been less than 30mls reported draining over the previous 24 hours and no evidence of fluid retention or swelling at the surgical sites. This was Mr Smith's last review, and he handed over to Mr Stenhouse.

[73] In relation to the timing of the removal of the tracheostomy tube and the position of the experts that it was removed too early and should have been removed after all the drains had been removed rather than being removed when one drain was removed, Mr Smith agreed with Mr Stenhouse's evidence, that it was nothing he had heard of being linked ever in his career and that drains should be left in "until its done its job."

[74] Mr Smith told the inquest that there was nothing in the deceased's records to indicate that there were any warning signs, in the hours before the events of 03:45 hours on 3 August 2019, and he agreed with Dr Bodenham that probably the most sensitive indicator of upper airway obstruction is voice change, and the deceased was talking in sentences and having conversations into the early hours of 3 August 2019.

[75] In relation to the deceased's cause of death, and possibilities which might have caused the event that happened in the early hours, Mr Smith explained to the inquest that "that's the most disturbing part. And for me the most worrisome part is, no, I don't. The swelling in the pharynx is not per se in the surgical site. The surgical site was free of oedema according to the pathologist. And so, the swelling in all the pharynx was severe enough to occlude the upper airway, which is a very significant swelling. The only time I've ever seen anything like it, was an anaphylaxis. You do occasionally get it in sepsis, on controlled sepsis, in the neck spaces, but you tend to get one side, not everything. So, the only time I have seen it is an anaphylactic reaction. So, the answer is: no, I've never seen anything like it before, even extensive head and neck surgery."

[76] In relation to Dr Bodenham's comment that he did not think that anaphylaxis was likely, and "the cause are far more likely to be infection, bleeding, trauma, coughing and continuing surgical oedema, all relating to the initial surgery", Mr Smith replied that there was no bleeding and an oedema usually peaks around 40 hours, and he did not see how chest infections result in pharyngeal oedema and there was no sign of infection in the neck or at the surgical site. Mr Smith agreed with Mr Patel that surgical oedema can peak later and persist for longer than 48 hours, but he commented that they should still have seen it by two days post-surgery. Mr Smith and Mr Stenhouse agreed with Dr Bodenham's suggested cause of death, however they both stated that it did not bring them closer to understanding the sequence and cause of the oedema.

[77] Ms Sheena Furey, Speech and Language Therapist, gave evidence to the inquest. She told the inquest that at 19:16 hours on 29 July 2019, the day of his admission, the deceased was referred to the speech and language therapy team in

Altnagelvin Hospital, due to the deceased's planned surgery which required assessment of swallowing and communication during admission. She explained that the role of a speech and language therapist is to provide assessment with regards to communication difficulties or swallowing difficulties that a patient may be presenting with and to provide recommendations.

[78] Ms Furey explained that she was involved in the deceased's care for two speech and language therapy assessments. Ms Furey's initial assessment of the deceased was completed at 16:00 hours on 1 August 2019 and a second assessment was completed at 13:30 hours on 2 August 2019.

[79] At the initial assessment on 1 August 2019, the deceased was two days post-surgery, and the medical team had requested a SALT assessment on the morning ward round. Ms Furey recalled being informed that the deceased was being treated for a chest infection post-surgery. His oxygen saturation levels were stable, and she noted that the deceased's tracheostomy tube was removed on the morning of 1 August 2019 and that his nasogastric (NG) tube remained in place. She had no concerns around the removal of the tube, and she did not recall seeing any abnormal swelling or anything different than what she would expect to see after surgery.

[80] Ms Furey was also informed that the deceased complained of mucus in his throat and nursing staff reported that he had been coughing up mucus into the mouth. Ms Furey noted that the deceased was coughing up mucus before commencing assessment of swallowing. Ms Furey was informed by nursing staff that the deceased was also coughing when swallowing drinks that day.

[81] During the assessment, Ms Furey noted that the deceased's speech was mostly clear in conversation and that the quality of his voice was impacted by mucus in his throat. He was independently applying pressure with his finger to the stoma site to aid voice production.

[82] Ms Furey told the inquest that during her initial assessment, she conducted a swallowing assessment with a view to determining if the deceased could safely and comfortably eat and drink orally. Initially, she offered him small amounts (trials) of sterile water and thickened water to assess his swallowing ability. She advised him to adopt a range of swallowing strategies to gauge if they improved his control and comfort of swallowing.

[83] Ms Furey told the inquest that with 20 trials of water swallowed as part of the assessment, adverse signs such as coughing and watering eyes were noted with 80% of trials. Ms Furey explained that coughing after eating or drinking can be indicative of aspiration. She observed similar responses when giving the deceased thin or thickened drinks. On discussion with the deceased, he reported that coughing up mucus from his throat was feeling uncomfortable. She suggested to him to try a chin down posture and small volumes of thin water taken at once (half teaspoons), and with this she noted a reduction in frequency of coughing symptoms. She explained that because of coughing there was some eye watering, and that coughing can be

indicative of the potential to aspirate, that water goes down the wrong way and into the lungs rather than the stomach.

[84] Ms Furey told the inquest that she discussed the assessment findings with Mr Stenhouse. She stated that she explained to him her impression that the deceased presented with a risk of aspiration when swallowing food and drinks and that her advice was to defer moving to oral feeding at this stage. Ms Furey recalled that Mr Stenhouse expressed that he was keen for the deceased to continue moving forward with "pushing oral intake." Ms Furey stated that she didn't recall pressure from Mr Stenhouse. Ms Furey then advised that oral trials (small amounts of oral intake on a trial basis) of sterile water only would be recommended at present.

[85] Following this, Ms Furey stated that she advised the deceased to trial half teaspoons of sterile water only, while adopting a chin down posture with each swallow, "as that was the most comfortable and safest for the patient" as "I did not feel he could manage volumes greater than that at that point in time." Nursing staff were advised of these recommendations and to monitor the deceased's tolerance of swallowing these oral trials and to be alert for signs of a chest infection. She stated that whilst she could make recommendations, "a medical team can always override my decision." All fluid intake was to be recorded on the fluid balance chart.

[86] The following day, 2 August 2019, Ms Furey completed a review assessment of the deceased's swallowing. She noted the medical team's plan recorded in the deceased's notes at 08:30 hours to continue offering 'free fluids' orally, which did not follow her recommendation from the day before. She stated that the terminology 'free fluids' was open to interpretation. She believed that her advice, on 1 August, was followed by the deceased and staff up to that point. She disagreed with the suggestion that the deceased should have remained nil by mouth, as suggested by Dr Bodenham. She stated, "I carried out two assessments of swallowing. Yes, those assessments indicated that he was presenting with some challenges, swallowing, with larger volumes of fluids, however, my assessment on both occasions identified that he was managing oral trials at that point, and that was what was recommended."

[87] During her assessment she spoke with the deceased who told her that he had a difficult night of coughing which resulted in no sleep. She noted on arrival that he was coughing, throat-clearing, and coughing up mucus.

[88] As part of the swallowing assessment, the deceased accepted small sips of sterile water which resulted in coughing, and he reported that he felt the coughing was distressing and uncomfortable. Ms Furey assessed his ability to swallow when adopting swallowing strategies. She noted that the deceased was not comfortably able to achieve chin down position when swallowing as there was secondary swelling, which indicated a worsening in swelling as he was able to adopt that position the day before. On adopting a supraglottic swallowing strategy, he demonstrated reduced frequency of coughing, however this was not consistent to eliminate coughing.

[89] Ms Furey told the inquest that her assessment findings on 2 August 2019, identified ongoing overt signs of potential aspiration and no significant improvement in swallowing ability or ability to progress with increasing amounts of food or fluids taken orally. She stated that his condition was the same as the day before "and he certainly hadn't improved." She advised half teaspoons of sterile water only orally at present to minimise risk of aspiration and its complications. She advised nursing staff to support and assist the deceased with these sterile water trials while continuing to monitor his chest status and tolerance of these. She told the inquest that she was content with the deceased's speech during both her assessments.

[90] Ms Furey explained that as her assessment findings, recorded in the notes, indicated that it was not safe or comfortable for the deceased to progress with increased amounts of oral intake, she recommended that the nasogastric tube remain in situ until oral feeding could be established. She outlined her plan to further review and assess the deceased's swallowing on Monday 5 August 2019.

[91] Dr Matthew Irvine, at the time an Anaesthetic Core Trainee, gave evidence to the inquest. On 2 August 2019, he was on night shift, and he was given a handover relating to the deceased. He was informed that the deceased was present on the HDU, however he had been deemed safe for discharge to the ward, his transfer documents had been completed on 1 August 2019, however a ward bed was not yet available.

[92] At 03:28 hours on 3 August 2019, Dr Irvine was alerted by an emergency buzzer and bleep to attend the HDU. He attended immediately, followed by Anaesthetic Registrar, Dr Joanne Greer. On arrival, Dr Irvine noted that the deceased was in severe respiratory distress with reducing oxygen saturations from 79% on arrival dropping to 60%. Dr Irvine also noted that his stomach was rising to breathe, but his chest was not filling with air, he was agitated, and his lips and fingers were developing a blue colour which, Dr Irvine explained, is consistent with low oxygen levels in the blood. Dr Irvine began to assist with his breathing using 100% oxygen via a mask and reservoir bag connected to wall oxygen, whilst Dr Greer prepared for intubation.

[93] Dr Irvine told the inquest that the deceased's oxygen saturations continued to decline, therefore anaesthesia was induced by Dr Greer, whilst continued attempts were made to improve oxygenation prior to intubation via an oropharyngeal airway and two-handed bagging technique. However, this was unsuccessful. Dr Irvine explained that his first attempt at intubation using a video laryngoscope was unsuccessful, as the anatomy appeared swollen and distorted, and he was therefore unable to see enough of the larynx to attempt intubation. He explained that Dr Greer took the role of team leader, administering drugs whilst he acted as first intubator. He stated that it was much better for Dr Greer to take the role of team leader as he had significantly less anaesthetic and intensive care experience.

[94] At this time, both Dr Irvine and Dr Greer noted that the deceased had no palpable pulse, therefore they began CPR. Pads were attached but the initial rhythm was asystole, therefore no shock was administered. They continued with the algorithm for non-shockable arrest, and throughout this, attempts were made to provide oxygen via facemask ventilation.

[95] During resuscitation, Dr Irvine then attempted to secure a patent airway by reopening the recently closed tracheostomy wound in the front of the deceased's neck. He removed the dressing and palpated through the wound into the trachea, he then passed a gum elastic bougie alongside his finger, followed by a size 6.0 endotracheal tube (ETT). Dr Greer and Dr Irvine then attempted to ventilate through this ETT, however, Dr Irvine removed it as the ETT was not within the deceased's airway.

[96] Dr Irvine then made a second attempt with a bougie and ETT via the tracheostomy site, and an airway was secured. Dr Irvine told the inquest that once the airway was secured, significant volumes of pink frothy sputum were suctioned from the ETT. CPR was ongoing throughout, and checks showed a non-shockable rhythm.

[97] At approximately 04:10 hours, Mr Stenhouse, and Dr Dripps, Consultant Anaesthetist and Intensivist arrived. Following 30 minutes of CPR it was agreed by all present to discontinue. Dr Irvine pronounced life extinct at 05:05 hours.

[98] Dr Joanne Greer, at the time an Anaesthetic Registrar, ST3, gave evidence to the inquest. She explained that she was the anaesthetic registrar on call for the Intensive Care/High Dependency Unit on night shift on Friday 2 August 2019. At 03:28 hours she heard the emergency buzzer sound and was bleeped. She attended the HDU with Dr Irvine.

[99] Dr Greer told the inquest that upon her arrival, the deceased was in severe respiratory distress. Dr Irvine was standing at the head of the bed applying an oxygen mask which was attached to a bagging circuit.

[100] At 03:35 hours, Dr Greer contacted the Intensive Care Consultant on call, Dr Kara Dripps, and asked her to attend urgently. She explained that she was very concerned that the deceased was about to go into cardiorespiratory arrest and that he may require intubation by reinserting an endotracheal tube via the front of neck stoma site as she knew the deceased had a recent tracheostomy tube removed in previous days and that she could attempt to re-open it in the event of intubation difficulties.

[101] Dr Greer asked that Mr Stenhouse also to be contacted as she could not rule out a post-operative complication for his decline that may have required surgical intervention, such as bleeding or swelling. [102] Dr Greer explained that the deceased's condition rapidly deteriorated, and his skin became a dark blue/black colour called cyanosis meaning there was a severe lack of oxygen. He was becoming increasingly agitated in keeping with a severe lack of oxygen. She stated that there was audible stridor, meaning noisy breathing and he had a paradoxical breathing pattern which are both in keeping with constriction in the upper airway. As the deceased was in peri-arrest, Dr Greer made the decision to proceed to intubation immediately. She assumed the role of team leader and explained that she was heavily involved with the airway, standing at Dr Irvine's shoulder, leading the arrest, making decisions, moving through algorithms, and applying guidance.

[103] Dr Irvine and Dr Greer were unable to manually ventilate the deceased with breathing circuit, oropharyngeal airway and two-handed technique. Dr Greer made the decision to proceed to intubation. She provided anaesthetic drugs which take approximately 60 seconds to create optimum conditions to intubate. Dr Irvine then attempted intubation, with Dr Greer's direct supervision, using a McGrath video laryngoscope. Dr Greer described to the inquest how there was no direct view on the video laryngoscope screen and then she took it from Dr Irvine's hand, and she could only see extremely distorted anatomy, very oedematous tissues and an impression of approximately the lower 10% of vocal cords anteriorly. She was unable to pass a bougie or externally manipulate the larynx into an intubatable position. She stated that she could not answer whether she should have tried first and when she did try, she was unsuccessful.

[104] Dr Greer stated that CPR was commenced, and the crash team were called. The defibrillator pads were attached, and initial rhythm was asystole. Advanced life support algorithm for non-shockable rhythm was commenced.

[105] Dr Greer explained how manual ventilation remained impossible so, she made the decision to proceed to re-establishing front of neck breathing tube access. Dr Greer described to the inquest that she had never done a front of neck access and had no experience of re-opening a stoma, but she was prepared through her training, protocols and guidelines.

[106] Dr Greer opened the tract digitally and a fine bore suction catheter passed. A bougie was then advanced by Dr Irvine and a size six endotracheal tube inserted. Both Dr Greer and Dr Irvine noted the airway tube was not in the correct place. She stated "That was my hope that there would be an easy hole there that the tube would slip in nicely, but the reality of it is, it's hard to see - there's swelling. We bear in mind there's CPR also going on at the same time, and you don't get a clear picture of a hole there, unfortunately, it is not as easy as it may seem."

[107] Dr Greer detailed how the endotracheal tube was then removed and the tract re-palpated. The bougie and endotracheal tube were re-inserted by Dr Irvine, and the correct position was confirmed with copious pink frothy sputum suctioned from the endotracheal tube indicative of frank gross pulmonary oedema secondary to previous airway obstruction. When asked, if the tracheostomy tube were in place, would that have made a difference, she stated that it would have, as they would not have had to re-site it.

[108] Dr Greer told the inquest that it was a difficult situation, and it gave her an opportunity to gather all training that she had had to date and try her best. She went on to say, "team leadership, followership are all key principles that we are taught in trying to deal with critical incidents. And that helps with a swift decision-making and to minimise any complications, if possible." She explained that she was more experienced than Dr Irvine and therefore it was correct that she assumed the leadership role. She agreed that it took about ten minutes to achieve airway access.

[109] Dr Dripps and Mr Stenhouse attended the HDU after cardiopulmonary resuscitation had been ongoing for 30 minutes, during which was non shockable rhythms. The decision was made by Dr Dripps with team agreement that further resuscitation was futile and cardiopulmonary resuscitation was discontinued. Life was pronounced extinct at 05:05 hours on 3 August 2019.

[110] Dr Kara Dripps, Consultant Anaesthetist, gave evidence to the inquest, which was admitted by way of Rule 17. At approximately 03:30 hours on 3 August 2019, she was contacted by Dr Greer explaining that the deceased was in respiratory distress, and she was about to intervene and requested Dr Dripps' assistance. On arrival with the deceased, Dr Dripps discussed with all team members discontinuation of CPR, which was agreed.

# Pathology Evidence

[111] Dr Alastair Bentley, Locum Consultant Forensic Pathologist, performed an autopsy on the deceased on 4 August 2019 and thereafter produced a report, which was admitted into evidence under Rule 17.

[112] Dr Bentley outlined how the autopsy confirmed swelling of the tissues of the pharynx, and this appeared to be due to accumulation of fluid, known as oedema. He stated that it is possible that this could have narrowed the upper part of this airway to such an extent that it would have severely impaired the deceased's ability to breathe.

[113] Dr Bentley stated that, from the deceased's history, circumstances surrounding his death and the findings at autopsy, there was no obvious cause for this swelling. He opined that one possibility that was raised was a severe allergic reaction to one of the drugs he was receiving. However, analysis of a blood sample taken prior to his death strongly suggested that there had been no allergic reaction, however, he stated that the possibility could not be completely excluded.

[114] Dr Bentley stated that autopsy also revealed severe pre-existing heart disease in the form of marked narrowing of the coronary arteries due to a severe degenerative process (coronary artery atheroma). He explained that this would have impaired the flow of blood to the heart and is a common cause of heart attacks and, on its own, a very common cause of sudden death. In this instance, he stated that it warranted inclusion as a possible contributing factor in death as it would have certainly rendered the deceased less able to survive a period of breathing difficulty.

[115] Dr Bentley concluded by stating that there was nothing at autopsy to suggest that anything untoward had happened during the surgical operation.

# Expert Evidence

[116] Mr Andrew Baldwin, Consultant Oral and Maxillofacial/Head and Neck Surgeon, instructed on my behalf; Mr Manu Patel, Consultant Oral and Maxillofacial Surgeon, instructed on behalf of the next of kin and Dr Andrew Bodenham, Consultant in Anaesthesia and Intensive Care Medicine, instructed on my behalf, all produced expert reports for the inquest. They held a meeting to discuss their respective reports, and they produced a document summarising their joint position and they gave evidence to the inquest.

[117] Mr Baldwin commented in his report that the preoperative diagnosis, staging, discussion at the MDT and agreement on a treatment plan was done in an appropriate timescale and that it was a satisfactory preoperative management. He stated that the surgical plan was a well-recognised approach, and the use of temporary tracheostomy is also accepted practice, although he stated that there would be differing opinion on the use of tracheostomy for what was essentially a small oral cancer (Stage 1).

[118] In relation to the assessment of Ms Furey on 1 August 2019, Mr Baldwin stated that if SALT had assessed the patient as demonstrating clear and persistent signs of aspiration, then the deceased should have remained 'nil by mouth' and fed via an NG tube until it was safe to take oral fluids when the risk of aspiration had reduced.

[119] In relation to the removal of the drains, Mr Baldwin explained that drains normally stay in up to about five days post-operatively, but it is accepted that if drainage drops to 10-20mls in 24 hours, then removal of a drain is possible. As a result, he was of the view that it was reasonable to remove drain two on 1 August 2019 whilst keeping in the remaining drain. Drain one was removed the following day, and he explained that its removal occurred slightly earlier than in some similar cases.

[120] In relation to the timing of the removal of the tracheostomy tube, Mr Baldwin outlined in his report that maintaining the tracheostomy in place for a few days postoperatively is considered acceptable practice, with decannulation variable depending on the volume of secretions, need for suctioning, need for ventilatory assistance and the patient's general recovery from surgery.

[121] Mr Baldwin noted the Trust's Guidance on weaning and decannulation, specifically, is the patient able to cough and swallow effectively, and protect their

airway? is bronchopulmonary infection or other pathology resolving? is the patient likely to be able to cope with the volume and viscosity of pulmonary secretions? Mr Baldwin opined that a medical note entry shows that "purulent secretions" had been noted, and the early removal of the tracheostomy, when copious secretions were still present, did appear to be an action that went against Mr Smith's advice on the evening of 31 July 2019, to delay removal until secretions lessen. It also appeared to Mr Baldwin, to not follow the Trust guidance and he commented that it may have been beneficial to leave the tracheostomy in slightly longer to aid suctioning and clearance of the secretions.

[122] In relation to the deceased's cause of death, Mr Baldwin outlined how the exact cause of the pharyngeal oedema was difficult to identify and in his opinion the oedema was related to the extensive surgery that had been undertaken.

[123] In relation to the deceased's cause of death, it was Mr Patel's opinion that a combination of continued increase to the soft tissue swelling due to increasing surgical swelling, infection and coughing led to progressive narrowing of the deceased upper/pharyngeal airway and eventually he was unable to maintain adequate oxygenation on 3 August 2019. It was Mr Patel's opinion that the narrowing of the airways occurred over many hours (over 24 hours) rather than a single acute event eventually leading to total obstruction on lying down.

[124] Mr Patel commented that the surgery was undertaken to the standard expected and in good time. He was of the view that decannulation of the tracheostomy early on 1 August 2019, at the same time as removal of the first surgical drain, and in the presence of infection leading to copious "dirty" secretions and increasing swelling to the neck, was substandard care. He stated that the clinicians did not consider the additional risks of continuing swelling, not yet at its peak, as, infection leads to an increase in secretions and neck swelling with a compromise to oxygenation. Mr Patel was of the view that the decannulation of the tracheostomy was conducted without assessing fully all the potential risks of airway obstruction following the removal of the tracheostomy.

[125] Mr Patel agreed with SALT's recommendation of sips of sterile water as the introduction of water enhances recovery of swallowing, however he stated that the consequent severe coughing potentially led to increased neck swelling.

[126] Mr Patel explained that, on the balance of probabilities, the deceased's death could have been prevented if the temporary tracheostomy had not been decannulated until all infection had resolved and the pharyngeal swelling reduced.

[127] In relation to what caused the deceased's upper airway obstruction, Dr Bodenham explained that this was not clearcut. He gave a range of possible causes - bleeding, but this was not considered likely; infection, this was not commented on at post mortem or by clinicians; angio-oedema meaning swelling in conditions like anaphylaxis, however there was no rise in blood mast cell tryptase; a more local allergic effect from certain drugs, such as Zopiclone, however this is not

reported significantly in literature; thrombosis of the radial forearm free flap, however observations were satisfactory making it unlikely; blocked lymphatic channels, which was doubtful and deep venous thrombosis which was also unlikely. In relation to Zopiclone, the NHS website states that "in rare cases, it is possible to have a serious allergic reaction – anaphylaxis to Zopiclone." Dr Bodenham explained that from his reading of the literature, it is not frequently reported, "it's a very rare situation" and in terms of it being a cause of the pharyngeal oedema in the deceased, he replied, "it's low because it's relatively rare."

[128] Dr Bodenham explained that the cause of the deceased's rapid deterioration was the development of airway obstruction and then pulmonary oedema which led to inadequate ventilation and oxygenation with hypoxemia so severe that it caused cardiac arrest. He stated that from his "interpretation of the records there weren't any red flags or warnings from either the staff statements or the relatives' statements to highlight that this sort of problem was developing."

[129] In relation to the deceased's airway management during resuscitation, Dr Bodenham stated that it was likely, but not certain that the airway obstruction could have been avoided had the tracheostomy tube been left in situ. In Dr Bodenham's opinion, the attending anaesthetists overall did well in attending promptly, and in difficult circumstances were able to eventually secure the airway and provide resuscitation as per national guidance.

[130] All three experts met to discuss their respective reports and answer a series of questions. Thereafter, they produced a joint note, which was discussed during their evidence at inquest.

[131] In relation to the general operative approach and use of prophylactic tracheostomy, all three experts agreed that this was a recognised operation for this type of diagnosis. However, given the size of the primary lesion, the patient's age and comorbidities, the experts agreed that there were other surgical options available which would have been less invasive and of a shorter duration.

[132] It was agreed by Mr Baldwin and Mr Patel that a simple local resection of the tumour with primary closure or packing, without a neck dissection, would have been an acceptable alternative as it was an early-stage tumour. They went on to state that there was no indication in the notes that any of the other surgical options were discussed with the deceased, although, in evidence, Mr Smith confirmed that they were. Mr Baldwin stated that the operation performed would be classed as acceptable and "an option given what was presented with the patient, clinically", while Mr Patel did agree, but stated that this was not the option he would have offered or undertaken. He would have undertaken a 1cm wide margin excision of tumour to achieve histological clearance without neck dissection and a delayed decision on neck treatment depending on the histological findings of the resection specimen, as it was a small early-stage tumour with no evidence that it was aggressive. Mr Patel stated that whilst the surgery performed was an option, the surgery he would have performed was a more appropriate option for the diagnosis.

Mr Baldwin agreed and stated that you always try and get as good an outcome with the least invasive option.

[133] Mr Stenhouse and Mr Smith's view, that they did not have the benefit of the histopathology and therefore considered that the resection and accompanying neck dissection was the minimum they could do, was put to the experts. Mr Baldwin replied that there could have been the wide local excision and then await the pathology and if necessary, a neck dissection could have been done as a second procedure. Mr Patel agreed with this, explaining that "anybody who has experience of treating early carcinomas would say the same" and "the pathology report from the first initial biopsy, the clinical findings of the tumour and scan reports were favourable, and the optimum option here would be to carry out a wide local resection and assess the pathology." Both Mr Baldwin and Mr Patel did not agree with Mr Stenhouse and Mr Smith's comment that this decision was with the benefit of hindsight, working backwards from the final pathology. Mr Patel added that they misinterpreted the depth of the tumour which they stated was 3mm, "the depth of the tumour on the initial biopsy was never recorded", the 3mm referred to the depth of the biopsy, not the tumour. Mr Baldwin agreed stating that the depth was something that should have been discussed at the MDT meeting with the pathologist and recorded in minutes of the meeting. He stated that this would allow the MDT to make specific surgical guidance rather than guidance of "for surgery" or "surgical management" which does not give any guidance or plan for surgery. Mr Patel and Mr Baldwin added that even if the tumour had a depth of 3mm, that would not necessarily lead to a neck dissection. Mr Patel added that he believed the cut off for neck dissection is understood to be around 4.5mm and, in fact in the British Association of Neck Oncologists (BAHNO) guidance (which is adopted by all specialities) chapter on neck management, which Mr Patel co-authored, published in 2016, sets out algorithms for management of M0 and M1 which provides for positive neck radiotherapy and chemotherapy, and therefore Mr Patel highlighted, that if Mr Stenhouse and Mr Smith followed the guidance, they would not necessarily have carried out a neck dissection.

[134] Mr Baldwin accepted that the experts did not see the defect but declared that "potentially it may have been an excessively large initial resection, given the information we actually have" and Mr Patel agreed, commenting that "it does seem rather excessive for what is essentially a very small tumour." The consequences of this for the deceased were, as Mr Baldwin outlined, "it adds considerable extra time on to the duration of the surgery. Obviously, longer anaesthetic, and we know that the longer the anaesthetic, the longer the surgery, the potential for greater morbidity, chest infections, chest problems. If it had just been a local resection, without any need to proceed to more extensive surgery, there would have been no need to proceed to a tracheostomy. So, there would have been far less surgical morbidity, which reduces the risk of post-operative complications" and the surgery could have been completed within 60 minutes, rather than six hours.

[135] When it was pointed out that the deceased's case was presented to the MDT who recategorized the lesion from a T2 to T1N1, Mr Patel told the inquest that there were no notes of what was presented or agreed at the MDT, "I cannot see anywhere that the MDT agreed to have a huge wide dissection carried out with a neck dissection and a reconstruction." Both Mr Baldwin and Mr Patel explained that an N1, meaning a potential lymph node in the neck, could not be used as an explanation for such an extensive surgery, as there were further investigations that should have been carried out for this, such as ultrasound and a fine needle aspiration, to gain some detail, before embarking on a major neck dissection.

[136] Dr Bodenham agreed that the bigger and longer the operation with greater dissection, the greater the physiological and immunological risk to the deceased, and those risks need to be considered when deciding on the surgical approach. He stated that, as the deceased did not necessarily need this kind of major surgery, a smaller operation may have prevented the death, especially as this would have been a shorter procedure without the need for a tracheostomy. He added that, given the type of surgery undertaken, it was appropriate to conduct a prophylactic tracheostomy.

[137] It was put to the experts that Mr Stenhouse's evidence was that he had the advantage of seeing the tumour and it was surrounded by potentially malignant tissue which may become cancerous and therefore needed to be removed, and the defect repaired. Mr Baldwin replied that you would not be able to identify potentially malignant tissue from normal tissue by just looking at it. He explained that there is a marker which one can use to mark out dysplastic tissue. So, you would need to use the marker so "you don't either over or under dissect" and "you cannot do it with the naked eye." Mr Baldwin added that you do not always remove dysplastic tissue as you don't know the severity of it. Mr Patel agreed explaining "you don't cut out every dysplastic tissue without assessment" and there were no grounds prior to this surgical procedure to suggest that there was anything more than a T1 cancer, there was no it evidence of further dysplasia, there was dysplasia but it was eventually assessed to be moderate on the biopsy specimen, so I disagree, I don't think it's a clinical decision to take away as much as you can see." In relation to whether a neck dissection was reasonable, Mr Baldwin explained that as the decision was already made to do a microvascular flap repair, the neck had to be opened and some of the lymph nodes removed, and which invariably involved a neck dissection.

[138] The experts discussed the management of the deceased postoperatively in HDU/ICU, in particular the management post-operatively of the deceased's neck respective responsibilities and airway and the of the surgical and Dr Bodenham did not identify any "alarming intensivist/anaesthetic teams. deficiencies" of care from the intensive care point of view. He explained that HDU care is nominally under the care of maxillofacial surgeons. The only point raised was whether the nursing staff could have somehow picked up that the deceased was going into respiratory failure, however, the experts agreed that there was nothing in

the records to show there were warning signs in the hours before the nurse highlighted the situation.

[139] Mr Baldwin and Mr Patel both agreed that the tracheostomy tube was removed too early. It was removed at the same time as the second drain, and they opined that it may have been best to leave this until after all drains had been removed, to ensure no further neck swelling after drain removal. Mr Patel stated that the amount of potential swelling is unpredictable. Mr Patel and Mr Baldwin both agreed that it was always their practice in the units they worked in, that decannulation occurs after both drains are removed. Mr Patel agreed with Mr Stenhouse and Mr Smith's point that there is not a policy or guideline in relation to timing of removal, however, Mr Patel stated that there is an element of common sense and the reason for the drains is to reduce the amount of swelling in the neck, therefore the removal of these drains is going to lead to an increase in the swelling of the neck, and on occasion, bleeding from the drain site.

[140] Mr Stenhouse's evidence that the drains and the tracheostomy tube are separate in terms of criteria and that he did not see the correlation between the two, and that, in fact, in his view the drains presence can increase oedema, was put to the experts. Mr Patel replied, "I'm quite amazed to hear that there is no correlation between the two, because the purpose of the drain is very clear in my view, the purpose of a tracheostomy is very clear as well, and to say they're not interconnected is certainly something that would probably lead to more issues." Mr Baldwin agreed with this commenting, "I can't believe they're actually saying they're contributing to the oedema, because that's never been a teaching that I've had in all my years."

[141] In relation to the timing of the removal of the drains, Mr Baldwin agreed with Mr Stenhouse and Mr Smith that if the drains were not draining or not draining very much then they could come out. However, he went on to say that "there still should have been protection of the airway following that removal." Whereas Mr Patel did not believe the drains were removed at the right time and just because 20mls is a reasonable amount of fluid in the last 20 hours, "one needs to be 100% sure that the 20mls is correctly recorded" and you "need to ensure the airway is secure" after removal.

[142] Mr Baldwin and Mr Patel felt that the tracheostomy was removed too early, as there were clear issues with chest secretions and the removal appeared to contradict the guidance given in the Trust policy on decannulation of tracheostomies.

[143] Mr Baldwin explained that decannulation depends on a multitude of factors and in the deceased's case "it feels as though he was decannulated too early. Day two, day three, when drains have not been fully removed, the patient was having copious secretions, tracheostomy is a good aid to suction those secretions and the guidelines for decannulation appear to be contrary to what was carried out in this case." Mr Patel agreed and explained that "it was difficult to understand why a tracheostomy was carried out in the first place, if it was going to be decannulated so soon" as "the purpose of a tracheostomy is not only for the surgery, but to ensure that there is adequate airway management until it becomes safe. And clearly, it wasn't in this case."

[144] Mr Stenhouse's rational for removing the tracheostomy tube was put to the experts. He told the inquest that he, in his view, satisfied the Trust policy on decannulation in that the deceased no longer required a tracheostomy tube, as "he was passing the occlusion test with flying colours, coughing past the tube into his mouth, that he was coping with secretions incredibly well, and that the tube was both the source of infection and may be contributing to any secretions he was having." Mr Patel replied that all of that "was completely incorrect" and if this were so, why was the tube not taken out as soon as the surgery was completed. He explained that he did not "believe that the tracheostomy tube, in any way, contributed to an increase in secretions, they were predominantly because of infection or surgery. He went on to explain that one should not decannulate without considering the potential risks of doing so and the potential difficultly in reinserting if required." Mr Baldwin explained, "it is accepted that tracheostomies can be irritant, but given the fact that it's quoted in the notes that there are copious secretions, in my experience and working with intensive care, high dependency units who are obviously there to look after the airways as well in these patients, post-operatively, the guidance has always been that they would much prefer to have the tracheostomy still in place, to be able to suction and clear the lungs, and given the fact that this was only two or three days post-operatively, I wouldn't have been personally in a great rush to decannulate given what appears to have been the clinical situation in this case."

[145] In relation to Mr Stenhouse and Mr Smith's point that the tube could have been reinserted at any stage and there was no suggestion that it needed to be reinserted, thereby showing that it was not required, Mr Baldwin commented that as the tracheostomy came out, the deceased "went through bouts of violent coughing." He was of the view the deceased was aspirating "because he was coughing with sips of water, and there was no airway protection. So, although superficially it might have seemed that there were no issues and that it came out at an acceptable time, I think what happened subsequent to the tracheostomy coming out, potentially led to a downward spiral for this gentleman. So, I would counter that and say there were elements to show he did deteriorate following the removal and there was no airway protection." He added that you do not necessarily get a tracheostomy tube back in easily, especially in the early post-operative period when there is oedema. Mr Patel agreed, declaring, "it is very cavalier to even suggest that he could insert the trachey back in in these sort of circumstances" and "I challenge anybody trying to place the tracheostomy once it's been removed, without a great deal of difficulty."

[146] Mr Stenhouse told the inquest that following the removal, the deceased's oxygen saturations were monitored and generally remained high in the 93 to 99% region and that on 2 and 3 August they were 96% and 100% on nasal cannula.

Mr Baldwin commented that oxygen saturations were just one consideration, and the deceased was still potentially aspirating, and Mr Patel agreed, adding, "it isn't true that somebody talking or coughing or not demonstrating any signs of distress is necessarily an indication of a safe airway."

[147] In relation to what effect the experts considered the early removal of the tracheostomy tube had on the outcome, Mr Baldwin explained that the problem in the deceased's case was that as soon as the tracheostomy tube came out, there was Mr Stenhouse's instruction, on the morning of 1 and 2 August 2019, "to push oral fluids and we know that that went against the advice of the speech and language therapist, so, I think that pushing of oral fluids on removal of the tracheostomy, together with the copious secretions could certainly and quite easily have contributed to the later issues when we develop coughing, which could have contributed to the development of oedema." Mr Baldwin opined, "I do think that the tracheostomy removal allowed other elements to come into play with the patient care that probably shouldn't have taken place at that point." Mr Patel summarised that the removal of the tracheostomy tube at the early stage reduced "airway protection going forward for anything adverse that was going to occur." He told the inquest, that in his opinion, on the balance of probabilities, the deceased's death could have been prevented, if the temporary tracheostomy had not been decannulated until all infection resolved, meaning copious dirty secretions, and the pharyngeal swelling reduced.

[148] All three experts agreed that tracheostomy care is best managed in a multi-disciplinary environment. According to the deceased's notes, decannulation was not discussed with other teams as advised by the Trust Guidance.

[149] Dr Bodenham reported that, irrespective of what intubation was like at operation, if he were called at 3am to a patient with probable airway obstruction and cardiac arrest, he would assume a potentially difficult intubation, due to distortion of anatomy and oedema/swelling after surgery. Dr Bodenham added that in an ideal situation a senior person would take the lead, but he accepted Dr Greer and Dr Irvine's explanations and added that they were working in very difficult circumstances.

[150] Mr Baldwin and Mr Patel agreed that, in their view, the advice of the Speech and Language Therapist, Ms Furey, regarding oral fluid intake had been ignored. Ms Furey's advice on 1 August 2019, was to trial small sips of sterile water and Mr Stenhouse's plan was for free fluids at the ward round the following morning. The experts commented that the push for oral fluids was inappropriate given Ms Furey's advice.

[151] In relation to the relevance of the deceased's signs of aspiration post-operatively, Mr Baldwin felt that if there were signs of aspiration, any oral intake should have been withheld. Mr Patel agreed with Mr Baldwin but did state that there is evidence that small sips of water does not harm patients. However, he went on to clarify that the issue is not minor aspiration of water alone, but the risk of

causing a severe response in terms of coughing, especially if microvascular free flap reconstruction has been performed. He stated that "aspirating a few mls of sterile water is normally not an issue but, in these circumstances (causing the patient to cough violently), it is very relevant."

[152] Mr Baldwin stated, "that nowhere in the notes that I saw was it a joint decision, it appeared to be that speech and language quite specifically said that this should be withheld, and that in the notes, appeared to be overruled and given it was causing coughing, and there were potential problems associated with it, it should then have been withdrawn." Mr Patel stated that free fluids mean unrestricted fluids which Mr Stenhouse and Mr Smith recommended, whilst Ms Furey recommended sips of sterile water, and he wasn't sure "how you square the two." He explained, even though the records record the deceased taking small amounts of fluids as recorded on the fluid chart in the deceased's notes, Mr Patel queried whether the recording was entirely correct, as in most units, free fluids mean a jug and beaker is left for the patient to help themselves to water. It was pointed out that the deceased was in HDU receiving one to one nursing and fluids should have been monitored constantly.

[153] Mr Baldwin agreed that it was not just aspiration, but the fact that the patient was showing significant signs of large volume secretions. Mr Patel went further and explained that it was the impact of the aspiration, the severe coughing, which affected "other parts of the respiratory system, including the swelling oedema" and so "it was completely inappropriate to push any fluids at that stage."

[154] Dr Bodenham stated that, although this issue of oral intake was not discussed with ICU staff at the time, if asked he would have expected that they would have urged caution in view of the Speech and Language Therapist being worried at the time. He would have suggested "leave for now and reassess tomorrow."

[155] All experts agreed that both reports of the chest radiographs from 30 July and 1 August 2019 do not indicate chest infection. Although pleural secretions were present, radiologically the chest appeared clear. Dr. Bodenham told the inquest that he would not decide about suspected aspiration based on absence or otherwise of signs on an x-ray and that x-rays are not a particularly strong argument one way or another to allow fluid or feed to be taken orally.

[156] The experts agreed that the deceased was adequately monitored post-operatively. They discussed whether the staff responded appropriately to the emergency when the deceased indicated he had difficulty breathing and whether the approach at airway management (including attempts at intubation) in the emergency was appropriate. Dr Bodenham was of the view the nurses appeared to have reacted promptly enough, with no evidence of any delay. The anaesthetic team and the maxillofacial trainee responded appropriately, and he stated that Dr Greer and Dr Irvine did reasonably well, given their experience and seniority. Mr Patel and Mr Baldwin agreed that this was a difficult situation and the response from them was appropriate in relation to the guidance and their training.

[157] Dr Bodenham was of the view that even if a consultant maxillofacial surgeon or consultant anaesthetist arrived and performed trans-laryngeal intubation or replaced the tracheostomy, it is uncertain whether the deceased would have been resuscitated due to his other comorbidities, such as severe coronary heart disease with very narrowed coronary arteries. He opined that, irrespective of management, once cardiac arrest has occurred, particularly from hypoxemia (lack of oxygen), the chances of a successful outcome are very small and overall, there is only approximately a 20% chance of survival (even with neurological damage) in patients who suffer cardiac arrest in hospital.

[158] The experts discussed the likely cause or differential diagnosis of the pharyngeal oedema, noted at post-mortem. All three experts agreed that post-surgical oedema or coughing could have been a contributing factor or infection. They told the inquest that there was a lengthy list of causes, and it was not possible to specify with certainty which one was predominant in this case.

[159] Mr Patel detailed, that, looking at the evidence it happened over a period of time leading eventually to a final collapse of the deceased. He stated that it was unlikely to be an anaphylaxis as the blood test did not demonstrate anything to indicate that as a cause. Dr Bodenham agreed with Mr Patel regarding the anaphylaxis. He explained that the serum tryptase test levels rise with a severe systemic anaphylaxis, so wouldn't necessarily rise with a more local allergic response and there have been occasional reported cases of anaphylaxis without a tryptase rise. However, Dr Bodenham agreed that the causes are far more likely to be infection, bleeding, trauma, coughing and continuing surgical oedema, all relating to the initial surgery.

[160] In relation to any change in management that was likely to have allowed earlier detection or prevention of the fatal demise, the experts were of the view that the following issues, if addressed, could have allowed earlier detection or prevention of the fatal demise: treatment planning - the size of operation that the deceased received could have been smaller; the timing of tracheostomy removal; and the issue of fluid intake which was causing the deceased to cough may have been a contributing factor.

[161] The experts discussed, at length, the cause of death provided by Dr Bentley. Dr Bodenham suggested the cause of death should be in the form of:

- 1.(a) Cardiac arrest.
- 1.(b) Upper airway obstruction.
- 1.(c) Surgery for oral carcinoma.
- 2. Severe ischemic heart disease.

[162] Dr Bodenham told the inquest that he was not disagreeing with Dr Bentley's cause of death, he was simply putting it in a chronological order, articulating, "death was immediately preceded by cardiac arrest, which appeared to be caused by upper airway obstruction. We don't know the exact cause of that, which followed surgery for his oral carcinoma. And I also think that coronary artery disease was very significant, either because it would make resuscitation efforts more difficult, trying to get adequate perfusion through very narrowed coronary arteries, and although, perhaps less likely, the airway obstruction, it also could have been the primary cause of his cardiac arrest." He went on to say the airway obstruction meaning the swelling in the pharynx and larynx. Dr Bodenham opined, that there was a "clear temporal relationship with the surgery."

[163] Mr Patel and Mr Baldwin suggested the cause of death in the post-mortem report was probably more accurate, as pharyngeal oedema was the prime cause. They were unsure whether to bring in the cardiac arrest at 1(a), as cardiac arrest is the ultimate fatal event in all deaths, but they saw the logic in Dr Bodenham's suggestion.

[164] In relation to Mr Smith's comment during evidence, that he did not think it was simply surgical oedema, Mr Baldwin clarified that there were several operative sites, the oral cavity, and neck dissection which can result in significant oedema further down the oropharyngeal area and therefore if there are multiple operative sites, there can be swelling in different areas. Mr Stenhouse stated that one would have expected to have seen something within the 48 hours period in relation to postsurgical oedema. Mr Patel told the inquest that Mr Stenhouse was ignoring the surgical oedema to the pharynx, which one would not be able to visualise. Furthermore, he disagreed, with Mr Stenhouse's evidence, that you would have to see something within a 48-hour period. Mr Patel explained that the effect of coughing would not affect the tongue but the pharynx. He explained, "the actual obstruction was acute on chronic, I don't think that necessarily relates to the oedema being acute, and, what eventually happens is that even the simple act of somebody lying down can push the tissues backwards, especially if you've had surgery and in other cases, like sleep apnoea, where a patient goes to sleep, their airway obstructs, when the tongue falls backwards. So, the acute aspect of this case was the respiratory obstruction, not necessarily the oedema."

[165] Mr Baldwin told the inquest, that in his opinion, there was "a slow build-up of increasing swelling in the pharynx, precipitated by coughing and surgery", essentially an "acute event that has built up over the preceding hours or days" and then the deceased "reached a cliff edge."

[166] The deceased's flap monitoring was discussed by the experts. It was noted to be regularly monitored and "pink and warm." When asked whether there would be any signs of oedema or obstruction to be seen, Mr Baldwin stated that the flap was situated in the anterior lateral part of the mouth and a check of that was not actually

assessing for significant oedema lower down the pharynx and larynx. Mr Patel stated that the only way to assess that was by way of a fine endoscopy examination.

[167] In relation to the fact that, at 19:00 hours on 2 August 2019, the deceased was speaking well and showed signs that he was back to his old self, according to Ms Swatosh, Mr Patel commented that "the issue really here isn't about narrowing, I think the question really is when it became impossible for him to cope with that narrowing."

[168] Mr Baldwin concluded by commenting, in relation to the cause of the pharyngeal oedema, that "we can only make a supposition that this is down to a combination of surgical oedema, and shall we say irritative oedema that's been caused by the coughing. Those would be the two significant contributors to oedema in this case, without any other factors being given." Mr Patel agreed with this adding, "plus or minus any soft tissue infection because he had copious dirty secretions ... I think the most probable cause is slow but persistent and increasing airway obstruction because of his multiple irritative factors." Dr Bodenham agreed, declaring, it was more likely to be a primary airway obstruction. He stated that there was a "clear temporal relationship with the surgery" and "if he hadn't had the head and neck surgery, it's very unlikely he would have had the airway swelling."

#### Conclusions on the evidence

[169] I find on the balance of probabilities, that the deceased's death on 3 August 2019 was avoidable. Had a less invasive surgery taken place, with a local resection and primary closure or packing without a neck dissection and a delayed decision depending on histological findings; and had the tracheostomy remained in situ until the secretions lessened and an assessment made of the potential risks of airway obstruction following removal; I find, on the balance of probabilities, that the deceased's death on 3 August 2019 would have been avoided.

[170] On the evidence before me, there were a number of missed opportunities, in the care and treatment of the deceased, which I outline below, each of my findings I make on the balance of probabilities.

[171] I find that the surgery was too extensive for the size of the tumour based on the biopsy taken on 4 July 2019. I find that there should have been wide excision of the tumour to achieve histological clearance, without neck dissection and a delayed decision on neck treatment depending on histological findings and potentially bringing the deceased back for further surgery.

[172] I find that there should have been recorded minutes and notes of the Multidisciplinary Team meeting on 29 July 2019, detailing the case presentation, discussion and specific surgical care plan which would have ensured clarity, and transparency.

[173] I find that the tracheostomy should not have been removed before both drains were removed and it should have been left in situ to ensure no further neck swelling after drain removal.

[174] I find that the tracheostomy tube, the purpose of which was not only for the surgery, but to ensure there was adequate airway management, was removed too early, as there were clear issues with productive cough, chest secretions and the surgical oedema was not at its maximum. I find that it would have been prudent to leave the tracheostomy in place for another couple of days to allow for continued swelling, suctioning of the secretions and continued protection of the airway. I find that the decannulation of the tracheostomy was carried out without fully assessing all the potential risks of airway obstruction following the removal.

[175] I find that the Trust's 'Guidance on caring for an adult patient with a tracheostomy within the hospital setting' was not adhered to by Mr Stenhouse in relation to secretions, the weaning process and the decision to decannulate being a multidisciplinary decision "made by the nursing, physiotherapy and medical staff."

[176] I find that there should have been a weaning process rather than proceeding straight to decannulation, as set out in the Trust guidance, as it is widely considered an important pre-requisite for decannulation and there should have been a documented plan with appropriate timescales and realistic goals with the input of other specialties.

[177] I find that there was a push for free fluids by Mr Stenhouse and Mr Smith, despite Ms Furey's advice, and the fact that the deceased was showing signs of aspiration. Whilst the fluid chart shows small amounts of water taken, I find that caution should have been urged, as the aspiration of fluids was causing the deceased to cough violently and develop large volume dirty secretions.

[178] I find that the cause of the pharyngeal oedema was a combination of surgical oedema, and irritative oedema that was caused by the coughing, and possible infection due to copious dirty secretions, which led to a slow progressive narrowing of the deceased's pharyngeal airway, leading to a total obstruction and the deceased was eventually unable to maintain adequate oxygenation in the early hours of 3 August 2019, which caused his cardiac arrest.

[179] I find that the deceased developed surgical and irritative oedema following major surgery and his background of coronary artery atheroma, meant he was less able to cope with the post-surgical issues, and less able to survive a period of breathing difficulty, and the consequent airway compromise was enough to cause a cardiac arrest.

[180] A postmortem was performed, and I find that death was due to:

1.(a) Pharyngeal oedema following surgical operation for carcinoma of tongue.

2. Coronary artery atheroma.

[181] The above findings should be placed in the following context. At inquest, I heard evidence from Dr Patrick Stewart, Associate Medical Director in the Western Health and Social Care Trust, in relation to a number of changes made in the Trust following a Serious Adverse Incident Investigation, following the deceased's death, as well as the ISR report.

[182] Dr Stewart explained to the inquest that the Head and Neck Service in Altnagelvin was a small service with a small number of dedicated individuals. He explained that Mr Stenhouse and Mr Smith decided to stop the service pending a review of the service by the ISR and Serious Adverse Incident (SAI) review teams. Dr Stewart confirmed that the service no longer operates, and the service is now being delivered on a regional basis from the Ulster Hospital.

[183] Dr Stewart explained that the SAI investigation made a number of findings and recommendations. Dr Stewart stated that all major head and neck patients are now transferred to the South Eastern Trust with the pre-operative assessments completed in the Western Health and Social Trust prior to transfer. He explained that there is a new tracheostomy policy in place which provides safety assurance around tracheostomies insertion, daily care and decannulation. He stated that, patients now have a tracheostomy safety box and a national tracheostomy safety projects sign, designating what the tracheostomy is so all clinicians are informed. There are now scripts for decannulation, which provides guidance on weaning and removal.

[184] Another SAI recommendation was that the anaesthetic department should factor into its ongoing education and improvement work, regular drills for CICV and emergency front of neck tracheal access, which now takes place by way of a mandatory education programme.

[185] Dr Stewart explained that the consultants in the maxillofacial service attend local and regional meetings to present their data, and the deceased's case illustrates the importance of having immediately available medical staff with airway skills. Now all staff attending a medical emergency have been trained in airway management.

[186] Dr Stewart explained that the SAI noted the non-reporting of incidents within the Service and, this in turn, led to a loss of learning. The SAI report stated that the only safe way to ensure reporting is carried out is to have mandatory reporting in the Critical Care Unit for deaths or airway problems or both, using the DATIX system.

[187] Dr Stewart told the inquest that it was hoped the improvements made by the Trust demonstrate that it has learned important lessons from the death of the deceased.