QUEENSLAND
COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION: **Inquest into the death of Karl David SCHOLZ**

TITLE OF COURT: Coroner's Court

JURISDICTION: Brisbane

FILE NO(s): COR 253/02

DELIVERED ON: 23 November 2007

DELIVERED AT: Brisbane

HEARING DATE(s): 26 & 27 May 2005, 13 - 17 November 2006

FINDINGS OF: Ms Christine Clements, Deputy State Coroner

CATCHWORDS: CORONERS: Inquest – background of underlying dental disease, immediate need of teeth extraction, swelling of throat, transfer to hospital due to risk of airway obstruction, insertion of surgical drains, endotracheal tube, timing of extubation, decline on ward, query upper or lower respiratory problem, respiratory arrest.

REPRESENTATION:
Mr W Isdale of Crown Law – appearing to assist the Coroner

Mr J McDougall of Counsel– representing Drs Loewenthal, Lauritz, Fraser and Hopkins; instructed by Blake, Dawson Waldron Lawyers

Ms J Rosengren of Counsel – representing Dr C Chahoud, instructed by Thynne & Macartney Lawyers

Ms S Gallagher of Counsel – representing the Holy Spirit Northside Hospital and staff; instructed by Minter Ellison Lawyers

Mr D Tait of Counsel – representing Dr McCarthy; instructed by Quinlan, Miller & Treston Lawyers

Mr D Reid of Counsel representing the Family, instructed by Murphy Schmidt Lawyers

Coroners Act 1958 applies

1. The inquest was conducted pursuant to section 26 of the *Coroners Act 1958* ("the Act") because Mr Scholz' death occurred before 1 December 2003, the date on which the *Coroners Act 2003* was proclaimed. It is therefore a "pre-commencement death" within the terms of s100 of the latter Act, and the provisions of the *Coroners Act 1958* are preserved and continue to apply in relation to the inquest. I must deliver my findings pursuant to the provisions of that Act. I do so, reserving the right to revise these reasons should the need or the necessity arises.

2. The purpose of this inquest, as of any inquest under the Act, is to establish, as far as practicable –

   - the fact that a person has died:
   - the identity of the deceased person;
   - whether any person should be charged with any of those offences referred to in section 24 of the Act;
   - where, when and in what circumstances the deceased came by their death.

3. It should be kept firmly in mind that an inquest is a fact finding exercise and not a method of apportioning guilt. The procedure and rules of evidence suitable for a criminal trial are not suitable for an inquest. In an inquest there are no parties; there is no charge; there is no prosecution; there is no defence; there is no trial. An inquest is simply an attempt to establish facts. It is an inquisitorial process, a process of investigation – see *Annetts v McCann* (1990) 170 CLR 596 at 613-617, per Toohey J.

4. A Coroner's inquest is an investigation by inquisition in which no one has a right to be heard. It is not inclusive of adversary litigation. Nevertheless, the rules of natural justice and procedural fairness are applicable. Application of these rules will depend on the particular circumstances of the case in question.

5. In making my findings I am not permitted, under the Act, to express any opinion, on any matter which is outside the scope of this inquest, except in the form of a rider or recommendation.

6. The findings I make here are not to be framed in any way which may determine or influence any question or issue of liability in any other place or which might suggest that any person should be found guilty or otherwise in any other proceedings.

Introduction

7. Karl David Scholz died on 20 May 2002 at the age of thirty one at the Holy Spirit Northside Private Hospital, Rode Road Chermside. His death was reported by the police to the coroner as follows:

8. "On the 17th May 2002, the deceased attended Dr Glen Kinross Dental Surgery at Myer Drive-In Shopping Centre, Chermside with a dental infection. From there, the deceased was transferred by Queensland Ambulance Service to the Holy Spirit Hospital, 627 Rode Road, Chermside and was admitted to Intensive Care Unit at 1645 hours.

9. Dr Chris Chahoud diagnosed the deceased to have severe facial cellulitis, second degree dental infection/abscess. Several surgical procedures were performed on the deceased whilst he was admitted to the Holy Spirit Hospital Northside to deal with the drainage of the abscess. On 19th May 2002 the deceased was transferred into Ward 13 at the Holy Spirit Hospital Northside. At about 15.50hours on the 20th of May 2002, the deceased had breathing difficulties due to swelling of the airway. As a result, the deceased was transferred into Theatre 7 where he went into cardiac arrest and staff performed CPR on the deceased, but were unable to revive the deceased."

The Issues

Was the interval between Karl's first attendance on the dentist Dr Kinross on Tuesday 14 May and the appointment to have the teeth extracted on the Friday 17 May 2002, reasonable?

10. The evidence is that it would have been preferable to immediately remove the badly decayed teeth that were causing the infection. Dr Kinross advised Mr Scholz that this should happen and that he was able to remove the teeth immediately. After he had been given the advice, Mr Scholz elected to wait until an anaesthetist was available on the Friday to fully anaesthetize him. Mr Scholz' wife rang the dentist back on the Friday indicating the swelling had increased. The appointment was advanced by a short period which was all that could be done by that stage.

11. On this evidence I do not consider the interval between the appointments unreasonable in the circumstances. Mr Scholz decided to decline treatment until he could be anaesthetized. Antibiotic medication was provided although this is merely an adjunct to the treatment which was required, namely the removal of the teeth. A specific warning should have been given to Mr Scholz to return if swelling increased, but Mrs Scholz did so anyway on the Friday which was the day the appointment had been scheduled.

Was the removal of the ventilation tube in intensive care on Sunday 19 May 2002 authorised and appropriate? Should Dr Chahoud have been consulted regarding this decision?

12. The removal of the tube on the morning of 19 May 2002 was performed by Dr Sean Rothwell who was in a locum role as the intensive care fellow on that shift. I find that the decision was within the responsibility and authority of the intensive care doctor on duty at the time. This was Dr McCarthy. He had the authority and expertise to decide when it was appropriate to extubate the patient. It is not a requirement that the intensive care doctor

consult the surgeon prior to extubtation. Dr McCarthy indicated had he been concerned about the decision whether or not to extubate, he would have contacted the surgeon. There was no such concern as Mr Scholz had significantly improved after surgery with a noticeable decrease in swelling. No doubt it is a matter of professional courtesy that the surgeon and anaesthetist are informed of the extubation of the patient but it is a matter of individual practice how this occurs.

13. The decision to extubate required examination of the patient by the consultant, or at least the consultant's consideration of the examination of the patient by the intensive care fellow to inform him whether it was safe and appropriate to remove the tube. The ultimate decision and responsibility rested with Dr McCarthy.

14. On the basis of the evidence of Dr McCarthy and the nurse who had responsibility for observing and caring for Mr Scholz overnight and the medical record, I am satisfied that Mr Scholz was sufficiently improved to justify the decision made to extubate him. I note that Dr Rothwell physically performed the task but was unable to assist the inquest to any extent as he had no independent recollection of Mr Scholz or the extubation.

15. I accept Dr McCarthy's evidence that the patient was examined prior to extubation and an informed and appropriate decision was made to extubate. I note the evidence of differing medical opinions about the length of time a patient should remain intubated in a situation such as Mr Scholz'. Ultimately, it was a clinical decision to be made by the consultant intensivist who was required to balance the relative risks of continuing the intubation or election to extubate.

What supervision was Dr McCarthy providing in Intensive care? Was the return to the ward appropriate /premature?

16. The intensive care unit is staffed by specialist nurses and generally by doctors who are in training to become intensive care specialists, known as "fellows." They are supervised by the intensive care specialist, a consultant. The consultant in this case was very experienced and qualified in both anaesthetics and intensive care medicine. The consultant is not required to be physically present in the unit at all times but is rostered on call. When called upon by a fellow, they attend and remain in the unit as required by the needs of patients.

17. The evidence was that the intensive care unit was close to capacity overnight on the 18 and 19 May. Dr McCarthy had been called in and was present throughout the night with Dr Sean Rothwell. Mr Scholz had a dedicated special nurse attending him throughout the night because of the endotracheal tube in place and positive pressure ventilation. His level of sedation and analgesia was managed during this period to ensure that he did not inadvertently remove the tube until the decision was made to extubate. Although there is very little documentation by either doctor, I am

satisfied on the evidence that Mr Scholz was properly monitored under the supervision of Dr McCarthy.

18. He was examined by Dr Rothwell immediately prior to extubation which occurred about 7.00am on 19 May. He remained in the intensive care ward with constant nursing supervision and the overview of the doctors until about 1.00pm when he was discharged to the ward. The decision and authority to discharge was Dr McCarthy's as informed by the intensive care fellow. It is the responsibility of the nurse and intensive care fellow to keep the consultant informed of any significant change in the patient's condition.

19. There were two factors that were not brought to the attention of the consultant during the morning of 19 May leading up to his discharge to the ward. The first was that his temperature was increasing from 7.00am. The second was a notation by a nurse that Mr Scholz was having difficulty swallowing. Both were important matters in the context of a patient at risk of airway obstruction due to swelling caused by dental infection. Had the information been notified to the consultant there may have been further review of antibiotic cover or further examination and investigation.

Should a second scan have been performed before he was returned to the ward?

(a) Before the tube was removed,

(b) After the tube was removed.

20. The evidence given by Professor Whitby and others was that a CT scan was not indicated as necessary or desirable either before or after the tube was removed. There was sufficient information available without a CT scan at the time the tube was removed to indicate that Mr Scholz' condition had improved since surgery.

21. Dr McCarthy stated that a CT scan is a static representation of the patient rather than a dynamic indication of the patient's physiology. He emphasized the importance of clinical observation and talking with the patient to assess whether the condition was improving or deteriorating. Various medical witnesses agreed that focusing on individual observations is not determinative of a patient's condition. Thorough clinical assessment is most informative. This of course relies on communication between the treating team and sufficient documentation to inform the assessment.

Mr Scholz' parents state that on Monday 20 May, the day their son was returned to the ward and later died, an unidentified person offered their son a paper bag to breathe into saying he was hyperventilating. This was in response to Mrs Scholz seeking assistance when her son became distressed indicating he was having difficulty breathing. This occurred prior to the incident when Dr Koh attended at about 3.00pm. Did this happen, and if so, was it appropriate?

22. On the balance of probability I accept the parents' evidence on this matter. I find that the intervention as described by the parents did occur, namely that a male dressed in white who was seated on a bench outside Mr Scholz' room did respond to Mrs Scholz' request for assistance. I infer from the evidence that this person was probably a nurse, but I cannot say whether he was on duty or on a break at the time. Each male nurse who gave evidence before this inquest denied they were involved as described by the parents. I accept that Mr Scholz was distressed at the time and having difficulty breathing. I accept, on the balance of probability that the male nurse assessed the situation as requiring initial reassurance to calm Mr Scholz down before oxygen was administered. I accept the evidence that Mr Scholz was directed to breathe in and out of a paper bag before oxygen was administered. The significance of this incident is that it should have been documented and referred to the medical registrar for review. The absence of this documentation meant that the information was not available to Dr Koh, the intensivist, when he subsequently reviewed Mr Scholz at about 3.30pm that afternoon.

Did Karl suffer an allergic reaction to the anaesthetic administered at the dentist before admission to hospital?

23. The evidence from Dr Chahoud and the medical record was quite clear that Mr Scholz did not suffer an allergic reaction to the anaesthetic at the dentist. Swelling was due to infection and inflammation. I accept that evidence.

Why was there a delay from 12.30pm until 6.30pm before the surgery was undertaken by Dr Chahoud? If this was unavoidable why wasn't the patient transferred to another hospital?

24. The evidence was that Karl's condition was capable of being managed in intensive care upon his admission and that he was monitored in intensive care until a theatre was available. The operation was performed as soon as the theatre became available. Dr Chahoud's evidence was that he had already tried to admit Mr Scholz to a different hospital before admitting him to Holy Spirit Northside. No bed was available. He considered it would have been far too risky to consider transporting Mr Scholz to another hospital which was unlikely to be able to offer a theatre any earlier. He decided it was safer to wait until the theatre at Holy Spirit Northside was available. I accept this evidence and find the decision appropriate.

Was Karl sufficiently monitored on the ward?

25. The records indicate that observations were made of Mr Scholz and recorded on the ward. There were complaints by the parents that he was insufficiently cared for. They remarked on the build up of dressings and waste material on his bed over a period of time when they had been away from the ward having a meal break. This may be so, although there was also evidence that Mr Scholz wanted to keep the dressing material to show Dr Chahoud when he visited. It is important to note that the intensive care

doctor was appropriately called to review Mr Scholz when there were signs that Mr Scholz was having difficulty breathing. This was around 3.00pm.

26. There was however, the earlier incident alleged by the parents. I accept that this occurred in the morning when he became breathless and distressed. That matter was not attended to properly. It should have prompted medical review. It should have been documented. The failure to do so was critical and contributed to an overall false sense of security that Mr Scholz was out of risk.

27. The impression that Mr Scholz was quite a lot better by the Monday was backed up to some extent by the observations. The exceptions were an elevated pulse rate and some fluctuation in oxygen saturation levels. The evidence suggested that Mr Scholz was a stoic and independent man doing his best to manage himself in hospital. He took responsibility for performing his own mouth hygiene and suctioning. In hindsight, this might have masked his underlying condition. By the Monday, he had also managed to get up with his wife's assistance and have a shower.

Was Dr Koh's assessment, diagnosis and treatment of Mr Scholz on 20 May appropriate?

28. With the advantage of hindsight, the autopsy results and expert review, it can definitely be stated that Dr Koh's diagnosis and treatment of Mr Scholz between 3.30 and 4.00pm on 20 May 2002 was wrong. He had been called from intensive care to review the patient when he became breathless and distressed. His heart rate was elevated. His requirement for oxygen had increased. Dr Koh examined Mr Scholz, noted the history and considered that the problem was either a lower or upper respiratory problem. While he was there Mr Scholz coughed up a mucous plug and his condition improved considerably with oxygen saturations returning to 100 percent.

29. It was in these circumstances that Dr Koh mistakenly interpreted the cause of what he believed was a temporary difficulty in breathing, to be a lower respiratory mucous problem. Dr Koh was aware of the background circumstances in which Mr Scholz was admitted to hospital. He was aware of the risk to his airway due to swelling. He had treated him in intensive care upon his admission. Dr Koh failed to recognise that Mr Scholz' airway was becoming occluded and was critically unstable. The error was critical but explicable in the context of Dr Koh's examination and Mr Scholz' improvement after expectorating the mucous plug.

Emergency/nurse call buttons on the ward.

30. Various nurses described the layout and function of the call buttons in Mr Scholz' room. The evidence before the inquest was that the emergency team only received one call out for Mr Scholz on 20 May, which they attended promptly. This was when Mr Scholz arrested. Mr Scholz' parents indicated that they had hit call buttons when their son became

breathless earlier in the day. It is unclear which buttons were activated. There is no record of this happening. It may be that the button that was depressed was the nurse call button and when the male person dressed in white came into the room, he turned the call button off or turned on the button which showed that a nurse was in attendance.

31. I will refer to this issue later when I consider the hospital's actions since Mr Scholz' death.

Did Mr Scholz receive overall proper care?

32. There is no doubt that Mr Scholz died due to an upper airway obstruction caused by the infection in the deep seated abscess in his neck. This was precisely the risk that had been identified by the original treating dentist, Dr Kinross and the anaesthetist, Dr Lauritz when Mr Scholz was treated in the dental surgery by removal of three teeth. It was the anaesthetist who initially intubated him for a general anaesthetic who realised the potential for life threatening upper airway obstruction. Dr Lauritz referred him to the dental surgeon, Dr Chahoud and flagged the problem in his letter of admission written on Dr Kinross' letterhead.

33. Dr Chahoud confirmed the potential risk and made arrangements to have Mr Scholz cared for overnight in intensive care where there would be greater supervision and intensivists available with airways management expertise.

34. Surgery was performed on the 18 May on the Saturday night. This was effective in immediately draining 200ml of pus and inserting two drains to continue drainage. Appropriate antibiotic cover had been initiated on admission. Pathology tests from the abscess site confirmed the presence of two organisms, streptococcus milleri and bacteroides fragilis[1], which were adequately covered by the two antibiotics already prescribed.

35. There was debate over whether Mr Scholz should have had either a larger endotracheal tube placed during surgery to remain in position for a longer period of time, or whether he should have had a tracheotomy at the time of surgery. Expert review confirmed that the arrangements made were perfectly acceptable. There are simply different preferences validly employed to manage a patient such as Mr Scholz in this situation. Opinion from some intensive care specialists preferred a patient to be protected by a tracheotomy rather than an endotracheal tube. However, there was expert evidence that the 6.5 Rae tube used was adequate for the purpose of maintaining his airway during surgery and through the immediate recovery period.

36. Mr Scholz had recovered sufficiently to justify a decision to remove the tube the morning after surgery on 19 May. This was unexpectedly early from the point of view of the surgeon and anaesthetist, but they accepted

[1] Page 706 lines 20-21

the assessments of the intensive care team that Mr Scholz was well enough for this to happen. Dr Chahoud visited later that day while Mr Scholz was still in intensive care and he confirmed that Mr Scholz had improved significantly.

37. There were criticisms of the process of examination of the patient and lack of documentation by Dr Rothwell and/or Dr McCarthy. Despite the lack of proper documentation Mr Scholz' progress confirmed the decision to extubate was appropriate. He remained under observation in the intensive care ward from about 7.00am when the extubation occurred until around 1.00pm when he was transferred to the ward. Overall his observations and condition were significantly improved and Dr Chahoud did not object to his transfer to the ward. However, there were two important oversights during that morning. Mr Scholz' temperature was increasing and it was documented that he had difficulty swallowing. These matters were not brought to the attention of the consultant.

38. There remained a risk to Mr Scholz. Although his abscess had been surgically treated and two drains inserted, the drainage was continuing. The infection and consequent swelling continued and was being treated with antibiotics. The antibiotic cover was appropriate and sufficient for the two organisms detected in the pathology tests taken at the time of the operation. I accept the evidence of Professor Whitby that autopsy tests revealing pseudomonas are not relevant to the infection that Mr Scholz was fighting. The gram negative organisms detected by pathology from the operative site were the bacteroides fragilis bacilli, not pseudomonas. There was adequate and appropriate antibiotic cover for that organism.

39. The continuing risk for Mr Scholz was the deep swelling which was tracking inwards. This might still increase and obstruct Mr Scholz' upper airway if drainage did not continue to release pus.

40. Although overall the observations recorded on 20 May indicated that Mr Scholz' condition was stable and not deteriorating, there were signs of impending trouble. Mr Scholz' oxygen saturation levels did decline although not to an alarming degree until his ultimate collapse. There were two, not one episode of breathlessness on 20 May that preceded his final collapse. The first episode was witnessed by his parents who sought help. I find there was a response from an unidentified male person. The probability is that this was a member of staff, probably a nurse, rather than a random stranger. Although that person did assist in the sense of offering reassurance and oxygen and the situation resolved, the incident was not recorded or reported for medical review.

41. The second episode of breathlessness was promptly and appropriately dealt with by referral for medial review and application of oxygen as well as nebulised saline to assist expectoration. Tragically there were contradictory signs which led to the attending doctor diagnosing a lower respiratory problem rather than an upper respiratory problem. The

opportunity was missed to immediately transfer Mr Scholz to a theatre or intensive care to better protect his airway.

42. Within a very short time, Dr Chahoud arrived at the hospital. He was concerned to protect the airway and was on the phone making arrangements to have Mr Scholz taken to intensive care or theatre when the final respiratory arrest occurred. Even though he was taking these precautions, I doubt that Dr Chahoud had any idea how rapidly Mr Scholz' condition would worsen. Indeed Dr Chahoud had just offered reassurance to his parents when Mr Scholz collapsed. Mr Scholz was frightened and aware that his life was at risk because he could not breathe.

43. There is no doubt that every effort was then employed by all who attended and responded to the emergency situation to try to save Mr Scholz' life. Due to the displacement of the anatomy by the distortion of swelling as well as the closing of the airway itself caused by the swelling, there was difficulty in inserting an airway. Eventually it was achieved but tragically it was unsuccessful. Mr Scholz died a traumatic and frightening death.

Findings s.45

44. Karl David Scholz died on 20 May 2002 at the Holy Spirit Hospital Northside at Chermside. The cause of death was due to upper airway obstruction due to pharyngeal abscess caused by dental abscess, which had been treated.

Response from the hospital

45. The hospital undertook review processes. That information was tendered to the inquest. In November 2006, a final report was forwarded to the coroner from the Holy Spirit Northside Hospital.[2] The document included reviewed policies and programs. The review emphasized the importance of standards for documentation, communication and clinical handover for all staff.

46. Compliance with the standard is regularly audited.

47. In particular, a new nursing discharge form to be used on transfer from intensive care to the ward was developed including a bold red box headed "*special risk/issues about this patient*".

48. An audit process to review compliance with this procedure has been commenced.

49. A similar section has been inserted into the surgical operation notes to highlight issues of risk for the patient. In addition, a staff orientation program has been developed to inform all staff, whether they are visiting medical officers, intensive care fellows or nursing staff. The expectation is explicit that visiting medical officers must provide sufficient clinical information to be "*handed over*" on admission to the ward.

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[2] Exhibit 28.7

50. Finally, a weekly rolling audit of emergency buzzers by security staff has been instituted as well as a monthly audit of all buzzers by a contractor. The results are recorded and audited.

51. I consider that these responses have addressed the major issue namely; failure to recognise the potential for life threatening airway obstruction due to limited documentation in hospital records from the operating theatre, the intensive care unit and upon transfer to the ward.

Karl David Scholz died on 20 May 2002 due to the very condition that was identified as threatening his life on his admission to hospital - an obstruction of the airway due to pharyngeal abscess.

The circumstances of his death were extremely distressing to his wife, his family and to all of the medical staff who tried to save his life.

I extend my sincere condolences on the untimely death to his wife Anne, and to his parents, family and friends.

I thank counsel assisting, the police officer who took over the investigation and other counsel who have participated in the inquest, which is now closed. I publish these findings, signed and dated by me, together with a summary of the evidence of this matter.

Chris Clements
Deputy State Coroner
23 November 2007

Summary of evidence

Investigation by police

1. Constable Sinclair attended the hospital on the day that Mr Scholz died and arranged for the original hospital file to be photocopied and sent to the John Tonge Centre for the assistance of the pathologist at autopsy. She was a relatively inexperienced officer and does not appear to have been provided with much support in investigating or reporting this matter. Later investigation followed up on some matters raised in her initial report.

2. Much of the material submitted was summarised and opinion based. I note I have only considered information from evidence given in the inquest and evidence based on the medical record or statements submitted to this inquest.

Anne Scholz, wife of Karl Scholz

3. Mr Scholz was a serving police officer at the time of his death. His wife, Anne Scholz was also a serving police officer. She prepared a statement on her own initiative in September 2002. Mrs Scholz also gave evidence at the inquest. She prepared her statement from notes she made shortly after her husband's death.

4. She was unaware of her husband previously having any trouble with his teeth. She had known him since 1996. His general health was good. He told her he had dental pain for the first time on the afternoon of 13th May 2002. He first visited a Dr Ross Baillie at Kedron where he was given Voltaren and Tramal. The following day he consulted Dr Glen Kinross, a dentist at Chermside. He chose this dentist because he was aware there was an anaesthetist available. After the consultation, he told his wife the dentist had diagnosed an abscess requiring the affected tooth to be removed. There were also two other teeth that needed to be extracted. An appointment was made for Friday 17th May which was the first time available with the anaesthetist. He was provided with a prescription for an antibiotic, Amoxicillin.

5. Mrs Scholz said her husband saw another doctor, Dr Damoda at Albany Creek on 16th May. This was because he wasn't improving and he had swelling in his neck. He obtained another prescription for Voltaren and Tramal as well as Clamoxyl for the infection. He also obtained Temaze.

6. By 17th May when Mr Scholz attended the dental surgeon's rooms with his wife, the right hand side of his face was swollen from beneath the ear to the jaw area. Mrs Scholz recalls her husband informing the dentist about the other medications he had received. By this time Mrs Scholz said his voice sounded different to her and he was experiencing a lot of pain. The swelling was visibly apparent. He told his wife he was not sleeping well and he had difficulty breathing. She had been visiting his parents and came back to Brisbane to accompany Mr Scholz to the dentist on Friday 17th May.

7. Dr Lauritz was the anaesthetist. Karl preferred to have the extractions with the assistance of anaesthetic. After the procedure Dr Lauritz spoke with Mrs Scholz. He explained that Karl's airway was partially blocked. The teeth had been extracted but not a lot of pus had been released. He was concerned about Karl and the risk of developing cellulitis which could impede his airway. He asked whether they were covered with private health insurance. They were, and arrangements were made to transfer Karl via ambulance to the Holy Spirit Northside Hospital. The anaesthetist followed the ambulance to the hospital. She recalled that this was about 4.30 and contact had been made with an oral surgeon, Dr Chahoud. Mr Scholz was seen by Dr Chahoud and admitted to the intensive care unit.

8. Mrs Scholz visited her husband early the next morning, Saturday 18 May 2002. Karl was complaining of pain and could not open his mouth properly. He was given some morphine. His voice was still distorted.

9. Dr Chahoud saw Mr Scholz later that morning. He explained that Karl required surgery to have the abscess drained. A CT scan was to be performed prior to surgery. Mrs Scholz telephoned Karl's parents to inform them of the plans. Mrs Scholz senior indicated that she understood from a nurse in the intensive care unit that Karl had suffered an allergic reaction to the initial anaesthetic. Karl's wife then raised this issue with Dr Chahoud who dismissed it, explaining that it was the abscess that was the cause of the problem. The scan was taken in the early afternoon. The anaesthetist Dr Loewenthal spoke with Mrs Scholz and explained the scan and the area of the abscess. It was also shown to Mr Scholz who was sitting in bed. Dr Loewenthal indicated the condition was life threatening and that they would either put in a tracheotomy or pass through a tube via the nose or in the mouth. Drains were to be placed in Karl's neck to drain the infection from the abscess. Dr Loewenthal indicated it may be difficult to insert a tracheotomy because Karl had a short stocky neck.

10. Before Mr Scholz went into surgery he indicated to his wife that his tongue had swollen and he could not swallow. Mrs Scholz relayed this information to the staff.

11. Mrs Scholz understood that surgery commenced about 6.30pm. Dr Chahoud and Dr Loewenthal spoke with her after the surgery. They explained that drainage of about 200mls had been achieved in surgery. They had been able to insert a breathing tube and therefore did not need to insert a tracheotomy. She was told the breathing tube would be left in for twelve hours. She indicated that both doctors were talking to her explaining what had happened and what was planned. She recalled that Dr Chahoud stated he would review Karl to see if his swelling was improving by "softening". If not, then the tube would stay another twelve to twenty four hours. A tracheotomy might be needed if the swelling did not resolve to avoid damage to the voice box. Karl was sedated with a tube inserted via his nostril when his wife left him that night.

12. The following morning, Sunday 19 May, Mrs Scholz telephoned intensive care about 7.30am. She was told by a nurse that Karl was awake and talking. Mrs Scholz and Karl's parents arrived about 9.00am. When the family arrived they observed that the breathing tube had been removed. Mrs Scholz stated that Karl's face was still quite swollen on both sides of his face. There were drains coming from the right side of his face. He was able to talk but was experiencing pain. His tongue was still swollen.

13. Mrs Scholz saw Dr Chahoud in intensive care at this time. He confirmed the breathing tube had been removed prior to his arrival but he said nothing more about this. The doctor indicated that Karl could go to the ward that day, Sunday 19th May 2002. The family spent the day with him. During the late afternoon they observed Karl using the suction device to clear his mouth as he could not swallow. Mrs Scholz indicated that the family considered he did not receive a lot of nursing attention because he was the greatest distance from the nurse station. The family was attending to his needs. Mrs Scholz remained until about 10.30pm on Sunday evening.

14. On Monday morning Mrs Scholz returned and helped her husband to shower. His neck was still swollen, especially on the right hand side. He was coughing. He could talk but his voice was still distorted. His tongue remained swollen. He had difficulty swallowing. A nurse came in with a phone saying that Dr Chahoud wished to speak to him. Karl said he could not speak with him because of the difficulty he was experiencing in talking and due to pain. Dr Chahoud had indicated he would visit later. Mrs Scholz left the hospital at about 10.30 that morning and returned about 4.00pm in the afternoon. She had received a call from Karl's parents indicating his condition had declined. She returned to hospital and found that her husband was wheezing, coughing and having trouble breathing. This was about 4.15 in the afternoon. Dr Chahoud was present and a nurse was administering an oxygen mask. Dr Chahoud advised they were going to insert the tracheotomy. Karl's' temperature had dropped and Dr Chahoud asked for an intensive care doctor to attend. The male nurse left the room to make the call for that doctor. Karl then pointed to Dr Chahoud and said he couldn't breathe. His wife said she could see he was frightened. The doctor said to "get a nurse" and Mrs Scholz hit the button and ran out of the room to find one. She saw a nurse who came in and administered oxygen. Dr Chahoud again said to get an intensive care doctor and the nurse left the room to do this.

15. Mrs Scholz said that when she hit the nurse call button there was no response and she had to go out into the corridor to find someone. Mrs Scholz gave evidence that it was about seven to ten minutes before a doctor responded. She described him as small in stature and of Asian appearance. He did not appear to be in any rush. Mrs Scholz was asked to leave the room. Other people then arrived including another doctor who was running. She saw her husband being taken towards the theatre with cardiac resuscitation being continued.

16. Dr Chahoud came back to see Mrs Scholz about an hour later and told her that Karl had died and there was nothing he could do. Another doctor with a Scottish accent (Dr Fraser) came and offered condolences and indicated the death was likely to be reported to the coroner. Dr Chahoud and the intensive care doctor (Dr Henderson) then spoke with Mrs Scholz and indicated a cause of death certificate could be issued, but Mrs Scholz said she wanted an autopsy.

17. Karl was in bed number thirteen in a separate room. Mrs Scholz did not know how many patients or nurses were present for the shift on the morning of 20 May which finished at 3.00pm. It was suggested there were nine nurses and thirty patients.

The pathologist Dr Milne at autopsy

18. The pathologist Dr Nathan Milne performed the autopsy on 21 May 2002. He determined that the cause of death was due to airway obstruction due to pharyngeal abscess due to dental abscess, which had been treated. He indicated the pharyngeal abscess originated within a day or days. The abscess arose in the tooth and then spread down into the pharynx.

19. He observed there was a severe narrowing of the airway, approximately seventy five percent, at the orthopharyngeal level. This was sufficient restriction to cause inability to breathe. Histology testing revealed organisms usually found after death, rather than identifying the type of organism present during life. He confirmed the presence of a pharyngeal abscess with draining pus. There was associated swelling of tissues. The swelling involved most of the throat space. [2]

The dentist, Dr Kinross

20. Dr Kinross was the first dentist consulted by Mr Scholz. Dr Kinross has practiced in Queensland since 1977 and for nine years in the United Kingdom. Dr Kinross stated that Mr Scholz telephoned for an appointment on 14 May 2002 and was examined that day, which was a Tuesday. There were two very badly broken teeth, the upper left first molar and the lower right second molar. These teeth were decayed beyond rescue. He concluded that his mouth had not been professionally examined for a considerable time due to the amount of build up of scale. Karl informed the dentist he had had a "bad tooth" for four years. The dentist indicated that the decay process would heave started twelve to eighteen months prior to the teeth appearing as they did in May 2002. The main reason he had presented to the dentist in 2002 was due to swelling.

21. Dr Kinross expected that the swelling would be causing pain. He expected that the nerves in the decayed teeth by this stage would have died, but the decay process would continue. Dr Kinross did a preliminary x-ray. This revealed the level of decay and indicated the likelihood of death of the nerve. Dr Kinross offered to extract the tooth immediately. He had slotted Karl in between appointments because he had indicated he was

[2] Page 69 line 28

experiencing pain. An abscess was apparent and he offered immediate removal of the affected tooth. This was the standard response to immediately address the issue of the cause of the infection. Karl wasn't too happy about going ahead with the procedure under local anaesthetic, and so Dr Kinross discussed with him the option of a full anaesthetic. Arrangements were made accordingly for an appointment when the anaesthetist would be present, which was Friday 17 May 2002. It was the patient's choice whether he elected to proceed under local anaesthetic or wait for a general anaesthetic.

22. Karl was referred for a full x-ray of the tooth and jaw area. He was prescribed an antibiotic, a strong dose of penicillin. Karl dropped the detailed x -ray back on 16th May. Dr Kinross reviewed the x-ray and noted the possibility of a cyst associated with the lower right second molar. He proposed to curette it, meaning scrape it out. Dr Kinross interpreted the x-ray stating it showed a very large deficiency down through the molar and more pathology at the end of the root indicating infection or a long term abscess. The review of the x-ray did not precipitate immediate treatment, which was planned for the following day. Dr Kinross had not expected to see a cyst of that size but was confident the situation was capable of resolution by extraction of the tooth on the following day. He did not consider the matter needed referral to an oral surgeon at that time.

23. The detailed x-ray was reported upon by a radiologist, Dr Splatt. Dr Kinross summarised the report. Decay is most obvious in the upper left first molar and lower right second molar. There is associated bone loss from the lower right area consistent with a longstanding periapical abscess at the end of the root of the tooth. The area of infection was close to the large nerve canal. There was also infection associated with the upper left tooth and an area of gum infection around the lower left wisdom tooth. The written report was not necessarily available to the dentist before he proceeded with the removal of the teeth. The x-ray was available beforehand.

24. Dr Kinross was familiar with such a presentation and considered it was within his range of expertise to address. The removal of the teeth was successfully achieved. The main reason for referral to the oral surgeon was the finding by the anaesthetist, that the airway was constricted.

25. Dr Kinross explained that he used the term cyst as distinct from an abscess. If a cyst becomes infected it then becomes an abscess. He acknowledged that the information available indicated the cyst had become infected, and thus, an abscess.

26. Dr Kinross was unaware that Mr Scholz had consulted a doctor on the day prior to his first attendance at the dentist. He disagreed that it was necessary to refer Mr Scholz to a hospital or oral surgeon on 14 May when Karl declined immediate extraction under a local anaesthetic. He considered that antibiotic cover would suffice until the proposed extraction on 17th May. He did not recall educative advice from Dr Chahoud who

delivered lectures to dentists, that such a situation required review of the patient the following day to assess whether the antibiotics were helping. With the benefit of hindsight he acknowledged this might be a wise course of action.

27. Dr Kinross was aware by the 17th that Mr Scholz had been to see a doctor on the 16th due to pain and swelling. He did not know what that doctor prescribed. Dr Kinross said he was unaware that Mr Scholz was having difficulty talking on the 17th. He had no concerns about proceeding on the 17th with the extractions. Dr Kinross emphasized it was vitally important to remove the teeth which were causing infection.

28. Dr Kinross was unaware there was an airway impediment until the procedure was underway and the anaesthetist, Dr Lauritz informed him. Airway swelling was not a situation that Dr Kinross had encountered before.

29. The referral letter from the anaesthetist, Dr Lauritz indicated a finding of swelling of the floor of the mouth and trismus, which is spasm in the muscle restricting the degree to which the jaw can open. Dr Kinross said there was no trouble in opening Karl's jaw under anaesthetic. Dr Kinross did not experience any difficulty in working in Karl's mouth on the 17th, although the anaesthetist made some comments in his report to Dr Chahoud. Dr Kinross did not re-examine Karl on the 17th, prior to the patient being anaesthetized. Dr Kinross indicated the arrangement in his surgery could cater for an emergency but not to the extent of inserting a tracheotomy.

30. Dr Kinross obviously had experience and confidence in his anaesthetist to manage difficult intubations and therefore he did not consider that matters should not proceed on the 17th. Dr Kinross did consider what the best treatment was, and after discussion with his partner, Dr McCann and the anaesthetist, it was considered the best course was to remove the problem teeth. Dr Kinross did not recall Karl looking unwell before the procedure. He did not recall any apparent swelling to the face. Dr Kinross simply wasn't aware the swelling was impeding the airway until informed of this after anaesthetic had been administered and the airway could be accessed. I note that merely opening the mouth and looking inside does not provide a view of the airway.

31. Dr Kinross said he had not warned Karl after the Tuesday appointment to go straight to hospital if he experienced any breathing or eating difficulties. He said the reason was that he was unaware of any swelling in the airway. His notes record a "moderate degree of facial swelling" was observed on the first appointment.

32. Dr Kinross informed the court that swelling that extends into the submandibular area and the pharyngeal area is known as Ludwig's angina. It was the first time in his professional practice that he had encountered this condition. This is a separate condition to a swollen face.

Since Karl's death Dr Kinross has continued to treat patients in his professional rooms, including those presenting with swollen faces. He is careful to assess whether there is only facial swelling or whether the swelling has extended down into the throat area and internally. Checking the airway remains the responsibility of the anaesthetist. The airway cannot be inspected until the patient is sedated. Dr Kinross said Mr Scholz had not complained of pain to any extent.

33. On 17th May Mr Scholz' wife rang to inform the dentist that the swelling had increased. It was not possible to bring the appointment forward significantly. The anaesthetist assessed Mr Scholz and decided it was appropriate to proceed. Three teeth were removed and Karl's teeth were cleaned to remove scale. He curetted the area but no pus was elicited and no drainage was established. This was of concern because there was swelling apparent indicating infection and pus would be expected in that situation. Dr Kinross therefore thought the infection had spread beyond the immediate area of the tooth. The throat was a little bit swollen which partly occluded the airway. Dr Kinross discussed the situation with his dental partner and the anaesthetist and decided to contact an oral surgeon to pass over the management of the patient. Karl was referred to Dr Chahoud.

The anaesthetist, Dr Lauritz

34. Dr Lauritz was the anaesthetist who assisted Dr Kinross at the initial procedure to remove the decayed teeth on Friday 17 May 2002. This was the first time that Dr Lauritz had met Mr Scholz. He recalled him to be a strongly built young man with obvious swelling at the right angle of the jaw. He performed the usual full physical examination including heart and lung function. His main focus of attention was on the swelling. He recognised the seriousness of the situation and discussed this with Dr Kinross and another partner of Dr Kinross. It was on a Friday afternoon and the patient was in a degree of discomfort. He did not think that a referral to someone else was wise as it would necessarily cause further delay. If the tooth associated with the suspected abscess could be extracted and some drainage achieved then this would be the best course to take. The patient had refused a local anaesthetic initially. The options were local anaesthetic, or sedation followed by local anaesthetic. A step up from that would be anaesthetic drugs to allow insertion of a "tub" around the back of the tongue. This is called a laryngeal mask airway. The next option would be an endotracheal tube through the nose and down into the trachea. Dr Lauritz was concerned with Mr Scholz' condition because his jaw was affected by trismus, meaning the movement was restricted. He considered the safest option would be the endotracheal tube which would protect the airway from any possible inhalation of pus material and have least sedation impact. He used a 7.5millimetre tube which was able to be manipulated through the nasal passage without trauma. He progressively intravenously anaesthetized Mr Scholz to ensure he was continuing to breathe before finally adding the muscle relaxant to insert the laryngoscope. This is a light source to visualise the back of the throat and the larynx.

35. He observed swelling of the floor of the mouth and a degree of displacement of the laryngeal apparatus or vocal chords, slightly to the left. He became more concerned over the patient's condition on making this observation. The problem was the infection was tracking inwards and impacting on internal structures. He expected that Mr Scholz would have been feeling significant pain from the infection. He passed the tube into the trachea without problem or trauma. The teeth were extracted but there was no release of pus. He considered this to be significant because he had observed the swelling to be tracking down the throat. He considered therefore that Mr Scholz needed to be urgently transferred to hospital for further treatment as there had been no drainage of the infection and the swelling was impacting on internal anatomy with the airway at risk.

36. Antibiotic (Keflex) and anti-inflammatory (Dexmethsone) drugs were given. He was already on Amoxicillin. He extubated him and followed the ambulance to the hospital. He considered he would need a hospital environment to protect his airway while intravenous antibiotics were continued. He may also require a surgical drain of his neck to release any collection of pus. He said a patient who was awake would not tolerate a tube in place and so he extubated him. To have paralysed him or sedated him with drugs so that he would tolerate the tube would be risky if there were any problems with the tube. Arrangements were made quickly to access a private hospital with a suitable oral surgeon.

37. As Dr Lauritz said; "*Seeing the swelling inside the throat, that means that infection is in his upper airway, it's in the base of the neck, and that potentially is going to turn out to be life threatening.*"[3]

38. He said that Mr Scholz had cellulitis in the floor of his mouth and a dental abscess. He considered that as these conditions worsened it could be described as the condition known as Ludwig's angina, but it is really a question of degree of severity of the underlying conditions. He did not claim to be an expert concerning the condition, which he had never encountered or treated but his understanding was that there may be some unexpected organisms in this condition which are not amenable to standard antibiotics.

39. Dr Lauritz was asked to consider the symptoms evident in Mr Scholz in the afternoon of 20 May when he was examined by the intensive care fellow. He considered that the patient should have been admitted to a facility where an emergency tracheotomy could be performed. He was in imminent danger of airway obstruction.

40. Dr Lauritz was exhaustively questioned for his opinion on how matters progressed after he was no longer involved in the treatment. He was resolute in the view that Mr Scholz was in imminent trouble on 20 May. It was interesting that his evidence reinforced the primary importance of clinical observations to inform a proper assessment of the patient. In

[3] page 537 line 35

essence, he said that without having seen the patient the various readings of temperature, blood pressure, respiration rates are insufficient to infer anything in particular about the patient. He confirmed that in an acute blockage of an airway it is only a matter of a couple of minutes before a person can die.

The surgeon, Dr Christopher Chahoud.

41. Dr Chahoud is a qualified medical and dental practitioner with a specialist registration as an oral and maxillofacial surgeon. Dr Chahoud confirmed his evidence as contained in his statement dated 3 February 2003. He had been telephoned by Dr John Lauritz, the anaesthetist who had assisted Dr Kinross on 17 May 2002. Dr Chahoud was operating at the time of this call but he agreed to accept the care of Mr Scholz. There were no beds available at the first hospital but arrangements were made for his admission to Holy Spirit Northside. He saw Mr Scholz as soon as he was able to which was about quarter to eight that evening. He saw a fair amount of swelling on the side of his face extending just below the lower border of the jaw. Mr Scholz was uncomfortable but not demonstrating any sign of respiratory distress. Dr Chahoud examined him and could not detect any collection indicating an abscess requiring immediate drainage. He considered the condition was diffuse cellulitis, which is soft tissue swelling around his facial area and beneath his jaw.

42. Dr Chahoud reviewed the detailed dental x-ray, which was taken on 16 May 2002. He commented on the grossly decayed lower right second molar with an area of bony infection round the base of the root of the tooth. He confirmed the condition would have developed over a period of a couple of years. He identified two teeth where the nerve had died. Initially a patient would experience hot and cold sensitivity and intermittent aching. Generally a patient will experience pain. He expected that Mr Scholz would have experienced pain over a couple of years for his teeth to be in that condition at May 2002. There had been some previous dental work performed.

43. Dr Chahoud confirmed that the primary form of treatment was to remove the teeth. Alternatively, canal root filling could be performed if the patient did not want to lose the tooth. Dr Chahoud confirmed that Drs Kinross and Lauritz were correct in referring him when they had concerns over the state of his airway. On examination Dr Chahoud thought he was a lot better than he had expected. There was no stridor, which is harsh sound heard on inhalation caused by air passing through a constricted passage. There was twenty five degrees of trismus, meaning the swelling had restricted the jaw's ability to open. The antibiotics were adjuncts in treatment for the condition of the teeth, which needed to be removed. Dr Chahoud was quite clear that the tooth needed to be removed immediately.

44. The patient then needed monitoring while on antibiotic treatment to see if it was effective. He confirmed on examination the tooth removal had been skilfully performed. He assessed that Mr Scholz had mainly lateral

swelling and the condition was cellulitis as he could not detect any mass to indicate an abscess. Therefore the mainstay of treatment was intravenous antibiotic, fluid therapy and support with pain relief.

45. Dr Chahoud explained there is a difference between a suppurating abscess formation which needs immediate drainage and cellulitis which is an inflammatory response to infection within the tissues, the muscles, and the soft tissue of the face. Cellulitis cannot be effectively drained and to do so would cause damage and spread the infection.

46. Dr Chahoud ordered Amoxicillin and Metronidazole. He checked and discovered there was only one nurse on the ward and therefore considered it more appropriate that Mr Scholz stay in intensive care. This was the best care available as intensive care specialists are airway experts should Mr Scholz develop any difficulties with breathing.

47. Dr Chahoud said; *"..the only way to have twenty four hour medical care and twenty four hour nursing care which I wanted him to have was that it be done in intensive care. If for any reason he was to become distressed, the intensive care unit part of their brief is that they are airway experts. I am not an airway expert. I don't intubate people. I don't routinely perform tracheostomies. The ward has no facility for emergency intubation or anything of that nature and so I sent him to intensive care. I just wanted to assure that he was getting twenty four hour monitoring."*[4]

48. Dr Chahoud said there was some degree of resistance in having Mr Scholz admitted to the intensive care ward. Dr Ken Koh, the intensive care fellow initially said Mr Scholz could not have a bed in intensive care. A "fellow" is person who has completed their medical training and is now undertaking a year in a particular field. Dr Koh referred to his consultant, Dr McCarthy as the authority for his initial refusal to admit Mr Scholz to intensive care. Dr Chahoud expressed his position that the patient needed to be admitted to intensive care and after a phone call from Dr Koh to Dr McCarthy, that was agreed.

49. The next morning, the 18th May Dr Chahoud reviewed Mr Scholz and met his wife. He had been on the antibiotics overnight. Dr Chahoud noted that his temperature was beginning to increase which he considered to be an indication that an abscess or "collection" was likely to be developing. He ordered a CT scan to identify what area was affected. Most of the swelling was in the facial region underneath the Masseter muscle but the cellulitis was beginning to track down into the pharyngeal space which is where the airway starts to get involved. This indicated to him a need for surgical intervention. Only one theatre was operating and another theatre could not be opened due to insufficient emergency staff. Another surgeon was operating so Dr Chahoud arranged his anaesthetist to attend in preparation. Dr Chahoud considered he was safer remaining in the hospital waiting for theatre than being transferred elsewhere. Mr Scholz

[4] page 104 lines 20-30

was still maintaining his airway and his observations were good. He acknowledged that the other surgery took hours and there was delay. Dr Chahoud was confident that there was no immediate need to intubate him. This was confirmed in the sense that when he was taken to theatre the first attempt to intubate him was successful. The surgery was commenced at 5.00pm. The intubation was via a fibre optic method which is performed while the patient is sedated but still awake. This was considered safer than anesthetizing the patient prior to attempted intubation. Dr Chahoud discovered there was a significant collection on the right hand side and drains were inserted. He had CT imaging to help him direct the drain. Two hundred millilitres of fluid was drained which was seen as a very positive outcome with the airway secured and drains in situ. Dr Loewenthal was the anaesthetist for the procedure. He advised that there was distortion of the airways and intubation would be required to continue after the procedure. Due to the level of infection and contamination of the neck it was decided not to insert a tracheotomy at the time of surgery.

50. Mr Scholz was intubated via a nasotracheal tube from his nose, down through his mouth and nasopharynx into his trachea. Dr Loewenthal inserted the tube. Dr Chahoud advised that the patient was to be intubated overnight and then reviewed. The tube was to remain until the swelling had resolved. If the tube was required for several days, then a tracheotomy was to be undertaken. Mrs Scholz was advised accordingly.

51. The next morning at about 10 or 11.00am on 19th May 2002, Dr Chahoud attended intensive care and discovered that the patient had been extubated. He was surprised. Dr Chahoud's evidence was; *"I don't make the decisions... on how the airway is managed. I make the surgical decisions. I assess urgency. I assess appropriate surgical care and I try to get, accumulate a team of the best people I can to assist me with that. I have no experience in extubating patients determining when they should be extubated, re-intubating them, or anything of that nature. ...The brief of intensive care is that they manage the airway and that they then discharge the patient into my care when they are happy that the patient's alright".*

52. A note in the medical record reads:- *"Nursing ICU -Alert and orientated. Cardiovascular system monitored. Peripheries warm. Normotensive respiratory- okay- extubated, 7.00am"*

53. Dr Chahoud's evidence was that when he arrived he observed that the tube had been removed. He asked a nurse had Dr McCarthy taken the tube out and the nurse replied yes. Dr Chahoud asked the nurse whether Dr McCarthy was happy with the airway and again the reply was yes.

54. Dr Chahoud's own notes in the record that preceded the entry about extubation indicated the assessment that Dr Chahoud made of Mr Scholz that morning. The notes record that he recalls being advised by a nurse that the tube had been removed around 8.00am. It was Dr Chahoud who made his notes first in the record. At the time there was no note about the extubation. Subsequently the note was made by intensive care nurse

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(unnamed), that he had been extubated at 7.00am. There were no other notes about the extubation in the records indicating who removed the tube or at what time. There should have been.

55. In Dr Chahoud's previous experience he has always been consulted prior to the extubation of one of his patients. In his experience, It is usually a collegiate decision after consultation with the surgeon. The decision impacts on everyone else in managing the patient's condition. Dr Chahoud's view was that once the tube had been removed after the particular history, the degree of swelling would make it impossible to re-intubate him. If breathing became compromised again, then only a tracheotomy could be considered and this would require the patient to be conscious and upright to attempt the procedure safely.

56. Fortunately at the time, Dr Chahoud's assessment was that the patient had dramatically improved since surgery. His temperature had dropped and there had been significant drainage. He was alert and orientated. He was swallowing. He was tolerating crushed ice and water. His pain had lessened. His swelling had decreased. Despite this, Dr Chahoud believes that had he been consulted he would have strongly advised against extubation at that early stage. In his opinion, It was not essential that he needed to be extubated so early.

57. Dr McCarthy was not present when Dr Chahoud visited. Dr Chahoud called his anaesthetist, Dr Loewenthal. He already knew about the extubation as he had telephoned the hospital earlier. The extubation had occurred without consultation with Dr Loewenthal either. He expressed surprise to Dr Chahoud also, but Dr Chahoud was able to say that Karl was well. Both doctors were relieved as they feared that the airway would close over after removal of the tube given the background infection and swelling. Dr Chahoud accepted that it was therefore appropriate to discharge Karl back to the ward.

58. The next day on 20 May 2002 at about 11.00am, Dr Chahoud contacted the ward. He was advised by nursing staff that Karl was doing well and attending his shower. Dr Chahoud spoke with Karl on the phone as he was close to the nursing staff member. Mr Scholz did not indicate any concern and Dr Chahoud said he would review him that afternoon.

59. Dr Chahoud was happy with the care given by nursing staff and their record keeping. Oxygen saturation levels were recorded. He commented there was very little documentation on decisions taken in Intensive care. The oxygen levels were normal until about 3.30 and then there was a sudden deterioration. There was an acute episode shown in the elevated blood pressure and the plummeting saturation level when he became quite distressed due to insufficient oxygen. He was given 6 litres of oxygen and he re-saturated.

60. The nursing entry at 3.00pm indicated the patient was well and attending to his own mouth hygiene. The only indication of anything unusual was a

reference to being given nebulised saline due to complaint of thick sputum secretions and difficulty in coughing. Dr Chahoud did not find this surprising given the background history of the patient. This was non specific and did not indicate airway restriction. There were no specific notes in the chart from 5.00am until the 3.00pm entry, although observations were being made and recorded separately through the period.

61. At 3.30 that afternoon Dr Chahoud was on his way to the hospital when he received a call advising that Mr Scholz was short of breath. Dr Chahoud told the sister to contact intensive care and he was on his way. He indicated they knew his patient intimately. Dr Chahoud then received a call from the intensive care fellow. Dr Koh indicated that Mr Scholz did not have an airway obstruction, he had a mucus plug. The information was that Mr Scholz had a bad chest and was coughing up phlegm and was being treated with saline nebuliser.

62. In his evidence to the inquest Dr Chahoud said he did not consider this was appropriate. The patient was always a patient with an airway problem. Dr Chahoud presumed that Mr Scholz was in the care of someone from intensive care. Dr Koh entered his note indicating he had been asked to see the patient about an "airway obstruction," but he concluded it was a mucus plugging problem.

63. Dr Chahoud expected that the intensive care fellow would recognise the reality of the problem, namely that airway obstruction was always the issue with this patient. What Dr Chahoud was expecting was that an intensive care doctor would recognise the problem as an airway problem and take him to theatre for a tracheotomy. Dr Chahoud says he received the information about 3.30pm and he requested a doctor to attend on Mr Scholz. Dr Chahoud arrived at the hospital about 4.00pm. When he arrived there were a lot of staff present as well as the family. Dr Chahoud looked at Mr Scholz and said he was concerned. His oxygen saturation figures had recovered and he responded to Dr Chahoud's request to open his mouth quite wide. He was asked to poke his tongue out and Dr Chahoud considered that he was obstructing and asked a nurse to get a "crash trolley". Mr Scholz was distressed. Dr Chahoud's evidence was he told the family he needed to have a tracheotomy performed in theatre under local anaesthetic. The crash trolley was to enable emergency staff to access equipment and drugs to ventilate the patient.

64. Dr Chahoud said Mr Scholz had been maintaining his saturations and his observations were looking alright. He did not look overtly swollen, but the problem was lower with swelling in the pharynx. The drains were still functioning but they would not address the obstruction problem caused by the swelling. Dr Chahoud said the antibiotics and the drainage inserted via surgical means was the correct treatment. Mr Scholz had shown positive signs of responding to therapy after the surgery and instigation of the antibiotics. Dr Chahoud considers the sudden decline was explained on the basis that he was overcome by infection. His preference would have

been to maintain the tube throughout the management of the patient in case there was a need to go back to theatre to re-drain. He said the condition is unpredictable. Dr Chahoud said the site of the infection was significant; a recollection of infection was in the pharyngeal space which led to an obstruction. Dr Chahoud agreed with the proposition that the drains' capacity to cope with the build up of fluid was overcome. The only response to address this then became to secure the airway.

65. Dr Chahoud said he went to organise the tracheotomy by contacting the anaesthetist and the nurse called him back as Karl had gone into respiratory arrest, stopped breathing and became unconscious. There were other doctors present, although Dr Chahoud did not recognise some. They had attended from the private emergency department. Dr Chahoud said they included an anaesthetist and they all responded quickly. They were applying ventilation via a bag and mask which was all that was possible until the emergency team brought a percutaneous tracheotomy kit. There were multiple attempts made to insert the wire but the swelling made it impossible to tell exactly where the wind pipe was. A scalpel was then brought down from theatre and a tracheotomy was performed. This was done by one of the other doctors and Dr Chahoud was assisting. It was still difficult to deliver the pressurized 100 per cent oxygen to Mr Scholz. Dr Chahoud said that in the course of trying to perform the tracheotomy after the respiratory arrest Mr Scholz had suffered a cardiac arrest as well. He was defibrillated. Every effort was made to retrieve Mr Scholz' condition, but he did not respond.

66. Dr Chahoud noted the autopsy report which indicated there was pus from the abscess tracking through the muscle tissue creating a mass effect which caused the obstruction. His opinion was that the histology results confirmed what he expected regarding the gram positive cocci (three plus) as being the organism responsible for the infection. He considered the mention of pseudomonas (one plus) was likely to be a contaminant, rather than causative of the infection. He expressed the view it was not common in this type of infection. He confirmed the infection was a type of staphylococcus and the prescribed antibiotics were appropriate for the organism.

67. Dr Chahoud emphasized that it was not his decision to remove the tube and he was not an expert in managing airways. He said there was nothing in the record to explain on what basis the tube was removed.

68. Under cross examination Dr Chahoud could not identify which doctors attended on Mr Scholz when he arrested. He was told some were from the private emergency department. There were also doctors from the intensive care unit. Dr Chahoud recalled he did ring Dr Henderson in intensive care and raised the issue of the patient not being stable. Dr Chahoud said Dr Henderson responded stating the patient needed a tracheotomy, and so needed to go to theatre. Dr Chahoud thought Mr Scholz would be safer in intensive care until he could arrange a tracheotomy, but events overtook him. Dr Chahoud agreed that during the

attempts to help Mr Scholz, Dr Henderson, the director of intensive care was also present.

69. Dr Chahoud was not familiar with the hospital's protocols. The hospital had only been open a matter of months. There was subsequent evidence from Dr Henderson that the hospital had been open since the previous July. The protocol was to call the responsible visiting medical officer for advice and if not available within 15 minutes to call intensive care. Dr Chahoud told the nurse to call intensive care as they knew the patient.

70. Dr Chahoud was aware that Dr Henderson was part of the hospital's initial death audit process but subsequently a second audit was performed. Dr Chahoud stated he had no issue with either report.

71. Dr Chahoud answered questions from Mrs Scholz. He confirmed that when he first saw Mr Scholz he was able to speak. He was uncomfortable and pain medications were ordered. He had pain on swallowing. There was altered speech after the removal of three teeth and intubation. He had severe trismus. He noted facial swelling. He was not distressed and there was no wheezing on breathing. He did not have a temperature. He had cellulitis on the right hand side of the face and antibiotics were ordered.

72. The inability to open the mouth is not the same thing as an airway obstruction and does not indicate there is an obstruction. The trismus is associated with the infection of the tooth.

73. When Dr Chahoud first saw Mr Scholz on the 17th May, he looked into his mouth and checked whether his neck was soft or firm. Most of the swelling was on the right side. The airway itself cannot be directly inspected (except under anaesthesia) so other signs are checked including signs of distress. There was nothing to indicate imminent danger or distress on admission but Dr Chahoud thought it wise to have him in intensive care because there was the underlying risk to his airway. Nor did he consider a CT scan was required on admission after the initial examination. This was undertaken the next day. He believed there was no need to transfer him to another hospital. Dr Chahoud was confident in the capability and expertise of his anaesthetist, Dr Loewenthal to perform fibreoptic intubation.

74. Dr Chahoud said that it would of course be preferable had the original surgery been done in hospital but it was a decision for the anaesthetist.

75. Dr Loewenthal did the hand over to intensive care staff. Dr Chahoud said there were verbal instructions and his written notes. Dr Chahoud's instruction was in the surgical notes. He said *"We'll review on the ward in the AM"* meant to leave him intubated overnight and I'll see him in intensive care in the morning. Dr Chahoud was present when Dr Loewenthal handed over. Dr Loewenthal's notes include, *"query intubation*

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several days. Query tracheotomy if required and return intubated to ICU. Sedation analgesia while intubated."

76. Dr Chahoud indicated he would have expected a CT scan or an attempt at deflating the cuff around the tube to check to see if Mr Scholz could breathe before the tube was removed. He does not know what was done in intensive care. He would not expect the radiology department to accept him for a CT scan without a tube in place given the history of compromised breathing. Dr Chahoud said once an intensive care person had examined him and decided it was appropriate to remove the tube then it was not clinically indicated that this was required. There had been some resolution when he was transferred back to the ward.

77. Dr Chahoud agreed that Dr Koh from the intensive care unit should have been aware of the patient's previous condition when he came to the ward to see him on 20th May.

78. Dr Chahoud said the best place for a tracheotomy to be performed was in theatre, not in intensive care. Dr Henderson had indicated that he needed to go to theatre not intensive care and Dr Chahoud was trying to arrange this when Mr Scholz arrested. His preference in the interim was to hold him in intensive care. Dr Chahoud did not have the admitting rights to insist he go into intensive care. Dr Koh came in response to the call.

79. Dr Chahoud disagreed with the assessment made by Dr Koh. It was an incorrect diagnosis. He thought given the history there was very little ambiguity about what the potential life threatening situation was in this particular case. If a correct diagnosis had been made by Dr Koh then further expert advice could have been obtained from intensive care specialists and a decision made earlier whether to attempt an intubation. The saline nebuliser would not have caused harm but nor would it have assisted in the primary problem of airway obstruction.

80. Dr Chahoud indicated he had performed four elective tracheotomies but only in optimum controlled situations. Complex matters are referred to an appropriate surgeon either general or ear nose and throat. This situation was an emergency. It was clarified with Dr Henderson that a tracheotomy was required and surgery had to be arranged. It was not a question of unavailability of an intensive care bed.

81. Dr Chahoud agreed with the overall content of the notes made by Drs Koh and Sullivan concerning efforts to save Mr Scholz.

82. Dr Chahoud's comments about the recommendations from the hospital audit emphasized that it remains the surgical team decision whether or not a particular patient requires intubation.

83. Dr Chahoud's counsel asked questions which elicited; On review on the morning of 18th May in intensive care and examination by Dr Katragadda the notation was made-*"no airways problems overnight, trachea shift".*

That doctor indicated the patient was to be reviewed by the surgeon with a plan of return to the ward. On Dr Chahoud's arrival he disagreed with any return to the ward. Mr Scholz remained in intensive care until that evening when he went to surgery where 200mls of pus was drained and he was intubated.

84. Dr Loewenthal decided that the patient required intubation after surgery. He and Dr Chahoud have worked together over the years with fibreoptic intubations. This is done while the patient is awake. This is much safer than the risk of anaesthetizing the patient (which stops the spontaneous breathing.) If the patient is anaesthetized and intubation is unable to be achieved the patient will be without respiration and die. The fibreoptic cable passes through the nasal cavity, through the vocal chords and into the trachea. The tube is then threaded over the bronchoscope tube into the airway. Dr Chahoud expressed the view that once the airway had been secured via the intubation it was unnecessary to proceed with a further risky procedure of tracheotomy.[5]

85. There had been no request made by intensive care prior to the surgery for a tracheotomy to be performed. There was no suggestion that intensive care would not accept the patient simply with a nasotracheal tube.

86. Mr Scholz could not have been anesthetized to perform a tracheotomy because of his impaired airway. Such a procedure would have to be performed while he was conscious but sedated.

87. Dr Chahoud had not met Dr McCarthy prior to the admission of Mr Scholz so there was no understanding of how each worked. He indicated he would have advised against removing the nasotracheal tube if he had been consulted about this decision. It was not just a question of assessing the patient at the time but considering the context of his recent history and the disease process itself. Dr Chahoud's practice in the past is to leave the tube in place and review it over a longer time before deciding to extubate or perform a tracheotomy. He acknowledged that at the time of the extubation Mr Scholz had significantly improved. There were no grounds to argue for his retention in intensive care after extubation and in the condition he exhibited when returned to the ward.

88. When Dr Koh rang Dr Chahoud back after examining Mr Scholz he did not tell him that Mr Scholz;
    - had a swollen tongue
    - was having difficulty swallowing
    - was tachycardic
    - was distressed
    - was sweating.

89. I remark that the evidence from Dr Koh was that by the time he examined Mr Scholz he had settled and was no longer distressed.

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[5] page 177, line30-40

90. Dr Chahoud's evidence was that all he was told was that Mr Scholz had a mucus plug and that he had been put on saline nebuliser. Dr Koh's note recorded at 3.50pm on 20 May stated: *"Acutely short of breath, distressed, tachycardic. Wait Dr Chahoud review. Call if concerned- extension number 3664."*

91. Dr Chahoud said that given the patient's history these notes indicate the problem is an airway obstruction. He considers that Dr Koh should have contacted the senior intensive care doctor, Dr Henderson. He would expect then that Dr Henderson would have rung Dr Chahoud back and arrangement put in place for a tracheotomy. He considered that Mr Scholz should not have been left on the ward. Even though the oxygen saturations recovered after application of the nebuliser, Dr Chahoud was critical of the decision to leave him on the ward. He had documented what should have been identified as airway obstruction. Dr Chahoud said when he arrived he felt the nursing staff were still concerned and the doctor should have been in attendance. The patient was unstable. He spoke by phone to Dr Henderson, requesting transfer back to intensive care but Dr Henderson indicated that the patient needed a tracheotomy, and therefore theatre needed to be organised.

92. There was an issue raised by Mr Scholz' mother. She indicated she had been told that when Mr Scholz was first admitted, he was suffering an allergic reaction to the anaesthetic administered when the teeth were removed. This was completely discounted by Dr Chahoud. He was swollen due to infection. If a nurse said that there had been an allergic reaction, then it was incorrect information.

93. Dr Chahoud considered that a patient had to be reviewed to decide how long intubation is required rather than a set rule. In his experience of dental patients with similar conditions he had had them intubated between 3 and up to 18 days, including some with tracheotomies being required.

94. The final hospital audit review emphasized the importance of communication between anaesthetist, surgeon and intensive care specialist. Dr Chahoud agreed with this comment. Dr Chahoud stressed the importance of recognising the potential for life threatening developments of dental infections. The primary treatment is removal of the cause of infection, the tooth, and then adjunctive antibiotic therapy with monitoring. If an abscess is identified then the primary treatment is drainage with the adjunctive antibiotic therapy. He also remarked that the initial removal of the tooth might have been identified as requiring hospitalisation in all the circumstances.

95. Dr Chahoud agrees with the version of events provided by Mrs Scholz.[6]

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[6] page 184- 185 lines 50-60, 1-14

The anaesthetist, Dr Lowenthal

96. Dr Anton Loewenthal is the anaesthetist who provided the anaesthetic for the surgery performed by Dr Chahoud. He recalls that Mr Scholz had swelling from below the eye to the suprasternal notch, situated at about the level of a knotted neck tie. He noted a mid line shift of the trachea which pushed anatomical structures across from their usual position. He understood the cause of the swelling to be an infective process and associated inflammation. He noted that Mr Scholz really couldn't talk to any extent and the history was obtained via Mr Scholz' wife and head movements in response to questions from Dr Loewenthal. Dr Loewenthal considered that Mr Scholz had a life threatening condition when he first saw him. He was concerned that without any further action Mr Scholz would die. He needed his airway secured, which he anticipated would be a difficult procedure.

97. He planned to use an "awake" fibreoptic intubation. This would involve the insertion of a tube past the obstruction, past the larynx into the trachea. Once the airway had been secured, then Mr Scholz could safely be anaesthetized for the procedure to be performed. Dr Loewenthal said the tube insertion was difficult as he had expected. It was performed with topical anaesthetic to numb sensation and achieved its goal of securing the airway. The tube has a cuff which is inflated after insertion and this protects the airway from any contaminants entering the lung and also provides a good seal to ensue air entry is to the lungs and does not "leak" around the tube. The tube is inserted via the bronchoscope.

98. Dr Loewenthal acknowledged that the tube he used was 6.5 size and would be smaller than a normal anatomical airway. The size is the internal diameter of the tube. Mr Scholz was receiving mechanical assistance to overcome extra resistance during the operation and in intensive care. During the procedure his level of oxygen saturation was continually measured via a pulse oximeter.

99. Dr Loewenthal considered that the 8 size tube would be too large and cause too much discomfort for the patient during the "awake" intubation. The outside tube measurement is 10.8 millimetres. With a larger tube there is a greater risk of failure to insert the tube which was urgently required.

100. He also had a back up cannula with a sharp metal point which he would have used if it became necessary in the event of Mr Scholz obstructing. The cannula would have been inserted directly through the cricothyroid membrane to access the airway with a very fine tube. This would be an emergency access only and would require pressurized oxygen to maintain oxygen supply. Had such an emergency procedure been required it would need to occur within two minutes of obstruction. He had identified as best he could the site of the cricothyroid membrane in advance in case such a procedure was required.

101. Dr Loewenthal was not aware of any problem during the surgery. At the end of surgery Dr Loewenthal spoke to intensive care staff by phone to hand over the care of Mr Scholz. He informed them generally of what he had observed in doing the intubation and what the surgeon had done. He indicated the patient would be brought to intensive care with an endotracheal tube in place and for intensive care to look after him accordingly. He physically supervised and accompanied Mr Scholz to intensive care to ensure the safety of the patient with the endotracheal tube. He supervised the connection to the ventilator in intensive care with nurses and a medical officer present. He explained what had occurred and what should happen with the patient's care. He emphasized the paramount importance of the tube remaining in place. If the tube came out the patient would die. This was repeated twice. This was conveyed to a member of the nursing staff looking after Mr Scholz, and in the presence of a medical officer. He could not recall the identities of these people. He believes it may have been Nurse Preswell and Dr Rothwell. Dr Loewenthals' notes were of the anaesthetic record. This included that he believed that Mr Scholz would require intubation for three to four days. He also queried whether a tracheotomy might be required. The record shows *"intubation several days, and a question mark, tracheotomy"*.

102. Dr Loewenthal explained that a tracheotomy would usually be performed by a surgeon to insert a tube through the trachea. Dr Loewenthal said the period of time for the intubation tube was left up to the intensive care team to decide. They have autonomy to decide that issue. He gave specific instructions that the tube remains overnight, but beyond that, the decision was for the intensive care doctors.

103. On the 19th May, the morning after the operation, Dr Loewenthal contacted intensive care about 10.00am to inquire about Mr Scholz' condition. He spoke with a number of nursing staff who indicated Mr Scholz was doing well and that he had been extubated earlier that morning. He was surprised that Mr Scholz had already been extubated given his assessment of how serious his position had been the previous evening before surgery. He accepted the report. He was also told that Mr Scholz would remain in intensive care until later in the day before possible return to the ward. This was in accordance with what he would expect as it is wise to observe for a period after extubation in case there are any problems. The patient became the responsibility of intensive care staff after hand over to them.

104. The critical information provided by Dr Loewenthal was that on the Saturday night Mr Scholz could not lie down without obstructing his airway, thus requiring the awake, upright procedure to intubate him prior to anaesthetic being administered.

105. Dr Loewenthal helpfully also provided to the court a mini trach device and explained how it would be used. Both the mini trach and the device to access at the level of the cricothyroid membrane were used on the day Mr Scholz died in an attempt to access the airway.

106. Dr Loewenthal's evidence was that the size 6.5 tube could have remained in place for as long as it was required. Mr Scholz needed to be assessed as capable of managing without the tube. He considered that every extubation is a trial of extubation. A failed extubation can be immediately apparent. His clinical condition needed to have improved. He should look and feel better, and signs of infection and inflammation should have decreased. Prior to extubation Dr Loewenthal's view was that Mr Scholz should be able to breathe around the tube when the cuff was deflated. This would demonstrate that there was no obstruction above the cuff level impeding air passing between the tube and the airway. Clinical assessment was the critical method to assess readiness to extubate.

107. He agreed with the proposition that re-intubation in Mr Scholz' case would be very difficult and that an emergency tracheotomy would be difficult. He agreed that after extubation the infection or inflammation might still worsen. In Mr Scholz' case Dr Loewenthal believed that re-infection was the cause of the further swelling which blocked the airway causing death. The infection and inflammation were present throughout in his opinion. The drains were functioning throughout the period in draining away infection.

108. The means of monitoring his airway were by clinical signs. If a patient indicates they are having problems breathing that is the most reliable source of information. A difficulty in swallowing was also an indicator of impinged airway, as well as difficulty talking. A shift of the trachea and gross swelling also indicate risk to the airway.

109. Dr Loewenthal said that at 4.30pm on Monday 20 May there was very little that could be done when he obstructed. If there were signs that his condition was declining leading up to that time then his airway needed management. Consideration might have been given to fibre optic intubation but he may have needed to secure the airway prior to this via an "awake" tracheotomy. *"The decision to extubate was a pivotal moment in his management."*[7]

110. On the issue of whether a CT scan should have been ordered prior to extubation Dr Loewenthal said: *"If there was some doubt about the clinical condition regarding extubation, then a CT scan may provide additional information."*[8] However, Dr Loewenthal indicated that to his knowledge (and he had no control or input into the decision) Mr Scholz was greatly improved prior to extubation, and indeed after extubation.

111. The mainstay to effectively manage the patient is clinical assessment of the patient. Other tests may provide additional information. The note which Dr Loewenthal made regarding possible need for tracheotomy was made before the operation was performed. In fact Mr Scholz did not require this to be done. Dr Loewenthal agreed that whenever a person is

[7] page 441, line 41-42
[8] page 443 line 10

intubated the doctor has to have a "plan" in mind in case there is a need to re-intubate. How this might be documented is of less importance than to be prepared to manage any deterioration. Clinical assessment was mentioned repeatedly as of critical significance.

112. Dr Loewenthal also considered that Dr Chahoud, an oral and maxillofacial surgeon would have such skills. Emergency physicians and ICU doctors also have airway management skills.

113. Dr Loewenthals' comments were sought on the alternative methods of managing patients with a risky airway who required surgery. He said that a tracheotomy is a more secure form of airway management than a nasotracheal tube. The risks of blockage of the tube and displacement are less likely. On this particular night Dr Loewenthal did not think it was necessary. After he had successfully intubated Mr Scholz he did not consider it necessary to go further with tracheotomy as the airway was protected and secure. The need might possibly have arisen later. He did not think that Dr Chahoud had the particular experience to do so if required but he believed that Dr Pollard would be able to if required. Had that been required then it would have been performed in theatre, preferably by an ear nose and throat surgeon. The safeguarding tube would be withdrawn partly, only at the last second prior to incision into the trachea.

114. Dr Loewenthal was not informed there was an issue about the size of the nasotracheal tube. The extubation was performed on the basis of the clinical condition of the patient as far as he knew. Dr Loewenthal expected that Mr Scholz would be carefully monitored after this. Based on the intensivist's decision to extubate then he did not expect any need to re-intubate or perform a tracheotomy.

115. Dr Loewenthal was asked to comment on the issue of whether the intensivist should consult with the surgeon prior to a decision to extubate. An independent opinion had suggested that it was a matter of professional courtesy rather than obligation. Dr Loewenthal agreed with this. The intensivist would notify the surgeon at a suitable time.

116. He agreed that the notes indicated that Mr Scholz' condition was improving clinically for a period of time. According to the record he then deteriorated again when he was back in the ward.

117. With hindsight it could be said that a different outcome might have occurred if Mr Scholz remained intubated, but he could not be overly critical of the decision to extubate on the Sunday morning. *"I can't say with any degree of certainty that it (extubation) was the wrong thing to do."*[9]

118. Mr Scholz' surgery was inserted into an existing list underway by another surgeon Dr Pollard. His surgery was fitted in because of the concern for the airway. Dr Pollard was simply there to resume his list, not

[9] page 465 line 28-29

to perform a tracheotomy should the need arise. His presence would have been of assistance had the need arisen.

The intensive care consultant, Dr John McCarthy

119. Dr John McCarthy is a specialist anaesthetist and specialist intensivist who first qualified as a doctor in 1972. He is a consultant in the Holy Spirit Northside Hospital intensive care unit. Dr McCarthy remembered Mr Scholz and that he was admitted to the unit after a discussion between Dr Chahoud and Dr McCarthy's fellow in the unit, Dr Koh.

120. Dr McCarthy decided to accept Mr Scholz for admission to the intensive care unit to ensure his airway would be monitored. He was febrile, in pain and had the potential for compromise to his airway prior to the surgery.

121. He confirmed the unit is staffed by a doctor described as a "fellow." The consultant is on call as a resource when not physically present in the unit. Dr McCarthy attended the unit and remained there for as long as required when he was "called" in to assist.

122. Drs Koh and Rothwell were the fellows involved in Mr Scholz' care in the unit.

123. I note in this regard the emphasis that Dr McCarthy placed on the importance of communication from the intensive care fellow to the consultant to recognise when they should call upon further expertise and advice. It is also dependent on the intensive care fellow being alerted by nurses making observations of the patient of any deterioration in condition.

124. Dr McCarthy confirmed that Mr Scholz returned to the unit after surgery under the effects of the anaesthetic. He had a tube in place to enable positive pressure assistance for his breathing. Dr McCarthy was present in the unit overnight when Mr Scholz was returned after surgery. He recalled the unit being full. Every patient with an endotracheal tube has a dedicated nurse. Observations were recorded overnight from 8.15pm until 11.00am the following morning. Dr McCarthy explained that the written observations of particular readings are to be considered in conjunction with physical observation and speaking with the patient to assess his condition. Mr Scholz was receiving oxygen overnight. After 3.00am the formal observations were recorded each hour. This would indicate that it was considered the patient was improving.

125. Dr McCarthy remarked that when asked to review the significance of various observations, he was faced with the difficulty of not knowing the method of taking the temperature. The method can produce a different result. An individual temperature recording is but one piece of information to be considered in the overall picture of the patient. He agreed that Mr Scholz' temperature had increased between 4.00am and 7.00am. Dr McCarthy indicated he would have expected to be informed that the temperature had risen from 37.3 degrees to 38.6 degrees during this

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period. He did not recall having been informed of this. He considered the heart rate and blood pressure to be stable overnight. The crucial aspect of whether the patient is improving is evaluated by this information and being informed by talking with the patient. Mr Scholz was gradually waking up in the period leading up to when he was extubated. His level of sedation was gradually reduced. This was required so that the patient's condition could be properly assessed for consideration of extubation. Dr McCarthy was aware that the patient was to remain intubated overnight after surgery. There was some evidence that Mr Scholz had begun waking up prior to 6.00am. The patient needed to be awake to assess his airway, and his mental state.

126. Dr McCarthy's evidence was that he considered the patient was awake, obeying commands, had good circulation, and good colour. The pain had lessened. The swelling had reduced remarkably and he was aware at 3.00am that the temperature had come down to 37.3. I note he was unaware that the temperature then rose to over 38 degrees by 7.00am. Dr McCarthy's evidence was that he examined the patient around 6.00am. [10] By that time the drug Fentanyl had been stopped. Dr McCarthy acknowledged that he did not record his examination of Mr Scholz in the record. He said he spoke with the fellow, Dr Shaun Rothwell advising him that Mr Scholz could be extubated.

127. Dr McCarthy considered a 6.5 endotracheal tube would not be sufficient in the long term, for a patient of Mr Scholz' size. There was the risk of blockage and the risk of him being over sedated in order to tolerate the tube remaining in place.

128. Before a patient should be extubated they should be clear headed, have a good gas exchange, and the underlying illness should have been satisfactorily addressed. He acknowledged that although he considered the advantages primarily of extubating Mr Scholz, there was still a risk. He might have obstructed immediately, so a readiness to deal with this eventuality was required. He did not agree that a CT scan was required to inform the decision whether or not to extubate. This would provide a static picture of the anatomy but not the dynamic physiological state of the patient.

129. Dr McCarthy gave evidence that the patient was observed over an hour or so breathing spontaneously before deciding at 6.00am that he could be extubated, which then occurred at about 7.00am. The extubation was performed by Dr Shaun Rothwell. Dr McCarthy said this was under his supervision. He told the court he was watching it.

130. I note this evidence is not entirely consistent with the evidence of the nurses who gave evidence that they were physically present when extubation occurred. Nurse Famouri was just completing her shift and she was present while the nurse who had just started her shift assisted with a

[10] Page 263, line 24

suction device at the ready should that be required. Neither indicated that Dr McCarthy was present, although it is an open unit, and Dr McCarthy was always close by and immediately available.

131. Dr McCarthy stated he first tested for the patient's capacity to breathe independently by using positive pressure and observing the airflow around the tube, confirming there is space in the airway around the tube. His own preference was not to deflate the cuff as a method of observing the patient prior to extubation. When extubation occurred the cuff is deflated and the patient observed to ensure they are breathing and then the tube is removed.

132. Dr McCarthy told the court he sat and talked with Karl about how he felt with his situation. Dr McCarthy said his voice had come back quite well. Mr Scholz expressed his disappointment that a simple dental problem had led to his predicament. Dr McCarthy tried to reassure him that things were going well which is what appeared to be the case at that time. Mr Scholz remained in intensive care until 1.00pm before he was taken back to the ward.

133. Dr McCarthy stated the rise in temperature should have been brought to his attention. If it had he would have reviewed Mr Scholz and considered the possibility of a change in antibiotic. There was the possibility of a lung collapse and infection developing given the small size of the tube.

134. He disagreed that other observations during the morning before Mr Scholz returned to the ward indicated a decline in his condition.

135. The medical file goes with the patient to the ward. A handover is performed by the nurses from intensive care to the ward staff. No particular regime of observations was set out to be followed when Mr Scholz returned to the ward. That regime is set on the ward. The current view is that there should be an emphasis on nurse reporting anything of concern rather then taking strict observations and recording them but not necessarily informing the doctor of any change.[11]

136. Dr McCarthy stated he did not consult with Dr Chahoud prior to the decision to extubate. He indicated he had a lot of experience. There was no indication to do so as there was nothing to suggest the need for an alternative airway or a return to surgery. On return to the ward the patient returned to Dr Chahoud's care.

137. Dr McCarthy did not have any further contact with Mr Scholz. His call period ended at 8.00am on the Monday morning and was then taken over by Dr Alan Henderson.

[11] Page 272

138. On the issue of note taking, Dr McCarthy stated his practice was to get the fellow to make at least one entry if not two per 12 hour shift. Sometimes he would write an entry if there was something particularly important. There is constant communication in the unit in the form of conversation. Dr McCarthy indicated he would not be happy with a response time of five or seven minutes from the intensive care unit to an emergency call on the ward. I note in this regard that there is no compelling evidence of precisely what time elapsed after Dr Koh was called and his arrival from intensive care. Without being at all critical of family members, I doubt that they could be relied upon in such highly stressed circumstances to be accurate.

139. Dr McCarthy maintained his view point that the decision when to extubate requires respective risks to be evaluated. The presence of the tube and the need for sedation to continue to tolerate the tube create risks to a patient. [12]

140. He also maintained that had he been concerned over the issue of whether or not to extubate he would have consulted the surgeon.

141. Dr McCarthy suggested that patient care and safety could be improved with an improvement of records in charts. He referred to the variability in the way observations can be taken which can lead to different results and interpretations. He also suggested voice recognition technology would be of great assistance in intensive care units to record instructions and treatment provided. He said; *"Notes have to be improved, but notes are a continual problem and until there's an electronic record which is signed on and signed off you will never get accurate- accurate and honest notes."*[13]

142. He agreed that cooperation and communication between different specialities as well as between the ward and intensive care was important. This was particularly so to provide an early warning of a developing problem.

143. Dr McCarthy was questioned about not recording notes in the chart in relation to his conversation with Mr Scholz. He acknowledged he had not and explained he was busy. There were other seriously ill patients in the unit at the time. He relied on his fellow to make the notes and agreed there was very little that was recorded. In hindsight he recognises that there were insufficient details recorded of the patient's condition and the basis for various decisions taken in his care. He indicated his practice of note taking had increased and become more detailed since Mr Scholz' death occurred.

144. He also explained that continuing the Fentanyl after extubation at a normal level was providing pain relief.

[12] Page 276 lines 35 on for further examples and at page 293, line 12-13
[13] Page 281 line 252-30

145. Dr McCarthy maintained that Mr Scholz' swelling had decreased significantly after the surgery and his speech had improved.

146. Dr McCarthy's emphasis was on observation and prompt attention to any problem as the surest safeguard against a compromised airway. A further CT scan might have assisted in identifying hidden pockets of pus but clinical observation remains the key in his view.

Intensive care nurses

147. Nurse Presnell was the nurse in intensive care who was spoken to by the anaesthetist Dr Loewenthal. She recalls the emphasis being placed on the importance of the endotracheal tube being maintained. Her recollection was that is should be maintained for a number of days. Nurse Presnell heard this information prior to the surgery when the matter was being discussed with Mr and Mrs Scholz, and again, on transfer from surgery to intensive care.

148. It was her note in the records that indicated the patient was to remain intubated overnight. She recalled seeing a note in the record indicating five days but could not identify this in the records. She recalled it to be on paperwork from the theatre where there is a section headed; "Comments post operative orders".

149. Nurse Presnell remembered that Dr Loewenthal said that the patient would die if the tube came out overnight. She could not say that the fellow was there at the same time but expected Dr Loewenthal would have spoken with him before leaving. She passed the information onto the next shift of nurses.

150. When pressed about her recollection of an instruction to remain intubated for five days, she conceded she may have been mistaken.

151. Nurse Famouri also worked in intensive care. She cared for Mr Scholz after his return from theatre and had to ensure sedation was maintained to avoid him removing the tube. She in turn handed over to the next nurse with similar instructions. By that time she said Mr Scholz was awake and aware but not seeking to pull his tube out. While she was doing the hand over she recalls the intensive care fellow came over and stated he was going to extubate the patient. She recalls him to be a new doctor with whom she had not previously worked. His name was Sean (Rothwell). She says it was after 6.30am when he was extubated. Her last formal observation was taken at 6.00am. At that time he was awake, and aware of what was happening. She could communicate with him and tell him what was happening. She recalled that Dr Rothwell had visited the patient before 6.30am and indicated he proposed to extubate but she said she did not think this was the plan for the patient, and queried it with the fellow. She said to wait until after handover time. She said she proceeded with handover and then Dr Rothwell returned to extubate Mr Scholz without further discussion. When the nurse saw what he was doing she ran to get help because they were not ready to assist. They ran to get suction in

case this was required. There was no problem with the extubation. The intensive care consultant, Dr McCarthy was present in the unit but with other patients at the time. Dr Rothwell had examined Mr Scholz prior to extubation, once before 6.00 am and then immediately prior to the actual extubation.

152. Nurse Famouri had worked from about quarter past ten the previous evening until 6.30am on Sunday morning. She left by about 7.00am. It was a busy night and she recalls that Dr McCarthy was in the unit overnight as well as a cardio surgeon at some time. Within the first hour of her shift she took over the care of Mr Scholz. He was under her constant observation.

153. She could not recall Dr McCarthy examining Mr Scholz overnight. She could recall Dr Rothwell doing so. She could recall Dr Rothwell speaking with Dr McCarthy after Dr Rothwell had examined Mr Scholz and assessed his airway. She recalled that he checked the patient was awake and breathing pattern but no more of the detail. Initially, Dr Rothwell told her he would extubate the patient and she told him no due to her understanding that he was not to be extubated overnight. She said the practice was that the nurses may in fact physically extubate the patient but only on the doctor's order.

154. She had worked ten months in intensive care at the time.

155. She agreed that the record showed a decrease in the level of sedation and this was consistent with what happens prior to extubation. The patient must be awake. She could not remember the fellow who told her to reduce the level of sedation. She acknowledged that over the course of the night he became more aware and his breathing improved. She expressed her opinion that in her experience he was ready for extubation when it occurred.

156. She had been told by the nurse who handed over to her that they might have to keep the patient intubated for longer. She was not told a particular time frame. She had no recollection of Dr McCarthy examining the patient but conceded that it was possible he did so and that they were quite busy around 6.00 am.

The emergency physician, Dr Rothwell

157. Dr Rothwell is an emergency physician. He is not an anaesthetist. He said he could not recall anything specific about Mr Scholz. He had reviewed the records prior to giving evidence. He told the court he had no recollection of the handover about the patient. He had written an entry of his observations into the chart when the patient came into intensive care. This indicated the patient was in satisfactory condition. He worked overnight the night Mr Scholz was admitted to intensive care from about 8.00pm until 8.00am on the 19th May.

158. Dr Rothwell says he remembers very little about the patent at all. He said; *"I don't remember any – any of my dealings with him."*[14]

159. He agreed that there were no notes in the file made by him except the note on admission to the unit. In particular he told the inquest he had recollected nothing about the patient being extubated. He said if he had extubated the patient then he possibly did not make any note about it, but he would have examined him beforehand. He said normally he would have made a note of having examined and then extubated the patient. He said he did not recall discussing the patient with Dr McCarthy. He could not recall if Dr McCarthy had examined the patient either.

160. His comment was that for the time he was with the patient nothing untoward happened and so this explains why he does not recall him. He said; *"I don't remember anything about him at all."* [15]

161. He said he found out within weeks that Mr Scholz had died. He was not asked to make a statement until years later.

162. He explained his usual practice as checking gas exchange to be satisfied the patient is breathing satisfactorily prior to extubation. He would check they were breathing on their own through the ventilator and that they were alert and following commands. One would also have to check that the underlying condition had been treated.

163. Theoretically discussing Mr Scholz' case with reference to the notes, Dr Rothwell said he understood that Mr Scholz had a pharyngeal abscess compressing his airway. Dr Rothwell said if he extubated him it was because he believed the necessity for intubation had passed. He agreed it was necessary to consider possibility of a re-intubation. He acknowledged that to re-intubate or perform a tracheotomy might be very difficult. He said he would not have made the decision to extubate; it would be the decision of the intensivist.

164. Dr Rothwell had previously worked with Dr McCarthy for a 6 month period. Regarding his practice with Dr McCarthy he said that at the very least, if Dr McCarthy had not examined the patient before extubation, then he would have relied on Dr Rothwell's examination of the patient.

The intensive care resident, Dr Kenneth Koh

165. Dr Kenneth Koh is a generally registered doctor who qualified at the University of Queensland. He was working in the intensive care ward when Mr Scholz was admitted. He first saw Mr Scholz on 17th May at about 7.00pm. He had been asked to review the patient for Dr Chahoud for the purpose of assessing him for admission to intensive care. He saw him on the ward initially. He recorded that Mr Scholz was alert and orientated, was able to swallow but had trismus, restricting his ability to open his jaw

[14] page 574 line 53
[15] page 575 line 54

to an estimated 15 millimetres. Dr Koh had been told that Mr Scholz had a dental infection which put his airways at risk. This was the reason Dr Koh had been asked to assess him. He recorded right sided swelling extending down the right side of the neck and a very slight shift of the trachea to the left. This could be potentially dangerous if there was further swelling. There was no stridor.

166. He examined his cardiovascular presentation which did not cause any concern. There was good air entry into the lungs. He called Dr McCarthy, the consultant in intensive care who had the authority to admit a patient to intensive care. Based on Dr Chahoud's concern and Dr Koh's examination, Dr McCarthy admitted Mr Scholz to intensive care.

167. The plan that was recorded in conjunction wit Dr McCarthy was to admit him overnight to intensive care, administer intravenous antibiotics, provide oral fluids as tolerated, and make observations hourly. These were to note the degree of swelling, tracheal shift and any stridor. As well, the standard recordings of temperature, pulse and blood pressure were to be taken every two to four hours. Any concerns were to be notified. He was then to be reviewed in the morning. The blood tests ordinarily performed daily in intensive care wards were ordered not to be done.

168. The next occasion on which Dr Koh saw Mr Scholz was 20th May 2002. An entry was recorded in the chart at ten to four in the afternoon after Dr Koh had been called to the ward by a nurse to review Mr Scholz due to an airway problem. Dr Koh saw Mr Scholz from about three thirty. He was told that Mr Scholz had become acutely short of breath and his oxygen saturation on room air had fallen. He was said to have been sweaty with a fast heart rate and appeared to be distressed. However, when examined by Dr Koh he observed that Mr Scholz was using a saline nebuliser and his oxygen saturations were 100per cent. He was no longer distressed. He was receiving oxygen. Dr Koh said he spoke to Mr Scholz but he could not recall whether Mr Scholz verbalised back to him. His tachycardia had settled to 90 which Dr Koh considered to be the high end of the normal range. Dr Koh's notes were made after he had examined Mr Scholz and he then read the file history. He noted from the file history that there had been difficulty swallowing and a swollen tongue and that he was not swallowing saliva.

169. He noted, after discussing the matter with Dr Chahoud by phone that a chest x-ray was to be arranged. Dr Koh considered that the problem may be mucous plugging in the lower respiratory tract. He ordered normal saline to be administered via nebuliser and four hourly chest physiotherapy. He noted oxygen as required and to wait for Dr Chahoud to review the patient. If there was a concern the staff was to call him and the phone number was recorded. Dr Koh said he was not worried about Mr Scholz' condition after he examined him. He had noted "unlikely upper airways". He considered the immediate mucous plug had been expelled by Mr Scholz. Dr Koh did not observe any signs of upper respiratory

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obstruction. He did not see the patient distressed and the oxygen saturations were normal. There was no stridor.

170. Dr Koh then saw Mr Scholz at about 4.15 but there was no note made at the time. Dr Koh said he was told again by phone, this time from Dr Chahoud, to see Mr Scholz for admission to the intensive care unit for ventilation and or intubation. Dr Koh went down to the ward in about a minute. He said Mr Scholz was sitting upright in bed. He looked distressed. His wife was there. Mr Scholz looked like he was short of breath and having trouble breathing. He quickly examined him and confirmed he was having trouble breathing despite the pulsimeter reading 100% saturation for oxygen. Dr Koh saw that Mr Scholz was using accessory chest muscles to help him breathe.

171. Dr Koh was required to discuss admission of a patient to intensive care with the consultant. He spoke by phone with the consultant on duty at the time, Dr Henderson. He informed Dr Henderson of the recent history of the patient and that Dr Chahoud wanted the patient in intensive care. Dr Henderson agreed. This was about 4.30pm.

172. It was at this time that Mr Scholz went into respiratory arrest. Dr Koh was at the doorway and he returned to the bed and laid the patient down and asked for a bag and a mask to ventilate Mr Scholz. An arrest was called by depressing the button on the wall calling the arrest team to the ward. He attempted to keep Mr Scholz' tongue out of the way. It was a very short time before other people arrived. Dr Koh attempted intubation. He could not see the vocal chords when he attempted the intubation. The aim is to pass the tube through the vocal chords.

173. Eventually it was Dr Hopkins who managed to intubate Mr Scholz. This was an estimated half an hour after the respiratory arrest had occurred, and too long for Mr Scholz to have survived.

174. Dr Koh doubted whether moving Mr Scholz to theatre after the arrest had occurred would have improved the outcome.

175. Dr Koh repeated that when he reviewed Mr Scholz between 3.30pm and 3.35pm he did not believe there was upper airways obstruction at that time. Therefore he did not think it was necessary to intubate him at that time. He had also recorded that the trachea was midline and not displaced by swelling.

176. Dr Koh said things were happening very quickly and although there was obviously some form of obstruction he had not recognised it as upper airway. In hindsight Dr Koh acknowledges that during the ten minute or so period when he came down the second time to see Mr Scholz, he should have attempted an immediate intubation. He did not recognise Mr Scholz to be acutely unwell and so he rang Dr Henderson rather than initiating intubation or moving him immediately to intensive care.

177. Dr Koh confirmed that pathology test results indicated the antibiotics which had been prescribed were appropriate to treat the organism swabbed from Mr Scholz' mouth. A question was raised whether the presence of pseudomonas could have been the causative agent for rapid infection leading to the swelling which caused the fatal airway obstruction. Dr Koh noted that abscesses can be difficult to reach with antibiotic because they are by their nature closed off.

178. Dr Koh confirmed that where a patient is initially intubated because of an airway problem, the decision to extubate is very important. He confirmed that it can be very difficult to re-intubate if necessary and may require an "awake" tracheotomy to be performed. This would be necessary because a patient with breathing difficulty could not be anaesthetised.

179. Dr Koh's evidence was that it would be the intensivist who would examine the patient and make the decision to extubate where there was an airway problem. The patient's overall condition would be reviewed.

180. Dr Koh reluctantly conceded that although he had recovered by the time he saw Mr Scholz at 3.30, there were serious signs of a problem. He acknowledged the reason for the surgery was a serious infection process near to the upper airways. He conceded there was always a risk of re-infection. Respiratory distress could be a sign of trouble. He looked into his mouth and noted the swollen tongue, but did not use a laryngoscope to try to see if the vocal chords were visible. He could not recall any conversation with Mr Scholz nor could he recall whether he checked with the wife or parents for their comments.

181. Dr Koh knew the patient's background and the underlying concern about the airway. He presumed he told Dr Chahoud during the phone call what he had recorded on the chart but he didn't have an independent recall of doing so (namely information about swollen tongue etc).

Director of intensive care, Professor Alan Henderson

182. Professor Alan Henderson is a well qualified consultant physician and the director of intensive care at the Holy Spirit Northside Hospital. He was also the director of medical services. In that role, he participated in the initial hospital audit review of Mr Scholz' death. This is a review of the charts which is then referred to the hospital death audit committee if it appears the death was unexpected. He was the chairman of the hospital death audit committee.[16]

183. Dr Henderson commenced with acknowledging that neck space infections are always potentially lethal. Dr Henderson spoke with Dr McCarthy on the morning after Mr Scholz' death. He also spoke with Dr Chahoud and intensive care staff. When speaking with Dr Chahoud he

[16] Exhibit 17

said it was in his role as head of intensive care rather then as the person chairing the audit.

184. Dr Henderson did not see Mr Scholz until he had the cardiac arrest. He made comments from review of the chart.

185. He indicated there were two schools of thought on appropriate management once surgical drainage had been performed. The first is to leave the patient with endotracheal intubation. The second is to perform tracheotomy at the time of the operation. Dr Henderson preferred the latter approach. This was because patients with the illness are at risk of death from infection, but they are even more at risk from death by airway compromise. If tracheotomy is performed immediately it reduces the risk.

186. The more modern endotracheal tubes can be left in position for a week or ten days without damage to laryngeal apparatus. He was asked if there was a risk if the endotracheal tube had remained for a longer period after surgery. Dr Henderson considered there was if something happened to the tube, for example blockage or bursting of the balloon, or dislodgement. The probability of reinserting the tube is then very low. He explained the endotracheal tube has a balloon on the bottom of it which occludes the trachea. His view was that maintaining an airway in this manner was unstable and less secure than a tracheotomy. The suggestion was *"it is worth considering doing a tracheotomy at the first operation, not "must", but it's worth considering "*[17]

187. Subsequently one of the members of the first committee raised the point that it might be more appropriate for Dr Henderson to step aside from the review given that he had attended at the later stage of management of the patient. Dr Henderson had no problem in agreeing to this suggestion.

188. On the issue of who performed the extubation, Dr Henderson said; *"It is my understanding that he (Dr McCarthy) was there when it was performed".*[18] Dr Henderson explained *that "the physical removal of the tube would be done by the nursing staff under the supervision and instructions of the consultant. Junior medical staff is not empowered to extubate people".*[19] The decision to extubate is the consultant's only but a nurse can physically perform the task under supervision of one of the medical staff of the unit. He was describing the standard procedure; he was not present when the extubation occurred. Dr Henderson would have expected there to be a note from Dr McCarthy indicating his decision to extubate the patient.

189. In his practice, when deciding whether or not to extubate a patient he would be unlikely to extubate the patient at this stage. This was because on his experience of patients with a condition such as Mr Scholz, the airways are unstable and subject to risk of late swelling. It is a matter of

[17] page 196 at 56-58
[18] page 198 line, 3-4
[19] page 198, line6-10

judgement when it would be safe to extubate. It could be days or weeks. Where he has managed a patient with such a condition, and in the absence of a tracheotomy, he formulates an airway management plan with the surgeon. The anatomy is discussed in order to be prepared for problems. He would check the lower airways via CT to see that the infection had settled and the upper airway with fibreoptic inspection. He would wait sufficient time to reduce risk of haemorrhage into the infected site or sudden swelling.

190. The tube in question was only in place overnight.

191. Dr Henderson indicated he would write in the chart "extubate:", but would not record who physically did so. He would note the basis for the decision. He would note the time and record the plan for management including consultation with the surgeon. Practices of record keeping vary in his experience.

192. For the vast majority of cases he considered that the decision to extubate rests with the consultant intensivist. The exceptions are if there are complex abnormalities of the upper airway anatomy. In a case such as Mr Scholz', Dr Henderson's preference is to have an agreed airway management plan. It would not necessarily involve consulting with the person who had inserted the airway, but may do so if there was a particular concern.

193. His comment on this case was that he considered it highly unlikely that he would have removed the endotracheal tube. The tube is removed once it is deemed the airway is safe. To reach this conclusion there must be sufficient time to conclude that secondary swelling is not going to occur. He would have discussed the patient with Dr Chahoud because he had surgically explored the neck. He would have repeated the CT scan to look for hidden collections or any other compromise to the airway. He would have put the bronchoscope down to inspect the airway for the level of swelling. The final test would be to deflate the balloon to see it the patient could breathe around the tube. This procedure is essential where there is an upper airway obstruction as there was in Mr Scholz' situation. He emphasized that these are clinical judgements for the individual intensivist. If there was subsequent swelling it would be very difficult to reinsert the tube.

194. Dr Henderson would have expected a patient to be closely monitored after removal of the tube. He would have expected that this would occur on the intensive care ward until the airway was deemed safe. This is his normal practice because a person with an unstable airway can deteriorate very rapidly. The risk was secondary swelling and the intensive care unit is a more secure environment. Dr Henderson said he would not have managed the patient in the way he was (with early removal of the tube). He could not say how many days of close monitoring might be required.

195. Dr Henderson expected that a nurse would make a record in the chart if there was a change in clinical condition. Nurses on the ward would have received verbal handover from intensive care nurses.

196. Dr Henderson agreed that if there was difficulty with breathing at 2.30 in the afternoon it would indicate that there is potential for trouble. Dr Henderson would expect that this would trigger a medical alert.[20] Dr Henderson explained that the red button in the patient's room is for a cardiac arrest type emergency. There is another one next to it which is an urgent ward call button used by the nurses to get urgent help from other nurses. There is also the standard nurse call button to ask a nurse to attend. The two urgent buttons have to be de-activated once pressed. A record should be made in the chart if the call was for an urgent clinical matter. A nurse is required to assess and make a judgement call whether to call the visiting medial officer.

197. When Dr Henderson attended Mr Scholz he had already arrested and he considered there was no chance of saving him. In this hospital there is a cardiac response team made up of resident medical officers in the intensive care unit, plus a rostered senior nurse, and nursing supervisor. Dr Henderson believes the cardiac emergency team was called out for Mr Scholz. Dr Henderson understood that the team attended as was indicated, including Dr Koh who was the intensive care resident on duty. He would estimate emergency response at about 90 seconds. If the response to an emergency call was seven minutes he considered it to be too long.

198. The record says; *"Asked to attend ASAP because of an airway problem".* That would suggest it wasn't called through as a "code emergency call". The hospital system does record and log cardiac arrest calls and false calls. Dr Anderson was in the library of another hospital, Prince Charles when he received the call from Dr Chahoud. Dr Henderson returned to gear up intensive care anticipating their return of the patient in due course from surgery. He discovered the team had gone downstairs in response to a cardiac arrest and he went also. He saw that they were trying to achieve a wide exposure surgical airway. The doctors attempting this were from the separate emergency clinic on site. This is a separate company to the hospital. Someone must have called them and they also responded. They do not form part of the hospital's planned response team. They always undertook to attend in the event of an emergency.

199. Ms Rosengren challenged Dr Henderson regarding the assertion that it was likely that Mr Scholz' airway was still unstable. He agreed with the proposition that it is wise to err on the side of caution in such circumstances.

200. Dr Henderson referred to the note in the file to leave the patient intubated overnight. It had been put to him that Dr Chahoud's evidence

[20] page 211 line 18-20

was that it was his intention to review Mr Scholz after in intensive care the following morning and then to see him within the next 12 to 24 hours if things had not improved to insert a tracheotomy.

201. Dr Henderson's response was he considered it preferable to do the tracheotomy first. Dr Henderson agreed Dr Chahoud's approach to review was reasonable. Dr Henderson said if there were no discussions between Dr Chahoud and Dr McCarthy this would be different to his practice. He would have established an airway management plan having involved Dr Chahoud in the plan. This is not "required" in intensive care. It is a question of clinical judgment. It is a consultant led service. After this event Dr Henderson indicated there had been discussions amongst the intensive care committee.

202. Dr Koh worked under the supervision of the intensive care consultant at the time. If he attended on the ward then he was subject to supervision and report to the visiting medical officer, who would be Dr Chahoud. This is because ICU is responsible to manage emergencies within the hospital.

203. Dr Koh had been working for more than two years with the hospital in intensive care. Dr Henderson reviewed the notes written by Dr Koh at 3.50 on 20th May. He agreed Mr Scholz was in a serious condition based on those notes and that it was likely to be an airway obstruction problem.

204. Dr Koh rang Dr Chahoud and indicated it was his opinion that Karl was not obstructing but that he had lower respiratory tract wheezes and was being treated with saline nebulisers. Dr Chahoud indicated he was still driving towards the hospital.

205. Dr Henderson said it had been Dr Koh's assessment that it was not an upper airway obstruction and this presumably explained why he left the patient. The critical issue is if it was an upper airway obstruction. A lower obstruction such as caused by asthma would be less of an emergency. Dr Henderson however, did not consider that the diagnosis reached by Dr Koh of lower respiratory obstruction was likely.

206. He explained that the situation was very difficult. He would have alerted theatre that there was an emergency tracheotomy to be done. He might have attempted to pass a tube down, but it would be very difficult, even with fibreoptic guidance. By this stage a whole exploration of the neck would be required to locate the trachea due to the swelling and distortion of anatomy. The entry in the record indicated the patient was in serious trouble. Dr Henderson thought there may have been a lulling into a sense of false security when Mr Scholz coughed up a mucus plug. This presumably was blocking the diminished amount of airway he had left. There was then short term improvement and then sudden decline. As Dr Henderson pointed out, even experienced people could be misled in this situation.

207. Dr Henderson indicated that if a life threatening emergency is identified the consultant can be called and will attend. When Dr Koh returned to

ICU, Dr Henderson was in the library. There was another consultant, Dr Fraser on the unit at the time.

208. When Dr Chahoud arrived at the hospital he considered the patient was in an emergent situation and called Dr Henderson. This was about 4.00 or 4.15pm. Mr Scholz was at imminent risk of obstructing. He requested transfer to intensive care but Dr Henderson considered his best chance was if he went to theatre for tracheotomy. That is where the required equipment would be. The library is a short walk from the hospital.

209. The obstruction happened within a very short time of this conversation before arrangements had been put in place for surgery.

210. There was an entry by Dr Sullivan from the emergency unit at 4.40pm. He and an anaesthetist Dr Lew attempted a mini-tracheotomy and a percutaneous tracheotomy. Then Dr Fraser, the consultant from intensive care arrived and tried to intubate repeatedly. Dr Hopkins then tried a tracheotomy assisted by Dr Henderson who had also arrived by that time. The situation was an absolute emergency and note recording was the least priority so the records may not be entirely sequential or accurate regarding timing.

211. Dr Henderson rejected the view that he should have attended more urgently, noting that the intensive care consultant at the time, Dr Fraser did attend before him. There were also other anaesthetic experts (Dr Lew) from theatre. Dr Henderson went to intensive care first and both Drs Koh and Fraser had already left to attend on Mr Scholz.

212. I do not accept there was an inadequate or delayed response from intensive care as far as Dr Henderson's attendance was concerned

213. Dr Henderson's evidence was that once you are intubated, then you can be anaesthetized if a tracheotomy is then considered advisable. Dr Henderson recalled a similar situation in recent times when the patient was intubated while awake with fibreoptics then anaesthetized and the tracheotomy performed. Difference of opinion exists between Drs Chahoud and Henderson.

214. Counsel for Dr Henderson/hospital considered the difference was about whether the tracheotomy was done after the extubation rather than at the outset.

215. It was clarified with Dr Henderson that at the first presentation at hospital an "awake" tracheotomy would not be required. He could be intubated first, and then a tracheotomy performed under anaesthesia. The intubation tube would be moved a little to enable the tracheotomy to be performed.

216. Dr Henderson acknowledged that it was a judgement call at the time to be made by the surgeon in conjunction with the anaesthetist. There was

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difficulty due to the degree of swelling which had distorted the anatomical landmarks.

217. As Dr Henderson said; *"We have two different ways of managing a problem: I have one preference, Dr Chahoud may have another. It's not that one's right and one's wrong. It's just different ways of doing it."*[21] *...No-one is saying that these patients are easy to do."*[22]

The anaesthetist and intensive care consultant, Dr Fraser

218. Dr Fraser is also an anaesthetist and intensive care specialist. He was called when Mr Scholz finally collapsed. When Dr Fraser arrived he said that Mr Scholz' heart had already stopped. He saw Dr Sullivan trying to obtain an airway through the centre of the neck. Supplemental oxygen was being given through the mouth. He tried to assist in getting an airway and observed the neck to be very swollen. Dr Fraser said that there was no cardiac output and Mr Scholz had dilated pupils. There was very little blood flow from the operating site which was consistent with there being no cardiac output. He had been called when he was at the Royal Children's Hospital and estimated it would have been fifteen minutes before his arrival.

219. He said that cardiopulmonary resuscitation was happening which increased the difficulty of trying to obtain airway access. Dr Fraser tried to obtain an airway from higher above. He called for the surgeon because those present could not establish a tracheotomy. The trachea is normally in the centre line but dissection was difficult because of the degree of swelling in all the tissue.

220. Dr Fraser agreed that difficulty earlier in the day with swallowing and speaking could be consistent with the swelling he saw.

221. Dr Fraser said before a decision was made to extubate he would consider; whether the patient was alert, cooperative and sensible? If a patient is confused and agitated extubation should not occur. Review should be made of the degree of swelling, and the ability to breathe. Sedation would be reduced to make the review. His practice would be to deflate the cuff and check by blocking off the tube with his finger that air was coming around the tube through the natural airway.

222. He said the release of infection (pus) via the drains inserted during the operation might have reduced the pressure in the neck and therefore re-intubation might not necessarily be difficult. However, if there was re-accumulation of pus or further swelling, this would make it difficult to re-intubate. In his experience breathing problems after extubation often developed within a short period of time, in the first ten to twenty minutes. It was unusual in his view that the airway obstruction did not occur until some thirty six hours after extubation. He speculated there may have

[21] page 235 line 10-13
[22] page 235 line49-50

been another separate accumulation of pus that was not being drained by the two drains inserted. He also said the original site of infection could be the reason for the shift in the trachea and the swelling although the delay was unusual before the problem became critical. As with other medical opinion, Dr Fraser said that good nursing care was the means by which the patient's condition would be monitored to ensure the airway was patent. If he was seen to be using accessory muscles to breathe or appeared to be sucking air in, that would indicate a problem. Increase in respiratory rate was also an important sign. The physical observation of what the patient looked like was critical. Problems with swallowing were not as critical an indictor in Dr Fraser's view. Nor were the oxygen saturation levels as these may only dip immediately before the final event in a young, otherwise healthy man.

223. It was also important for patients to be able to tell staff how they were feeling. Scribble pads can assist when there is a difficulty in speech. Overview by the treating doctor including review of the appropriate antibiotic was all part of the care required. There may be delay before test results from pus can identify the organism to be treated. Follow up blood tests would be indicated a few days after surgery. He would not expect the elevated temperature to normalise within twenty four hours after surgery. The trend of the temperature would be important. The most important method was careful clinical assessment of his condition. If the patient deteriorated there may be a referral back to intensive care. Discharge into the drains may be due to infection but could also be from the tissue due to inflammatory process or as a result of alteration in platelet reaction due to antibiotics.

224. Dr Fraser considered that the recent history and symptoms that Mr Scholz was demonstrating at about half past three were a reason to be acutely concerned. These symptoms included restricted opening of the jaw, a swollen tongue, and a history of difficulty in swallowing. There had also been a recent incident when Mr Scholz was acutely short of breath, tachycardic and his oxygen saturations had dipped to around 80 per cent. Upon examination Mr Scholz indicated he had coughed up some phlegm and his saturation levels had improved. Dr Fraser considered there would still be a risk to the airway. He agreed that at this time he might have considered taking the patient to intensive care and consideration of assisting his airway by insertion of a tube in a safer environment than the ward.

225. Dr Fraser was then asked to consider the additional information that when Mr Scholz was examined by the intensive care fellow his condition had improved. In particular, his oxygen saturation had improved to ninety nine per cent, his heart rate was ninety, his blood pressure had fallen to 140 over 80, his central venous system was normal, air entry to his lungs was good, and drains were functioning. The impression was therefore gained that the problem had been a mucous plug. The existence of trismus was ongoing rather than a new situation.

226. Dr Fraser thought that this was less concerning but he would have gone to see the patient to arrange his transfer to a safer environment should intubation be necessary.

227. Dr Fraser was uncertain as to how the trachea might have shifted from mid line position to off centre within an hour. He speculated about the coughing required to free the mucous plug, but could not say if this explained the difference in findings between the two examinations. He noted that he had the advantage of an open excision of the neck to reveal the extent of interior swelling and the mid line shift of the trachea. He expected that the examination by the intensive care fellow would have been very difficult through the skin and swelling to discover the position of the trachea.

228. Dr Fraser agreed that the practice of intensivists contacting the surgeon to inform them of extubation of a patient was a matter of professional courtesy, rather than obligation. The intensivists deal with tricky airways, they do not call on the anaesthetists to help them in his experience.

229. Dr Fraser clarified that the registrar must discuss with the consultant before extubating, but the consultant was an independent expert in airway management who had responsibility within intensive care to manage the patient's condition. He also reviewed the individual observations noting that the pulse rate had increased from 10.00am on the Monday from 75 up to 110. Blood pressure has similarly increased form 120/60 to 170/90. The temperature was also a little elevated but the trend was downwards. These observations would indicate some change but do not indicate what has occurred, whether it be pain or shortness of breath.

230. He would expect nursing staff to be checking with the patient whether he had pain or any other problem, particularly as he changed from room air to requiring oxygen during this period. The nurse should request a review by a doctor if there was concern for the patient based on the change in observations. I note that this was done and Dr Koh was called to review Mr Scholz.

231. The frequency of observations can be set by a doctor, but if not, the default level is set by normal nursing practice on the ward. If there was concern for a patient in intensive care after extubation then it is likely the patient would be held there under observation until it was decided it was appropriate to transfer back to the ward. There may also be a direction for "special" nursing on the ward if the situation required this

Intensive care nurse Pottinger

232. Nurse Pottinger had just commenced her shift on 19th May when Mr Scholz was extubated by Dr Rothwell. She assisted him. She could not recall the details of this particular extubation. All she recalled was that it happened as handover occurred. She does not recall which doctor it was but said there were no difficulties with the extubation.

233. She said over the shift she recalls there was a lot of discharge from the drain. Mr Scholz had significant swelling which she did not think changed over the shift. She recorded in the notes that he had difficulty in swallowing but she could not recall bringing it to the attention of a doctor. If she thought it was of concern she would have done so. All she could recall was the intensive care fellow extubated the patient.

234. After considering all the evidence on the issue of extubation, I am satisfied that the instruction from the anaesthetist focused on the importance of maintaining the intubation tube overnight. The expectation was that the patient was likely to require intubation for a longer period but this was a decision to be made by the intensive care unit as indicated by the patient's condition. I am satisfied that there was no direction that the tube should remain in place for five days.

General ward nurse Ahern

235. Nurse Ahern was performing four hourly observations but changing dressings more frequently once he returned to the ward. She administered the saline mask which was to assist him in breaking up any mucus accumulations. She made an entry on the chart at the end of the shift that he was complaining of thick sputum and difficulty expectorating. She did not think he had difficulty breathing; more annoyed that he could not cough up the sputum. She finished the shift around 3.00pm. She handed over to the next shift. She had been responsible for six patients and stated that Mr Scholz was the most ill of these people.

236. She said she looked in on him more than other patients, but this did not mean more frequent formal observations. He was suctioning his own secretions in the mouth. The nebuliser was simply set up for him. The records show that he did subsequently cough up a mucus plug and his oxygen saturations improved to 100 %.

237. She did not observe Mr Scholz exhibiting signs of shortness of breath. In the afternoon his saturations improved to 97%. Also, if he had difficultly with his airway she would expect elevated blood pressure and pulse rate.

238. She acknowledged she gave Mr Scholz morphine but failed to make an entry as required. She explained that if a patient uses the buzzer to call a nurse, then when the nurse arrives they activate a buzzer which shows on the outside of the room that a nurse is present.

239. She confirmed that Dr Chahoud had given his mobile phone number to the ward for contact if there was any concern for Mr Scholz, and that Dr Chahoud had rung the ward in the morning to check up on Mr Scholz' progress. He rang again later in the morning to say he was coming in.

Nurses on the ward regarding the buzzers

240. On the morning of 20 May 2002, Registered Nurse Jacqueline McDonald was working as the supervisor of the ward. She answered a

buzzer call from Mr Scholz' room. Mr Scholz was washing out his mouth in the bathroom. His wife was with him. She could not remember what it was that needed attention but she dealt with it. The designated nurse for Mr Scholz' care was Nurse Ahern until the afternoon shift took over. Then a team of two nurses was responsible for him, one enrolled, one registered.

241. She explained the buzzers available in the room. The first is the green patient call buzzer, and then a yellow labelled staff assist button and then a red emergency button. The red button does not have a label. When the green buzzer is called a light goes on outside the room and on a panel with a sound that can be heard through the ward. The buzzer is turned off by physically turning it off on the wall in the patient's room.

242. The yellow staff assist button gives a different tone. The red emergency button sets off a pager to the emergency team in intensive care telling them where the call has come from. It has a different sound again. Usually a back up call is also made to the intensive care unit to confirm the room number. If the button was turned off after being de-pressed the team would still have to attend. The emergency button is beneath a clear plastic shield so that it cannot be accidentally depressed.

Code blue team responding to medical emergency

243. Amanda Porter was a registered nurse who was a member of the emergency response team at the Holy Spirit Northside Hospital. She had sixteen years experience in this area. If a "Code" was called form the ward via buzzer and then cancelled the team is still expected to attend unless they receive a phone call explaining the basis on which the call has been cancelled.

244. She told the court that Mr Scholz had a dedicated nurse while in intensive care. On the afternoon of 20 May there was adequate staffing with 6 patients and five staff with one on call. She was working on the 20 May and states there was only one code blue called for Mr Scholz that day. She is unaware of any activation and cancellation of the emergency buzzer relating to Mr Scholz other than the incident about 4.00pm.

Pathology tests

245. There was evidence from Dr Drummond of the Queensland Medical Laboratory Pathology concerning the tests on aspirate and swabs from Mr Scholz' operation on 18 May.

246. The results were faxed late on the evening of 18 May 2002. The fax number was the intensive care unit of Holy Spirit Northside Hospital for the attention of Dr Chahoud. The time was close to 11.00pm. The results are faxed in accordance with the direction of the clinician. The request form marks the hospital as the recipient of the report.

247. Swabs showed streptococcus and bacteroids. This showed 3+ gram negative bacilli. Bacteroids are gram negative bacilli.

248. After death there was testing which showed what was to be expected namely the spread of mixed enteric bacteria that had spread after death from the bowel.

249. There was also a post mortem swab taken from the dental abscess. This was after Mr Scholz had been on amoxicillin for 3 days. Dr Drummond would expect that the combination of amoxicillin and metronidazole would deal with the usual flora found in the mouth. The side effect of this is that other organisms have the opportunity to proliferate, including pseudomonas. This often explains why post mortem pseudomonas can be found in patients who had been taking a range of antibiotics.

250. The dental abscess swab showed leucocytes 3+ gram positive cocci 3+, epithelials- nil and normal oral flora including pseudomonas SPP1+. There was no candida.

251. The comment from Dr Drummond, who is a microbiologist as well as a pathologist, was that this is what you would expect in sampling the oropharynx. The effect of the antibiotic explains the difference in the post mortem results.

252. Dr Whitby said at the time of death the body's defences are eliminated and normal bacteria particularly those in the gastrointestinal tract multiply to a great extent and spread into the body. This is why the post mortem samples grew enteric bacteria. They are of no relevance to the clinical situation.

253. Dr Drummond agreed.

254. Dr Whitby's report continued that after death pseudomonas continue to multiply in the oropharynx. He did not find it surprising that it was present.

255. The intra-operatively taken test results are the more reliable in Dr Drummond's opinion. They are taken within a sterile field from the site of the particular pathology being tested.

256. You would not generally expect gram negative bacteria from a person's oral swab if they had not been on antibiotics. You would not expect to find pseudomonas.

257. Dr Drummond's evidence was that the samples taken from the operation site did not develop pseudomonas on culture. Therefore they were not present. He said the pseudomonas organism is very easy to grow on culture as distinct from bacteroids. The cultures were grown for 48 hours - ample time in Dr Drummond's opinion to grow if they were present. It would have shown itself within 24 hours.

Independent Expert Opinion Professor Cade

258. Professor Cade is the Director of Intensive Care at the Royal Melbourne Hospital. His qualification includes being a physician, a chest physician and an anaesthetist.

259. He referred to the intensive care cuffs usually used as being "soft". In intensive care wards the preferred cuffs are low pressure, high volume. Airway damage can occur when there is prolonged intubation. Tubes used in the course of an anaesthetic are typically tougher with a more robust cuff. Their long term use can cause problems with damage to the upper airway. He identified the 6.5 RAE tube as a standard tube used during an anaesthetic. Ideally such a tube would be removed within 24 hours, preferably 12 hours. If not, then an anaesthetic would be given to change the tube.

260. He noted that Mr Scholz died 33 hours after extubation. On reviewing the material he could not see a connection between the extubation of the patient and the subsequent death. He expressed the view there was inadequate antibiotic cover. Here the infection had gone deep into the tissue of the muscles of the neck. He noted the coronial autopsy result indicated the presence of pseudomonas. He understood the culture which showed up pseudomonas was taken from the abscess itself. He said this organism was not covered by the antibiotics ordered. The organism is normal gut bacteria but rare in oral cavity. It is common in ear infections.

261. Professor Cade did say that there are always caveats on autopsy samples but the neck is a long way from the gut. On balance, he considered the pseudomonas to be relevant. A test done of the aspirate from the abscess taken at surgery was pointed out to Dr Cade. The results from pathology testing at the time only revealed the organisms to be expected from oral sepsis. They were able to be treated by the antibiotics ordered.

262. Professor Cade interpreted the presence of pseudomonas from a sample at autopsy as one of multiple organisms present. He said these infections are commonly microbial meaning multiple organisms.

263. He noted the pharyngeal area would normally be a sterile area whereas the mouth would not. Therefore the presence of pseudomonas in the pharyngeal swab is more likely to be significant. The lung is more difficult to interpret.

264. Pseudomonas is generally aerobic and would be revealed within 48 hours of culture. As it was discovered in the deep tissue of the neck and therefore unlikely to be autopsy contamination, he concluded the organism was more likely to be present during life than not.

265. The autopsy was conducted within 18 hours (which is a short time) and this also adds to the likely existence of pseudomonas in life and not just contamination.

266. He explained that the gram positive cocci are the streptococcus. The Gram positive bacilli are the bacteroids. Gram negative bacilli were not identified in culture and pseudomonas is a gram negative bacillus.

267. In retrospect, Professor Cade considered the antibiotics would not have covered the gram negative bacillus. He considered it *"unfortunate and very unusual"*[23] that the particular organisms were present. Infection went far beyond the typical situation. It would be apparent to the surgeon with the immediate draining of 200mls of pus that it was a deep seated infection.

268. The question was asked, *"should he have been treated with antibiotic aimed at gram negative bacilli?"* when the pathology result came back. He would expect it to be a minimum 48 hours before results were known. The results would flag consideration of broader antibiotic cover with the presence of the gram negative bacilli.

269. If the results were not available but there is known deep seated dental abscess with 200ml pus drained in surgery, the drains continue to be productive over 33 hours post surgery, the patient remains with a swollen tongue, trismus and he has been extubated, would that be a reason to broaden the antibiotic cover? Professor Cade considered it would probably be wise, that it would be a common recommendation to broaden the cover.

270. He noted that Dicloxacillin and Flucloxacillin would cover gram positive organisms particularly staphylococcus, but not gram negative organisms. For gram negative organisms, Gentamicin or Cephalosporin, Cephazolin or Ceftriaxone would be required. These do not cover pseudomonas.

271. Professor Cade had no criticism of the extubation of the patient in intensive care at the time it occurred. Adequate antibiotic cover and adequate drainage were required together with appropriate monitoring of the patient's condition. He considered competent nursing observations could meet the needs including monitoring fever, tachycardia, blood pressure, difficulty breathing, speaking or swallowing. If any of these were deteriorating then intervention would be required. He noted it could be difficult to re-intubate. He noted it was planned to take him to intensive care on the afternoon of 20th May.

272. He was asked to consider that at about 3.30pm there had been an episode of difficulty swallowing, acute shortness of breath, a swollen tongue and reduced oxygen saturation to about 80% and tachycardia up to 110. Professor Cade confirmed these would be very serious and noted that the intensive care fellow was called in response to these matters.

273. The intensive care fellow examined the patient and was told that he had coughed up a mucous plug. He was given high flow oxygen and

[23] Page 632 line 20-21

saturations returned to 100% and heart rate beats per minute reduced to 90. On examination there was no stridor, no lung crackle sounds or wheeze and the doctor considered the trachea was midline. Should the patient have been admitted to intensive care then? The plan was to get a chest x-ray and use a saline nebuliser to loosen any mucous plugging and to obtain physiotherapy to help him expectorate. Professor Cade considered it was completely understandable that this was the conclusion that was reached and that the focus was taken way from the upper airway.[24]

274. A solid mass (the mucous plug) would be hard to expel and would cause problems. Professor Cade acknowledged that it was highly likely that Mr Scholz had a restricted airway at 3.35pm which was compounded by the mucous plug. He agreed it was both factors that were impacting. He was again asked should the doctor have moved him to intensive care. He answered in the affirmative. It was clarified that this was not planned until after 4.00pm when Dr Chahoud came in and decided he wanted him moved. In retrospect Professor Cade agreed that the decision should have been made at 3.35pm rather than 4.00pm. He noted it is very easy in hindsight but stated he considered they were correct decisions made at the time.

275. He conceded it is always going to be difficult to re-access the airway with the ongoing infection in the neck. Professor Cade noted after extubation the patient was in the clear for many hours and he imagined the staff considered the acute airway problem was settling. He referred to notes that Mr Scholz was speaking and swallowing after extubation. He did note though that in reviewing the information that Mr Scholz appeared to be declining on 20th which was when the staff called the intensive care doctor. Professor Cade thought it was reasonable to expect that the mucous plug would be indicative of further mucous in the respiratory tract so the plan to treat with physiotherapy and nebuliser was reasonable. The planned chest x-ray to make sure he didn't have pneumonia was wise.

276. It was pointed out to Professor Cade that Mr Scholz' saturation levels on room air had been low over the 24 hours leading up to 3.30pm on the 20 May. He disagreed that the levels were low – except the reading of 80 which was at the time of the mucous plug immediately before 3.30pm.

277. Professor Cade expected that Mr Scholz would have been seen by the surgeon on the morning of 20th May on the ward or at lunch time if other commitments existed. He would expect a phone call in the meantime and someone else to cover for him if he could not attend.

278. The 6 5 bore RAE tube is a small bore typically used in a big child. It is a very small size for an adult. It will not kink. It does not have a cuff and is designed for short term use. If needed long term, it could have been changed in intensive care on 19 May.

[24] Page 636 lines 40-60

279. It was then put to Dr Drummond that the pathology results were not known at the time of death – so the gram negative bacilli were not known. He still thought it would be perfectly reasonable to extend the antibiotic cover, if there were signs of fever, of systemic sepsis or of temperature over 38.5 and falling blood pressure.

280. Professor Cade's reading of the record noted the patient could swallow and speak whereas there was other evidence that there was still difficulty in swallowing and speaking.

281. Ms Gallagher asked Professor Cade to review Dr Koh's assessment of the patient. He agreed it was a comprehensive assessment and he had no criticism of the assessment. He repeated he thought the clinical focus was appropriate for the conclusion he drew and the treatment was appropriate.

282. Professor Cade indicated that the report to the intensive care fellow of Mr Scholz' condition prior to 3.30pm was the concerning matter in his review of the file. He commented on the lack of notes in intensive care.

Independent expert opinion, Professor Whitby

283. Professor Whitby has qualifications as a physician, pathologist and microbiologist amongst other specialties. He noted in his review of Mr Scholz' history that he had a life threatening illness as a result of the contamination and swelling in his throat on 17 May 2002. He required adequate and effective microbial therapy and adequate surgical drainage. This needed to be followed up with adequate clinical assessment after the surgery and before and after extubation. His clinical signs needed to be observed including temperature, pulse rate, swelling and difficulty breathing, swallowing.

284. He considered that Mr Scholz was tachycardic for most of the day that he died but that after being in difficulty and having nebulised saline, he coughed up a mucous plug. The tachycardia reduced but was still above normal as was his blood pressure. Oxygen saturations increased.

285. Professor Whitby said there was no doubt that he died due to airway obstruction from his pharyngeal abscess.[25]

286. He considered on review that Dr Koh had made a competent examination. Dr Koh clearly thought about the airway. He was wrong in his conclusion but in the circumstances it was understandable how he came to that conclusion. He understood from Dr Koh's notes that there was a greater than 50% chance that the problem was lower airways. He considered upper airways and rejected it.

287. He was asked if he might have been in further difficulty with another mucous plug. Professor Whitby conceded this could be a problem. When

[25] Page 703 line 55-56

Dr Chahoud arrived at 4.00pm he decided he wanted the patient in intensive care and was in the process of arranging this when the patient went into respiratory arrest.

288. Professor Cade considered on review that there had been adequate surgical drainage but inadequate antibiotic cover. There was no cover for pseudomonas.

289. Professor Whitby disagreed strongly with this view. He said the antibiotics were correct for the organisms that were grown in the culture test results. The continual drainage was typical of the streptococcus milleri organism. There may still have been areas not reached by the drains. This could have been how he had obstruction that was not recognised. This occurred in spite of what looked like profuse drainage. He explained that an abscess can have cavities within it so that drainage may access some but not all areas which would continue to grow, .i.e. development within a loculated abscess.

290. If there was not continued improvement then a repeat CT would be indicated to check that the abscess was draining. The closed off areas of an abscess are not easily penetrated by antibiotics and continue to cause swelling. There needs to be an indication to do a repeat CT scan 48 hours after the operation.

291. The first sign of critical airway compromise was at 3.30pm. The trismus would have been a significant impediment to the examination of the airway by Dr Koh. If he had not coughed up the mucous plug, he would expect that Dr Koh would have been more inclined towards upper obstruction as a diagnosis. He was confounded by the fact that Mr Scholz appeared to get better from an alternative diagnosis (the mucous plug.)

292. As Professor Whitby said; *"I think that's what's misleading here. That clinician involved thought he'd made the diagnosis, the patient was treated, the patient got better on the basis of his observations and that led to a misdiagnosis."*[26] Dr Koh considered both possibilities, of upper or lower airways problem, and he decided on the basis of the patient's response that it was a lower airways problem.

293. Professor Whitby agreed there was always the possibility that it was an upper airways problem. The upper airways problem was to some extent masked by trismus and a swollen tongue.

294. It was suggested to Professor Whitby that in all the circumstances Dr Koh should have decided to admit Mr Scholz to intensive care and possibly to theatre. It was suggested this might have saved his life. Professor Whitby responded that in retrospect with hindsight if he had been admitted and had a tracheotomy it would have preserved his life, but he did not consider this was the decision to be made at the time. The

[26] Page 710, line1-3

patient could have had both diagnoses, and the doctor was an intensive care fellow whose job revolves around clearing airways, maintaining airways, circulation and breathing. He assessed both possibilities on the basis of the evidence. In hindsight the diagnosis was wrong, but Professor Whitby considered it to be open at the time.

295. Professor Whitby confirmed that Mr Scholz suffered from deep abscesses of the floor of the mouth, around the pharynx and neck caused by two organisms, streptococcus milleri and bacteroides fragilis originating from dental infection.[27] He asserted he was an expert to provide opinions on the nature of the infection, the appropriateness of the antibiotic prescribed and the relevance of pseudomonas. On the issue of Mr Scholz' response to antibiotic he considered that the clinical judgment at the time was the best opinion.

296. Mr Scholz was admitted to hospital on Friday 17 May 2002. He was commenced on 1 gram of Amoxicillin and 500 milligrams of Metronidazole. They were administered intravenously 8 hourly. He was operated on the following afternoon of 18 May. A swab was taken via the oropharyngeal area into the abscess. Pathology reports confirmed the two organisms present in the abscess. The results were sent to the intensive care unit late on the evening of 18 May.

297. Professor Whitby said the result included 3+gram negative bacilli. He confirmed this was consistent with the growth of bacteroides fragilis, which is an anaerobic gram negative bacillus. He agreed with Professor Cade that pseudomonas was an aerobic gram negative bacteria but Professor Whitby thought it highly unlikely that these first test results showed the presence of pseudomonas because pseudomonas grows rapidly in laboratory mediums. If it had been 3+ pseudomonas present it would have overgrown the other two organisms and would have been reported. There was a heavy growth of bacteroids and pseudomonas was not identified or reported. Therefore these two facts lead to the conclusion that the gram negative bacillus was the anaerobic gram negative bacillus bacteroid – not pseudomonas.[28] I accept this conclusion.

298. Professor Whitby said these results might have prompted the intensivist to add antibiotics to cover aerobic gram negative bacilli but they would have taken them out again within 24 hours once the culture results came back because the gram negative bacilli are in fact bacteroids.

299. Professor Whitby advised that had an antibiotic such as Gentamicin been added it would not have changed the ultimate outcome. The two antibiotics that were being administered were appropriate for the two organisms causing the infection. He was 100% confident of this assertion because the swabs had been taken intra-operatively directly from the

[27] Page 712 line 5-10
[28] Page 713, 20-30

abscess. The two organisms are sensitive to the two antibiotics prescribed.

300. Professor Whitby noted the finding of pseudomonas in samples taken at autopsy from the pharyngeal space. Professor Cade considered this to be a reliable indicator of the presence in life because it was deep within the tissue and unlikely to have been exposed to contamination.

301. Professor Whitby noted that when a patient is treated with antibiotic Amoxicillin for a couple of days, the normal flora of the oropharynx changes. The effect of the antibiotic is it leaves behind those organisms not sensitive to it - the gram negative organisms. The pseudomonas was not detected in the abscess; it proliferated as a response to the antibiotic.

302. Its presence in autopsy samples can be accounted for. There were three autopsy samples taken. The blood cultures were full of enteric bacteria. This is meaningless because there is a spread of such organisms after death. Professor Whitby said you don't have to be dead very long for this to occur. Death removes the body's defences to the growth of organisms including in deep recesses. He considered these results to be meaningless in terms of what happened with the patient in life. They had been grown from samples grown in culture. The samples were taken after death.

303. Professor Whitby repeated that the selected antibiotics were appropriate and it would not have assisted to add any more. He thought the antibiotics were having an effect - the infection was slowly resolving. On reviewing his observations he noted that Mr Scholz was taking responsibility for some of his care with suctioning, showering, taking small amounts of fluid and jelly. All of these suggest he was beginning to improve until 3.30pm. He considered the volume of pus unsurprising because it was a streptococcus infection which is very productive. The two drains inserted were appropriate and producing drainage. It takes some time for both drainage and antibiotic to work and then time to resolve the swelling. If the patient had not resolved after 48 hours or 72 hours then reconsideration might be needed for further drainage.

304. Further blood tests on the Sunday or Monday morning would not have added useful information when it was known he was still recovering from an infection. The indicators were that the treatment was working. The frequency of assessment by Dr Chahoud was considered appropriate given the information in the patient's observations, in Professor Whitby's opinion. A CT scan is the optimal investigation to review the effectiveness of drainage from the abscess but was not indicated.

305. He considered the events of the afternoon of 20 May came out of the blue and could not have been predicted.

306. On reviewing the saturation levels over the last 24 hours of Mr Scholz' life, Professor Whitby said they were not concerning between 93 and 98

on room air. It was to be expected that his pulse rate would be elevated given the toxaemia associated with infection. Likewise the blood pressure is a bit elevated but to be expected given the infection.

307. Professor Whitby confirmed that on the basis of the autopsy, the diagnosis of lower respiratory problem was entirely wrong but in the context of his examination, understandable.

308. The amount of drainage after the procedure was unlikely to have been capable of measurement as it drains into dressings, but was consistently described to be large in quantity by nurses and family members.

309. Professor Whitby's opinion that the drains may not have reached all parts of the abscess which might have been compartmentalised was based on his experience of such abscesses. The autopsy did not reveal this level of information.

310. Professor Whitby informed the inquest that Mr Scholz' infection did not meet the criteria to be classified as Ludwig's Angina. I accept that conclusion.[29]

[29] Page 11 Exhibit 79 Expert Report Professor Whitby