

**A Decision by the
Deputy Health and Disability Commissioner
(Case 20HDC02364)**

1. On 21 December 2020 HDC received a referral from the Office of the Coroner concerning the standard of care provided to Mr A at Health New Zealand|Te Whatu Ora Southern (Health NZ Southern) in Month1¹ 2019. Sadly, Mr A died as a result of the events outlined in this report, and I extend my sincere sympathies to his whānau for their loss. Mr A was aged 77 years at the time.

Information gathered

2. On 16 Month1 2019 Mr A presented to Public Hospital 1 and was found to have suffered a heart attack. In the days following his admission, Mr A developed headaches and vision problems. A computed tomography (CT)² head scan showed a pituitary macroadenoma³ with bleeding. This was putting pressure on the optic chiasm,⁴ causing Mr A's symptoms. Initially this was managed conservatively with medication changes and monitoring of symptoms until the neurosurgery team, led by Dr B,⁵ felt that Mr A's vision had deteriorated acutely and urgent surgery for transsphenoidal evacuation of the pituitary haemorrhage⁶ was indicated.
3. Dr B recognised that he did not have adequate experience to undertake this procedure. Accordingly, he sought permission (from the Service Manager, who in turn contacted the General Manager and the Chief Medical Officer) for Dr C⁷ to assist with the surgery. Permission was granted for Dr C to support Dr B, although it is unclear what was communicated to Dr B in terms of the accepted scope of Dr C's involvement in the operation.
4. The South Island Neurosurgery Service (SINS) is run out of Public Hospital 1 and Public Hospital 2. Dr B's on-site supervisor at Public Hospital 1, Dr D, was on annual leave at the time of these events.

¹ The relevant month is referred to as Month1 to protect privacy.

² An imaging technique using X-rays.

³ A benign tumour in the pituitary gland.

⁴ A region located at the base of the brain in which the optic nerves intersect.

⁵ At the time of the events, Dr B was registered with the Medical Council of New Zealand in the 'provisional vocational (supervision)' scope of practice. Internationally trained doctors must complete a provisional vocational registration period and work under supervision to ensure competency in the relevant field before receiving vocational registration.

⁶ Surgery in which the pituitary region in the base of the brain is accessed through the nose and sinus to relieve the pressure caused by the haemorrhage.

⁷ Dr C was not an employee of Health NZ Southern and was not credentialled to operate at Public Hospital 1. At the time of the events, he had not performed surgery for one year and had not completed a pituitary tumour resection for two and a half years.

5. Dr B had another supervisor, Dr E, who was based at Public Hospital 2. There was also an on-call neurosurgery consultant at Public Hospital 2 available to provide advice. Dr D told HDC that it would be expected for Dr B to seek advice from an available supervisor in cases outside his scope of experience, and he understood that Dr B was not trained in pituitary surgery. Dr D told HDC that normally he checked all Dr B's theatre lists, and operations were discussed before and afterwards. Dr E also received a copy of Dr B's theatre lists.
6. In Mr A's case, Dr B did not seek advice from Dr E or the on-call consultant at Public Hospital 2. Dr B said that he did not recall being informed of any requirement to consult with his supervisor, Dr D, or with the neurosurgical team at Public Hospital 2 regarding his clinical decisions, including surgical interventions. However, on rare occasions he did discuss complex cases with Dr D or the clinicians at Public Hospital 2, but this was at his own discretion and not because he was directed to by any policy or instruction. According to Dr B, Dr D and Health NZ Southern were aware that his usual practice was to make independent clinical decisions without discussion with a supervisor, and this was not questioned. Further, Dr B told HDC that he was not aware of any policy involving Public Hospital 2's clinicians in the care of patients at Public Hospital 1. He was also not aware of any criteria or process to determine whether patients should be transferred to Public Hospital 2.
7. Dr B told HDC that there was a discussion within the local neurosurgery team regarding the potential transfer of Mr A to Public Hospital 2. This option was rejected due to the high risk of transferring Mr A, and it was considered that competent specialists who could perform the necessary operation at Public Hospital 1 were available locally.
8. The consenting process for surgery was completed by two of Dr B's neurosurgical colleagues. According to both Dr B and Dr C, Mr A was informed of Dr C's involvement in the procedure during a preoperative discussion with Dr B. However, this discussion was not documented, and Dr C confirmed that he did not speak to Mr A before the operation. The surgical consent form, signed by Mr A, lists the procedure as 'Transsphenoidal evacuation of pituitary haemorrhage'. The form does not state words to the effect of '+/- resection of pituitary tumour'.⁸ 'Bleed' is one of the handwritten risks recorded on the form.⁹ It appears that Dr C's participation in the surgery is not recorded in any of the consenting documentation or the handwritten surgical note.¹⁰ I am also unable to find evidence that Mr A was informed that resection of the adenoma would be considered and attempted during the procedure.
9. Surgery to decompress the pituitary haemorrhage was performed on 21 Month1 2019. Dr B accessed the site of the tumour and spontaneous evacuation occurred.¹¹ The decision was then made to extend the procedure to the right of the initial opening to access and resect further tumour tissue. Dr C told HDC that his intention was to remove the tumour to prevent new bleeds and the need for further surgery in future.

⁸ Severe bleeding and haemorrhage can occur during resection/excision as a result of damage to major blood vessels.

⁹ 'Bleed' is a standard risk listed on most operation consent forms.

¹⁰ A handwritten operation note has been provided, but there is no dictated operation note.

¹¹ Pressure was relieved through the removal of tumour and haemorrhage material.

10. Dr C took over as the principal surgeon and extended the dural opening¹² to the right. While Dr C was using a Kerrison Ronguer¹³ to remove bone and extend the opening, extensive bleeding occurred, most likely due to damage to the right internal carotid artery.¹⁴ Dr C told HDC that he is still not certain how the injury occurred. As a result of the damage to the carotid artery, Mr A suffered a cardiac arrest and significant blood loss before the bleeding was able to be controlled.
11. Subsequent testing showed that Mr A had suffered widespread loss of function on both sides of the brain due to a lack of blood flow. Sadly, Mr A passed away. Again, I offer my sincere condolences to Mr A's whānau for this tragic and unexpected outcome.

Adverse event review

12. An Adverse Event Report (AER) was completed by Health NZ Southern. The report included the opinions of two neurosurgeons working in New Zealand — one who does not have specialist pituitary experience, and one who has extensive experience performing pituitary surgery.
13. According to the AER, this was a complex case for which Dr B required advice from his neurosurgical peers. The AER concluded that the root cause of this event was a failure by Dr B to contact his colleagues at Public Hospital 2 to obtain advice. According to the report, the other contributory factors were:
 - a) An insufficient plan or protocol being in place to manage a patient who required pituitary treatment or other complex surgery. This resulted in an inexperienced surgeon performing urgent surgery alongside another surgeon who was not employed by Health NZ Southern. This led to the decision to attempt further tumour removal, which caused bleeding, cardiac arrest, and death;
 - b) There was no protocol in place to describe the scope and type of support that could be provided by Dr C (as a non-Health NZ Southern employee) in such circumstances;
 - c) The teams making up SINS were essentially independent and did not have clear pathways between them for such cases; and
 - d) The accreditation process did not identify procedures Dr B was not to perform.

Independent advice

14. HDC sought independent clinical advice from a neurosurgeon, Dr Agadha Wickremesekera (Appendix A). He identified several departures from accepted standards in the care provided to Mr A by Dr B, Dr C, and Health NZ Southern. Dr Wickremesekera's criticisms relate to the preoperative and intraoperative decision-making and the protocols in place at the time of the events. For the most part, Dr Wickremesekera's criticisms are consistent with the findings of Health NZ Southern's AER.

¹² Incision made in the membrane surrounding the brain and spinal cord.

¹³ A surgical instrument used to remove small pieces of bone and other hard tissue.

¹⁴ A pair of blood vessels that supply blood to the brain and head.

15. Dr Wickremesekera considered that Dr B was insufficiently qualified to perform this surgery, and that the supervision arrangement that utilised a non-Health NZ Southern employed surgeon was also inappropriate. Dr Wickremesekera identified this as a severe departure from the expected standard. He advised that Dr B should have sought advice on Mr A's case from the neurosurgery team at Public Hospital 2, or another available on-call neurosurgeon in New Zealand, while Dr D was on leave. Dr Wickremesekera considers that the failure to do so was 'one of the key points', and a severe departure from accepted standards of care. I accept this advice, and I note that this finding is consistent with that of Health NZ Southern's AER, which identifies this as the 'root cause' and key issue.
16. Dr Wickremesekera advised that it was a severe departure for Dr C to be involved in the operation as a non-employee when there were other more suitable options, such as referral to Public Hospital 2, or conservative management of Mr A's condition. I accept this advice and note that the AER is also critical of this aspect of the care, stating that there was no sufficient plan or protocol for this circumstance, resulting in surgery being performed by an inexperienced surgeon with the support of a non-employee.
17. The clinical advice provided as part of the AER is of the opinion that the type of surgery performed should not be attempted without an on-site endovascular service. Dr Wickremesekera was mildly critical of Dr B's decision to operate at Public Hospital 1. He considered that it would have been more appropriate to transfer Mr A to another neurosurgical unit where there were more experienced neurosurgeons and a skull base team available. I accept this advice.
18. Regarding the consenting process, Dr Wickremesekera noted that due to the unusual nature of having a non-Health NZ Southern surgeon present to support the main surgeon, who was inexperienced in the procedure, it would be expected that there would be a discussion with Mr A about this. It would also be expected that this discussion would be recorded in the clinical notes. An absence of such a discussion and associated documentation was viewed as significantly below expected standards. I accept this opinion.
19. Dr Wickremesekera's opinion was consistent with the findings of the AER in that the decision to extend the procedure to remove further tumour tissue following the initial evacuation was inappropriate in the circumstances, and that this step was not necessary to relieve the compression of the optic nerves adequately. He considered this to be a moderate departure from accepted standards. I accept this advice.
20. The clinical advice contained in the AER noted that use of a Kerrison Ronguer is appropriate for enlarging a bony opening, but it would be unconventional and potentially dangerous for this tool to be used to extend the dural opening. The advisors strongly suspected that the wording used to describe this stage of the surgery was misleading, and that it was unlikely that this occurred. Dr Wickremesekera noted the absence of a dictated operation note.¹⁵ He advised that it would be expected for Dr B to have ensured that this was completed. Dr Wickremesekera said that he was unable to provide a detailed or conclusive opinion on

¹⁵ No dictated operation note has been provided. Dr B did complete a handwritten operation note, but it does not contain details of Dr C's use of the Kerrison Ronguer.

the appropriateness of the surgical technique and instruments used without the benefit of a dictated operation note. Dr C told HDC that the severe bleeding occurred while he was using the Kerrison Rongeur to pull on a piece of bone, but he is not certain about the cause of Mr A's injury.

21. Based on the information available to me, I am unable to make a finding of fact on whether a Kerrison Rongeur was used inappropriately by Dr C to extend the dural opening. However, I consider that the key event during this surgery was the decision to extend the procedure to resect further tumour tissue. If the decision to extend the procedure had not been made, surgery would not have continued following the initial evacuation, and the damage to the carotid artery would not have occurred.
22. Finally, Dr Wickremesekera considers that there was a severe departure in relation to the protocols and systems in place at the time of Mr A's operation, noting that Dr B was inexperienced with this type of surgery, and that he did not seek advice from the neurosurgical clinicians at Public Hospital 2 or another neurosurgical unit. I accept this opinion.
23. Dr Wickremesekera was sent copies of the providers' responses to his report and asked whether this information changed his advice. He confirmed that the opinions in his report remained unchanged.

Responses to provisional opinion

24. Mr A's whānau was given the opportunity to comment on the 'information gathered' section of the provisional opinion. The comments set out in their response have been addressed in separate correspondence.
25. Dr B was given the opportunity to respond to the provisional opinion. Dr B advised that he had no comment to make regarding my decision.
26. Dr C was given the opportunity to respond to the provisional opinion. Dr C advised that he accepted my decision, and he provided further comments, which have been incorporated into this report where relevant.
27. Health NZ Southern was given the opportunity to respond to the provisional decision. Health NZ Southern advised that it accepted my findings and recommendations. Health NZ Southern's further comments have been incorporated into this report where relevant.

Opinion: Dr B — breach

28. Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code)¹⁶ states that every consumer has the right to have services provided with reasonable care and skill. Based on the advice provided by Dr Wickremesekera, as well as the findings of Health NZ

¹⁶ The Code can be found on HDC's website at: <https://www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/>.

Southern's AER, it is evident that several aspects of the care provided to Mr A did not meet accepted standards.

29. I am critical of Dr B's failure to seek advice on Mr A's case, his decision to proceed with surgery at Public Hospital 1, and the intraoperative decision to extend the surgery to remove further tumour tissue.¹⁷ I therefore consider that Dr B breached Right 4(1) of the Code.
30. Right 6(2) of the Code states that before making a choice or giving consent, every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, needs to make an informed choice or give informed consent. Right 7(1) of the Code states that every consumer has the right to receive services only if that consumer makes an informed choice and gives informed consent.
31. Although Dr B 'believe[s]' he informed Mr A of Dr C's involvement in the procedure, this is not documented in the clinical records. Dr C's role in the surgery is not recorded in any preoperative discussion notes, Mr A's consent form, or the handwritten operation note. I consider that the impromptu involvement of a non-Health NZ Southern employee to support Dr B, who lacked experience in the procedure, to be an unusual situation. Therefore, I would expect that there would be clear and explicit disclosure of the details of this arrangement with the patient, and detailed documentation of such discussion(s) in the patient's records. The absence of such documentation is concerning, and I find it more likely than not that Mr A was not adequately informed of Dr C's participation and role in the operation. As such, it is not evident that Mr A received the information that a reasonable consumer in his circumstances required before giving informed consent.
32. Furthermore, it is not recorded in the operation consent form, or preoperative discussion notes, that in addition to evacuation of the pituitary haematoma, resection of the tumour might also be attempted. The possibility of 'severe bleeding' is one of the risks of resection, and this is not listed on Mr A's consent form. This was information that a reasonable consumer in Mr A's circumstances needed to receive before giving informed consent. I therefore find that Dr B breached Right 6(2) of the Code.
33. It follows that without being adequately informed of Dr C's involvement, and that resection of the adenoma might be attempted, Mr A could not give his informed consent to the procedure. In making the decision to extend the operation, Mr A received a procedure to which he did not consent. I therefore find that Dr B breached Right 7(1) of the Code.

Opinion: Dr C — breach

34. Based on Dr Wickremesekera's advice, as well as the clinical reviews contained in Health NZ Southern's AER, it was inappropriate and unnecessary for Dr C to proceed with an extension of the procedure to remove further tumour tissue after the initial evacuation. I therefore find that Dr C breached Right 4(1) of the Code.

¹⁷ While the extension of the surgery was performed by Dr C, I consider that as the lead neurosurgeon, Dr B held overall responsibility for such decisions made during the operation.

Opinion: Health NZ Southern — breach

35. It is concerning that Health NZ Southern did not have adequate plans or protocols in place to supervise and support staff in Mr A's case. While I remain critical of Dr B's individual preoperative decision-making, I am also critical of the inadequate systems in place at Health NZ Southern at the time to guide safe decision-making and appropriate surgical planning and support in such circumstances.
36. I consider that the lack of appropriate protocols strongly contributed to the dangerous situation that eventuated in which Dr B, a surgeon requiring supervision, did not seek advice from his neurosurgical colleagues at Public Hospital 2. At the time, Dr B was completing a provisional vocational registration period, during which he required supervision. He told HDC that he was not aware of any requirement to consult with his supervisors or another available neurosurgeon for complex cases such as Mr A's. This led to Dr B being supported by a non-employee to perform an urgent procedure in which he lacked experience. I am concerned about the following systems issues that allowed this situation to occur; these align closely with the contributory factors identified in Health NZ Southern's AER:
- a) No specific protocols or instructions in place setting out the expectation of Dr B, as a neurosurgeon who required supervision, to seek advice from an available supervisor or another on-call neurosurgeon for complex cases;
 - b) No formalised list of procedures that Dr B was and was not permitted to perform;
 - c) Inadequately established communication pathways between the two public hospitals' neurosurgical colleagues; and
 - d) Authorisation for a non-Health NZ Southern surgeon without recent pituitary surgery experience to assist an inexperienced surgeon and participate in the procedure did not follow a clear protocol, contributing to uncertainty about the non-employee's role and scope of involvement in the procedure.
37. In light of the above systems issues evident at the time of the events, which I consider did not support appropriate supervision of staff and safe practices, I find that Health NZ Southern breached Right 4(1) of the Code.

Changes made since events

38. Health NZ Southern advised that the following changes were made after the events:
- a) SINS was asked to introduce a standardised list of exclusions for neurosurgeons (tasks and procedures they cannot perform).
 - b) All SINS neurosurgeons must spend six weeks at the Health NZ Waitaha Canterbury Neurosurgical Unit as part of orientation to the 'two site one service' structure. The aim is for staff to develop strong collegial relationships, and to facilitate communication between teams.
 - c) Mr A's case was discussed at the Neurosurgical Morbidity and Mortality Committee meeting.

- d) Health NZ Southern planned to add a section to the accreditation policy setting out that emergency accreditation of non-employee surgeons 'must be agreed to by the Medical Director (or relevant [Clinical Director] as delegate) after discussion with the relevant Clinical Director and the [Chief Medical Officer is to] be notified. The nature of the involvement must be stated and recorded in the patient record (or in an e-mail for the patient's clinical record) and, if possible, recorded on the consent form.'
 - e) A memorandum of understanding (MOU) has been established between Health NZ Southern, Health NZ Waitaha Canterbury, and the University of Otago concerning the supervision of overseas-trained surgeons.
 - f) A periodic review of the service's neurosurgeons' accreditation by an external peer has been introduced.
 - g) The document titled 'Neurosurgery Guidelines: Guidelines when no on-site Neurosurgeon at [Public Hospital 1]' has been updated.
 - h) All neurosurgeons at Public Hospital 1 who require supervision receive this from clinicians at Public Hospital 2.
39. Dr B told HDC that he has left New Zealand, and that his practice is now confined to his subspecialty only.
40. Dr C told HDC that he has now limited himself to research and teaching in New Zealand, and clinics overseas. Since these events, he has not been performing neurosurgical interventions.

Recommendations and follow-up actions

41. I acknowledge the changes already made by Health NZ Southern, and I am also mindful that Dr B and Dr C are no longer practising neurosurgery in New Zealand.
42. I recommend that Dr B, Dr C, and Health NZ Southern, respectively, provide formal written apologies to Mr A's whānau for the deficiencies identified in this report. The apologies are to be sent to HDC within three weeks of the date of this report, for forwarding to Mr A's whānau.
43. I recommend that Health NZ Southern establish a protocol to ensure that those being supervised are made explicitly aware, through written and/or verbal instructions, of the expectation that complex cases and/or areas of neurosurgery in which the clinician is inexperienced are to be discussed with a supervisor or on-call consultant. This can be included in an already established process or in a newly created process. A copy of the relevant protocol or process should be sent to HDC within three months of the date of this report.
44. I recommend that Health NZ Southern provide an update on the implementation of each of the changes it has made in response to these events (set out above), including details of any training or education provided to staff regarding the changes. This report is to be provided to HDC within six months of the date of this report.

45. In response to my provisional decision, Dr C provided a letter of apology for forwarding to Mr A's whānau. I therefore consider that Dr C has met the relevant recommendation.
46. A copy of this report with details identifying the parties removed, except the clinical advisor on this case and Health NZ Southern, will be sent to the Medical Council of New Zealand and it will be advised of Dr B's and Dr C's names.
47. A copy of this report with details identifying the parties removed, except the clinical advisor on this case and Health NZ Southern, will be sent to the Royal Australasian College of Surgeons and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Carolyn Cooper
Aged Care Commissioner

Appendix A: Independent clinical advice to Commissioner

The following independent advice was obtained from neurosurgeon Dr Agadha Wickremesekera:

[Mr A]

Ref: 20HDC02364

Thank you for your letter dated 22 September 2022. I apologise for the delay in reply.

This report is on [Mr A], 77 year old man who was admitted to [Public Hospital 1] with chest pain on 16 [Month1] 2019. After admission he was noted to have a myocardial infarction and was under the cardiology team. With increasing headache he went on to have a CT/CT angiogram on 19 [Month1] 2019 which showed a moderate sized pituitary mass with a small amount of haemorrhage and suprasellar extension. This was confirmed on MRI on 20 [Month1] 2019 which also showed that the adenoma was partially invading the right cavernous sinus. Initial treatment was conservative however due to poor visual fields and what appeared to be progression of visual deficit he was taken for an urgent endoscopic transsphenoidal procedure at [Public Hospital 1]. During the first part of the procedure there was decompression of the central haemorrhagic adenoma. A decision was then made to extend the incision on the right side to remove the tumour extending into the cavernous sinus. Whilst using a Kerrison punch to extend the bony exposure on the right side there was profound arterial bleeding. This is due to a carotid artery injury. Over the ensuing period the patient bled profusely and also had a cardiac arrest due to hypovolemia. The bleeding was eventually controlled with a crush muscle patch but certainly the extensive haemorrhage of volume loss would have contributed to achieving haemostasis. He was returned to the intensive care unit and noted to have a poor neurological response. Follow up imaging showed an extensive right middle cerebral artery territory stroke. Note was made that the internal carotid and middle cerebral artery were patent on the imaging. The patient passed away thereafter.

In terms of your questions with regards to [Dr B]:

1. Whether the surgery was clinically indicated and whether [Mr A's] condition could have been managed medically

There were indications for neurosurgical intervention given that there was deterioration of vision and visual fields. However under the circumstances there was an option of managing him medically. With time there would be possible regression of the mass effect from the haemorrhage which can result in improvement of visual fields if treated conservatively.

2. Whether [Dr B] was sufficiently qualified and supervised to undertake the operation

It would seem that he was a qualified neurosurgeon however from his level of experience having performed functional surgery for many years he had little or no

experience in performing endoscopic pituitary surgery. Hence he was insufficiently qualified to perform this surgery. He was also insufficiently supervised to undertake this operation given that the affiliated surgeon at [Public Hospital 1] was unavailable and he required support of another surgeon who was not currently employed at that hospital.

3. Whether it was appropriate for a non-DHB surgeon to be involved in the operation, and whether that decision was sufficiently informed

I believe that it was inappropriate to have a non-DHB surgeon involved in this operation. The decision was insufficiently informed given that the patient and the family were unaware of this option that was undertaken. There were other options available to the neurosurgeon such as referral to [Public Hospital 2] or other hospitals around New Zealand who are experienced and familiar with this procedure, or he could have taken the conservative option.

4. Whether the decision to operate at [Public Hospital 1] was appropriate in the circumstances

The decision to operate at [Public Hospital 1] was not appropriate under the circumstances. This is an elderly patient with poor cardiac output with a concurrent myocardial infarction. It would have been a better option to transfer the patient to another neurosurgical unit where there was availability of more experienced and qualified neurosurgeons and a skull base team to perform this surgery.

5. Whether the operation was planned adequately, including a plan to manage the risk of bleeding during the operation

It would appear that the plan was adequate. In terms of managing the risk of bleeding during this operation there was a pre-operative discussion with the ENT surgeon and the additional neurosurgeon who is experienced in this procedure. Unfortunately the complication occurred when the decision was made to extend the exposure in order to remove the tumour extending into the cavernous sinus. This decision to extend the procedure, under the circumstances, was not necessary to relieve the compression of the optic nerves.

6. The information that a reasonable consumer consenting to this operation would expect to receive in [Mr A's] circumstances

There is description of verbal consent. I have not seen any written consent for the operation or a dictated operation note. Hence I believe that this consumer and their family did not receive reasonable consenting process under the circumstances and there needs to be dictated documentation of the operation note.

7. Whether the surgical technique and equipment used during the operation were appropriate and adequate

It is difficult to be entirely sure of the surgical technique and equipment used as I have not seen a dictated operation note. I presume they have the endoscopic equipment to perform this procedure combined with neurosurgery and ENT and they use neuronavigation equipment which is a standard practice. In terms of the surgical technique it appears that they have made the exposure through the sinuses adequately and then made an opening over the bone over the midline of the pituitary tumour

adequately and evacuated the central mass affect which includes some tumour tissue and the haemorrhage. Further extension of the operation to the right side they have used adequate equipment however there was an unexpected catastrophic complication.

8. Whether [Mr A] should have received hypothermia treatment in ICU following the operation

This was a reasonable option to preserve body and brain function given the extent of the injury causing hypovolemic shock and a right sided stroke. Hypothermia is described to have beneficial effect for such patients however in this dire situation it was of no value.

9. Any other matters you consider relevant

There are several deficiencies in this case, but one of the key points is that, the case should have been discussed with the team in [Public hospital 2] or other available on call neurosurgeons around New Zealand.

With regards to [Dr C]:

10. Whether [Dr C] was sufficiently qualified, experienced, and involved in the operation planning to participate in the operation

I believe [Dr C] was sufficiently qualified and experienced to participate in the operation to assist the other neurosurgeon. However he was not involved in the consent process with the patient nor family directly. It would have been important to have informed the patient and family that he was required as a supervising surgeon for this procedure given the lack of the primary surgeon's experience. The family also needed to be informed that at this time [Dr C] was not employed, and hence not credentialed, at [Public Hospital 1].

11. Whether further tumour removal would be considered necessary in the circumstances of [Mr A's] operation

Unfortunately in hindsight this is an easy answer. Yet with foresight, given his age, the central haemorrhage and the nature of the tumour which has been there for most likely over five years given the previous CT scan evidence, the decision to further extend the exposure on the right side to remove more tumour extending into the cavernous sinus was an error in judgement. This is not purely in hindsight given that there was a carotid artery injury but to say that part two of the surgical approach was not appropriate nor necessary, under the circumstances.

12. Whether it was appropriate for [Dr C] to take over as the main operator during the operation

Given his greater experience and familiarity with this procedure it is appropriate for [Dr C] to take over as the main operator for any part of the operation or the extended part of the operation. However, the decision to extend the procedure on the right side was fundamentally flawed in my opinion hence I believe it was inappropriate for him to take over the operation at the time he did.

13. Whether the surgical technique and instruments used were reasonable in the circumstances

It is difficult to answer this conclusively but if they have up to date endoscopic surgical instruments, neuronavigation and all the required skull base instruments then I would conclude that the surgical technique and instruments were reasonable. But yet again I would make the point that a dictated operation note is not available.

Process:

14. Which doctor had primary responsibility for planning and conducting the operation, and what this would involve; were expectations met in this case

I believe that [Dr B] had primary responsibility for planning and conducting the operation given that he was employed by [Public Hospital 1] as a neurosurgeon and [Dr C] was not employed by [Public Hospital 1]. Hence the interpersonal dynamic for [Dr C] to take over the procedure was not required given that the debulking of the central area with haemorrhage was already performed. This decision should have been taken by the primary neurosurgeon, and utilise the secondary neurosurgeon who was available for advice rather than taking over the procedure.

15. The adequacy of protocols/policies and/or systems in place at the time of [Mr A's] operation

I believe there was marked inadequacy of protocols, policies and systems that took place for [Mr A's] operation. This includes the planning phase where this patient was under significant medical stress. The neurosurgeon had poor experience performing endoscopic pituitary surgery and hence, had the option and should have taken the option, of discussing the case with the team in [Public Hospital 2] or one of the other neurosurgical units in New Zealand.

16. Any recommendations for improvements following this event

I would recommend that endoscopic transsphenoidal surgery only be undertaken in [Public Hospital 1] by an experienced neurosurgeon in endoscopic and skull base surgery. If this is not available a patient's care should be discussed with such a surgeon at the SINS. If this was not available a case should be discussed at the other neurosurgical units in New Zealand in Wellington, Waikato or Auckland who could manage these patients with their endoscopic transsphenoidal and skull base teams. Furthermore this primary surgeon is required to document the operative procedure and indications with a dictated operation note.

17. Whether clinical advice from any other specialty would be helpful in evaluating the appropriateness of [Mr A's] care

This would be a moot point given that the patient was under the care of cardiology and ENT was needed for combined operative care of this patient. The risk of haemorrhage is always there from pituitary surgery. I do not believe that the pre-treatment with Heparin had any significant effect on this situation. This patient had profound bleeding due to a carotid artery hole/injury from the use of the Kerrison punch, which led to the bleeding, hypovolemia and cardiac arrest. Clinical advice from the other specialties is

important but ultimately it is the decision of the neurosurgeon to take the patient to the operating room.

18. Any other matters you consider relevant

This case demonstrates a significant departure from the accepted standard of care for such a patient, which begins with the decision making process pre-operatively. Intraoperatively there was also a flawed approach, to extend the exposure causing the right carotid artery injury. Certainly carotid artery injury can occur with any endoscopic transsphenoidal pituitary surgery with an estimated risk below 1%, and is an accepted rare complication which is known to result in devastating outcomes such as mortality, further vascular injury and cerebral infarction. Once the complication occurs intraoperatively it is a very difficult scenario to rescue. This situation with [Mr A] would be viewed poorly by my peers for the many reasons described above. I have made several recommendations in answering your questions but please do not hesitate to contact me if you require any further clarification or information.

Many thanks

Yours sincerely

Agadha Wickremesekera ChB (Otago) MD FRACS
Neurosurgeon'

Clarification of independent advice

'07 June 2023

...

HDC

Email: ...

Te Whatu Ora | Health New Zealand

Dear [HDC]

Complaint: Te Whatu Ora Southern, [Dr B], [Dr C] Our Ref: 20HDC02364

[Dr B]

1. [Dr B] was insufficiently qualified to perform endoscopic transsphenoidal surgery, and was insufficiently supervised to undertake [Mr A's] operation.

Yes there is a departure from the standard of care and I would quantify it as severe.

2. It was inappropriate to have a non-DHB surgeon involved in [Mr A's] operation.

Again yes there has been a departure from the standard of care, again severe.

3. In [Mr A's] circumstances it was inappropriate to operate at [Public Hospital 1].

I would say that it is again a departure from the standard of care, I would say mild.

4. [Dr B] should have discussed [Mr A's] care with the team at [Public hospital 2] or with another available on call neurosurgeon around New Zealand.

Again there has been a departure from standard of care and I would say it is severe.

I would clarify that [Dr B] as a primary surgeon was responsible for ensuring that there was informed consent. He would have had to explain to the patient his experience and the fact that he was getting help from another surgeon who was not at the time employed by that DHB.

[Dr C]

5. The decision to further extend the exposure on the right side to remove more tumour extending into the cavernous sinus was an error in judgement as it was unnecessary and inappropriate in the circumstances.

It is a departure from standard of care, moderate.

I would clarify that [Dr C] had responsibility to [Mr A] to inform of his credentials and the role in the operation. Given that this did not occur I would still suggest strongly that [Dr B] was responsible to inform the patient and/or family with regards to the credentials and the role in the operation of [Dr C].

Te Whatu Ora Southern

6. The protocols, policies and systems that took place for [Mr A's] operation were inadequate.

I would suggest that the protocols, policies and systems that took place for [Mr A's] operation were inadequate. This was a departure from the standard of care. The extent of the departure of standard of care was severe given that again the surgeon in question had little experience with this procedure and had not informed the patient of the situation as well as the credentials and role in the operation of the other surgeon.

I hope this clarifies your further questions.

Kind regards

Yours sincerely

Agadha Wickremesekera MB ChB(Otago) MD FRACS
Neurosurgeon'

Further clarification of independent advice

'Thank you [HDC]. Apologies I did not see this written consent by [another doctor].

Please amend the advice and comments as below.

"There is description of verbal consent. I have seen a written consent for the operation [completed] by [another doctor]. I have not seen a dictated operation note by the neurosurgeons. Hence I believe that this patient received a reasonable consenting process from the junior non trainee neurosurgical registrar. However under the curious circumstances the patient and family needed to have met with both the treating neurosurgeons involved with the neurosurgical procedure. There needed to be a discussion with the patient and the family to explain the plan to have an experienced neurosurgeon who was not employed by the DHB supporting the inexperienced neurosurgeon who was the primary surgeon undertaking the procedure who was employed by the DHB. The absence of this discussion and/or the documentation of such a discussion is a major deficiency and well below the expected standard of care."

Kind regards,

Agadha

**Agadha Wickremesekera, MBChB (Otago), FRACS, MD (UoMelb),
Neurosurgeon'**