General Surgical Registrar, Dr C

Bay of Plenty District Health Board

A Report by the

Health and Disability Commissioner

(Case 07HDC14839)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Overview

This case involves the care provided to a patient at Tauranga Hospital in 2006. The man was not reviewed in person either by a consultant surgeon or a specialist vascular surgeon for over 90 hours following his admission to Tauranga Hospital. By the time he was reviewed by a vascular surgeon, his condition had deteriorated and, despite surgery, he died.

The investigation considered the actions of clinical staff who cared for the man during his admission, and the adequacy of arrangements for vascular surgery when a vascular surgeon is not available at Tauranga Hospital.

Parties involved

Mr A (dec)	Consumer
Ms B	Complainant/ Consumer's daughter
Dr C	Provider/ general surgical registrar
Dr D	Consultant vascular surgeon
Dr E	Consultant vascular surgeon
Dr F	General surgeon
Dr G	Radiologist
Dr H	Consultant surgeon
Dr I	Surgical registrar
Dr J	Surgical registrar
Dr K	Vascular surgeon
Bay of Plenty DHB	Provider

Complaint

On 9 May 2007, the Health and Disability Commissioner (HDC) received a complaint from Ms B about the services provided to her father, Mr A.[1] The following issue was identified for investigation:

The appropriateness of the care provided to Mr A by Dr C and Bay of Plenty DHB over a period of six days in 2006.

An investigation was commenced on 29 August 2007.

[1] The complaint is also supported by Mr A's wife and other children.

Names have been removed (except Tauranga Hospital/Bay of Plenty DHB) to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

Information was obtained from Ms B, Dr C and Bay of Plenty DHB. Independent expert advice was obtained from vascular surgeon Professor Justin Roake.

Information gathered during investigation

Background
Mr A had a past medical history that included high blood pressure, ischaemic heart disease, deep vein thrombosis and carotid artery disease. He had undergone coronary artery bypass surgery, knee surgery and hip replacement surgery.

Mr A, then aged 68, underwent vascular surgery (left-to-right femoro-femoral crossover graft) in February 2004. This procedure was performed by general and vascular surgeon Dr D. Dr D was one of the two vascular surgeons who worked at Tauranga Hospital, Dr E being the other.

In 2006, Mr A was admitted with a blockage to the graft performed two years earlier. The blockage was treated non-surgically with anticoagulant therapy, but an emergency operation was subsequently performed three days later by Dr D to repair bleeding from the graft site. Mr A was discharged 10 days after he was admitted, on anticoagulation therapy (warfarin).

Day 1
At 12.27pm the day after his discharge, Mr A was admitted to Tauranga Hospital with pain in his right flank and hip that had started early that morning. On arrival, the pulses in Mr A's feet (pedal pulses) could not be felt but later, at 2pm, the nurses recorded that the pedal pulse was "present in both feet".

Mr A was assessed by a surgical registrar, who decided to admit Mr A to hospital, to be nil by mouth, to have intravenous (IV) fluids, and to arrange a CT scan. His diagnosis was that Mr A possibly had a haematoma (blood clot) behind the peritoneum or the psoas muscle.

Mr A was admitted under the care of the general surgical team on call (surgeon Dr F) because both vascular surgeons were at a conference and would not be on duty until the following Monday morning.

The CT scan report confirmed a right ilio-psoas haematoma[2] and that there was still active bleeding. Accordingly, surgical registrar Dr I contacted Dr F, and it was

[2] "Ilio-psoas" refers to a combination of three muscles, psoas major, psoas minor, and iliacus, which are sited in the lower abdomen and upper thigh.

decided to reverse Mr A's warfarin anticoagulation using two units of fresh-frozen plasma and IV vitamin K.

Day 2
The following morning, Mr A was assessed by Dr C, a general surgical registrar working for general surgeon Dr F.[3]

Mr A's pain had decreased, and he was generally feeling better. Following treatment with fresh-frozen plasma and vitamin K, Mr A's blood clotting was normal (INR[4] of 1.3), and Dr C recorded that both of Mr A's legs were warm.

In the early afternoon, a detailed weekend plan was recorded by the house officer in the clinical record in preparation for Mr A's transfer to a ward. The plan stated that Mr A could eat and drink, and walk to the toilet. His warfarin was to be withheld and his clinical observations to be monitored. It was recorded that Mr A would be transferred back to the care of Dr D on Monday.

Mr A was transferred to the ward at 2.30pm.[5] The nurse admitting him to the ward recorded that he required analgesia, his blood pressure was high, and that he had refused lunch.

At 9.30pm, the on-call house officer was asked to review Mr A because of an onset of chest pain. Angina was diagnosed, and morphine and GTN spray were administered. The house officer noted that there had been no changes on the ECG, and a blood sample was taken to check whether Mr A had suffered a heart attack. By 11.09pm, Mr A's pain had subsided, and he was recorded as having slept well overnight.

Day 3
Dr C performed a ward round on the morning of Day 3. He stated:

> "At this stage [Mr A's] chest pain had settled and he was comfortable. I ordered repeat blood tests, regular observations and continue withholding warfarin."

At 1pm, one of the blood tests taken was reported to the ward as abnormal (raised Trop-T, an indicator of heart muscle damage), and the nurse advised the laboratory to telephone the house officer with this information. When contacted by the laboratory with this result, the doctor contacted the on-call medical registrar. It was decided to perform another ECG later that day, and to observe Mr A.

At 5.45pm, Mr A complained about pain in his right testis, and he was assessed by the house officer who, following his assessment, prescribed antibiotics (Augmentin) for

[3] Dr F had previously practised as a general and vascular surgeon.
[4] International normalised ratio: a measurement of blood clotting, normal being an INR of 1.
[5] Mr A was nursed in the emergency department until 2.30pm on Day 2 as there was a shortage of ward beds.

suspected epididymo-orchitis.[6] The house officer also requested that the nursing staff obtain a urine specimen and give oxygen if necessary. The house officer recorded that he would obtain a urology opinion if there was no improvement.

Day 4

At 3.30am on Day 4, Mr A developed pain in his left ankle and foot. The clinical record noted that his foot was "discoloured". At about 4am, he was seen by the on-call house officer, who prescribed analgesia, and then at 4.45am by the surgical registrar on call, Dr J. Dr J found that Mr A's foot was cool, and no pedal pulses could be detected. Dr J diagnosed acute ischaemia, and discussed the need for a CT angiogram with the on-call radiologist, Dr G. Dr G then discussed Mr A's case with Dr H, the on-call consultant surgeon, and an urgent CT angiogram was arranged.

The CT angiogram[7] was performed at 6.30am. Mr A moved during the study, so the pictures of the blood vessels in his calf were not ideal. However, Dr G reviewed the CT angiogram taken during the first admission in 2006 and thus was able to compare what Mr A's blood vessels looked like before his acute deterioration.

Dr G's provisional report[8] stated that there was an extension of the blockage of the distal superficial femoral artery that had previously been noted on Mr A's previous admission. The popliteal artery was seen to be patent from above Mr A's knee to the trifurcation.[9] The report stated that there was some "movement artefact" but the overall impression was:

> "Increased length of occlusion LEFT distal [superficial femoral artery]. Single left calf vessel Run off POST TIB also now occluded presumably by acute thrombus."

The clinical notes made by the house officer on the morning of Day 4 state that the CT angiogram showed an increase in the length of the blockage of the superficial femoral artery and that the posterior tibial artery (previously the only run-off) was now blocked.

A surgical registrar at Waikato was contacted (the notes record "[discussed with] Waikato acute reg"). However, there is no detail in the records about the information that was conveyed to the Waikato Hospital registrar; no name and designation of the doctor who called from Tauranga Hospital; and no name and designation of the Waikato Hospital registrar, or his/her position (for example, whether this was the registrar for the vascular surgery team). The clinical record states that, following discussion with the Waikato Hospital registrar, it was decided that Mr A was not a

[6] Epidydimo-orchitis: inflammation of the testes, usually caused by infection.
[7] At the time the CT angiogram was performed, only Tauranga and Christchurch Hospitals had the latest technology CT scanner capable of non-invasive angiography.
[8] Later that morning, Dr G subsequently asked his senior vascular radiologist colleague to review the entire CT angiogram. He concurred with the report.
[9] Trifurcation occurs when the artery splits into three.

candidate for surgery given the result of the CT angiogram, and an anticoagulant (heparin) infusion was commenced at 8am. This plan was also discussed with Dr H.

Dr C said that he reviewed Mr A at approximately 8.30am.[10] Dr C stated that he discussed the results of the CT angiogram with Mr and Mrs A, and advised them that surgery was not an option.

In contrast, Mrs A stated that she was called by her husband at around 7.30am, and he said that he might be transferred to Waikato Hospital. Mrs A decided to come straight in to the hospital, and arrived at approximately 8.30am. However, she recalls nothing more being said until Dr C approached her and her husband at about 10am. She recalls that Dr C advised that he had spoken to Dr E, who thought that "the leg was safe".

Dr C recalls that, on examination, Mr A's left lower leg was cooler than the right leg, he could not feel the pedal pulses, but muscle power and sensation were still present. Dr C said that he contacted Dr E that morning, on his mobile phone. This is confirmed by Dr E, who stated:

> "I received a call from [Dr C] regarding patients under my care at the time. At the end of the conversation he spoke to me with regard to [Mr A] … and informed me that there had been deterioration in the circulation to the left leg with onset of severe pain early that morning.
>
> …
>
> My main concern at the time was to try to ascertain from [Dr C] whether there was an immediate threat to [Mr A's] left leg — specifically asking at the time whether there was sensation and movement in the leg, and whether there was fixed mottling of the leg. The answer to these questions was that these findings were not present, and as a result I felt that it was reasonable to manage the situation conservatively in the knowledge that both [Dr D] and I would be around the following day and would decide at that time in more detail what the best course of action would be for what was an acute on chronic problem."

At 2pm, the nurse caring for Mr A documented that his left foot was "pale and cool to touch". At 3.15pm, Mr A was recorded to be in extreme pain (described by Mr A as 9–10 out of 10), and his foot was "blue, cool [with] movement, no sensation". The nursing staff contacted Dr C. The documentation records that Dr C gave a verbal order to give IV morphine and to consider the need for analgesia using either an epidural or patient-controlled analgesia via a pump (PCA). He instructed the nursing staff to continue with pain relief and monitor Mr A's breathing.

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[10] Dr C stated that he reviewed Mr A on three occasions during Day 4 (approximately 8.30am, 5pm, and "just after" 10pm) but he made no contemporaneous record of his assessments. The account he has given of his care on that day was written in a statement received by HDC on 26 October 2007.

Dr C stated that he reviewed Mr A at approximately 5pm. Dr C recalls that Mr A's foot was worse than it had been in the morning, with reduced sensation and pain on moving. Dr C said that Mr A's observations were normal and there were no signs of infection, and that the only possible surgical option was amputation, "but [Mr A's] condition at that time did not need the amputation to be done as an emergency". Dr C added that, if Mr A was to have surgery, it would be better for it to be done on Monday "when there would be optimal number of staff to deal with this complicated patient".

The house officer discussed Mr A's pain control with the on-call anaesthetic registrar, and it was decided to commence a PCA pump to manage Mr A's pain. The pump commenced at 6pm.[11]

Mrs A said that no senior doctors attended her husband during the afternoon and evening, but she did leave her husband's bedside from 5pm to 6pm. Mrs A eventually went home at 8.30pm. When she telephoned the ward later that evening, she asked to be contacted if there were any changes in her husband's condition.

Dr C said that he reviewed Mr A for the last time just after 10pm, immediately prior to completing his shift. Dr C stated:

> "I asked for [Mr A] to be kept nil-by-mouth after midnight for review by the Vascular Team in the morning and possible amputation if his condition was not improving. [Mr A] would continue to be observed overnight with regular measurement of pulse, blood pressure, temperature and oxygen saturation and the on-call registrar would be called to review him in case of deterioration. In the presence of signs of sepsis with fever, tachycardia and hypotension a decision about possible surgery would need to be discussed with the on-call vascular surgeon."

These instructions are not documented in the clinical record.

Soon after Dr C's review, Mr A's condition deteriorated. At 10.30pm his temperature rose to 38.5°C, he was recorded as feeling generally unwell, and he developed urinary retention. The on-call house officer was called, reviewed Mr A's history, and Mr A was catheterised.

[11] The nursing staff performed regular clinical observations of blood pressure, pulse, and breathing. Observations were recorded 13 times between 2.15pm and 6pm.

Day 5
Mr A's urine output was measured hourly overnight, and from 5am to 6am he did not pass any urine. Results of a blood test showed that Mr A had acute renal failure secondary to infection from an "ischaemic foot".

Mrs A and her son attended the hospital at 7.30am, to be present for the ward round. Mrs A had not been contacted overnight to advise her of the deterioration in her husband's condition, and was "very distressed" when she saw him. She stated:

> "The delay [in the] morning when [my son] and I arrived at 7.30am to catch the doctors on their rounds was horrific. It was obvious that [my husband] was in a very bad state and no one seemed to be doing anything. We asked a number of times where the doctors were and [we] were told they were at a meeting. We could not believe that they hadn't alerted [Dr D] or at the very least have had [him] seen by the duty doctor that morning. Just leaving him to be seen on the usual morning round at 9am was very distressing for us."

Mr A's son stated:

> "My father was in [a] shocking state by 7.20am on [Day 5]. …
>
> My father's bed was situated next to the ward entrance and close to the nursing staff office. My mother and I at 7.20am … were very distressed to find Dad in the condition he was. I approached nurses in the ward office at least three times … between 7.30–8.30am urgently seeking a doctor for Dad. Throughout this hour or more, I found each time three to four nurses seated … on a counter edge, talking casually. …
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> Not once … did any nurse pass by my father's bed or walk the 15 metres from their office to it. It seemed there were no nurses on the ward who had an inkling that an emergency existed. They would not respond meaningfully to our distress. This beggars belief."

Dr D performed a ward round and reviewed Mr A. He decided to perform a left above-knee amputation. Dr D stated that, until the ward round, he was unaware that Mr A's condition had deteriorated. Following surgery, Mr A was transferred to the intensive care unit.

Day 6
Mr A's condition did not improve after surgery, and on Day 6 he developed ischaemia of his right lower leg. Following a discussion with the haematologist (who considered that heparin-induced thrombocytopenia[12] was a strong possibility), heparin was

[12] Heparin-induced thrombocytopenia: low platelet count caused by the administration of heparin.

discontinued, and a right above-knee amputation was performed. Unfortunately, Mr A's condition deteriorated further, and he died at 8pm.

Response to events

Family meeting 14 August 2006
Because of their concerns about the care provided to Mr A, a meeting was held with his family on 14 August 2006. Ms B commented:

> "The opportunity to meet with clinical staff is an important mechanism for families to get answers in cases such as this. Although the clinical staff who attended the family meeting on 14 August, were reasonably candid, no one accepted responsibility for any wrongdoing or apologised unreservedly …
>
> I would like the final report to include recommendations for improving family meetings to ensure other grieving families have a better experience than we did."

Mr A's son, who also attended the meeting, similarly expressed concern about the way the meeting was conducted, noting that "good and honest complaint processes are important to identifying error, and in getting practice improvement".

Mrs A stated that the family was very grateful "for the time the doctors gave us at the meeting on the 14th August but [we] came away unhappy and confused". Mrs A added:

> "They did admit they had failed [my husband] and said they would change some of their procedures but we thought it should have been looked into more thoroughly at the time and treated as a sentinel event. We felt they had underestimated the seriousness of the decision to just leave [him] until the Monday when the surgeons would be back and by doing so had let us down badly."

Dr C's response to the family's concern was recorded in the notes:[13]

> "[Dr C] felt that the leg had deteriorated and probably had become non-viable but did not at that time decide to contact the consultant on call, or the vascular consultants as he [Dr C] thought the decision could be made the following Monday morning. He accepted that he should have involved the consultants at that time."

Dr C disputes the notes. He stated:

> "My recollection of the meeting was that, in retrospect, the consultants expressed the wish that they had been contacted on the Sunday afternoon/evening, but I understood this to be a preference on their part that they could have been involved.

[13] The notes of the meeting were taken by a representative of the Health Consumer Service.

> I did not understand them to be stating that the management of the patient would have been any different, and certainly not that my management of [Mr A's] care was in any way at fault.
>
> I do accept that I should have discussed [Mr A's] condition with [Mrs A] on the Sunday, especially the likelihood that [Mr A's] leg would need to be amputated. I also accept that I should have made better notes of my assessments of [Mr A's] condition, including a plan to monitor his condition as from [10pm]. I expressed my regret about that to the family at the meeting on 14 August 2006, but would be happy to send them a letter with my apologies."

Dr C has reviewed his practice as a result of this case. He now writes "clinical notes with clear instructions and management plans for unwell patients". He also now keeps "in close contact with unwell patient's families and [discusses] changes in their condition".

Bay of Plenty DHB

Bay of Plenty DHB advised that the Resident Medical Officer induction programme is being reviewed "to include more specific information relating to medical management and escalation of concerns", and will include teaching on:

> "How to seek help and guidance from consultants so that the feedback loop is closed and uncertainties removed.
>
> Proper clinical documentation such that notes are legible, dated and timed with the writer identifiable, and that the notes reflect the actual discussion which took place between registrar and consultant with documented end-points and evidence of consumer buy-in."

A memorandum dated 11 September 2003 from the Business Manager Surgical Services, entitled "Clarification of on call arrangements for vascular acutes", was sent to all consultant and general surgeons at Tauranga Hospital. (The memo refers to vascular surgeon Dr K, who was replaced by Dr E subsequent to the memorandum.) The Business Manager Surgical Services stated in the memo:

> "Recently I have had a few queries about the vascular call arrangements in place for Tauranga Hospital and I can confirm that they remain unchanged.
>
> There are two surgeons participating in the general surgical call roster, who also perform vascular surgery … but they do not do a 1:2 vascular call.
>
> This means that if [Dr K] or [Dr D] are on call and a vascular case presents to ED, they will, as a matter of course, perform vascular surgery, if it is required.
>
> If [Dr K] or [Dr D] are not on call, the on-call consultant may contact [them] to enquire if they are able to attend the case. They are however in no way obligated to

> do so. Where neither … are available, usual procedure is that the on call consultant makes the decision to either transfer the patient to Waikato [Hospital] or to perform the acute surgery if they think this will result in the best outcome for the patient."

Dr E explained:

> "It is accepted that Waikato provide a 24/7 vascular cover that will encompass the Bay of Plenty and Tauranga Hospital when [Dr D] and I are unavailable. As a courtesy I had informed the vascular surgeon on call at Waikato that [Dr D] and I were both out of town that weekend. This does not happen often (we try to avoid taking leave simultaneously, but occasionally there are conferences that we both attend for purposes of post-graduate education). In the 3½ years since my starting at Tauranga [Dr D] and I have dealt with nearly all vascular emergencies locally (attending when required even when not on call). To my knowledge there have been fewer than 5 patients transferred to Waikato due to our unavailability."

Independent advice to Commissioner

The following expert advice was obtained from vascular surgeon Professor Justin Roake:

> "I have been asked to provide independent expert advice to the Health and Disability Commissioner about whether Dr C and Bay of Plenty DHB (BoPDHB) provided an appropriate standard of care to [Mr A](Ref 07/14839).
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> I have read and agree to follow the Commissioner's Guidelines for Independent Advisors.
>
> My qualifications are MBChB (Otago), DPhil (Oxon), FRACS(Vasc), FRCS, and I have training and experience in the theory and practice of peripheral vascular surgery. I was consultant vascular surgeon at the John Radcliffe Hospital, Oxford, UK from 1992 to 1997. In September 1997 I was appointed to the Chair of Surgery, Christchurch, NZ, and have practised as a consultant vascular surgeon at Christchurch Hospital continuously since my appointment. … I am vocationally registered in general and vascular surgery in New Zealand.
>
> I have no conflict of interest with respect to this complaint.

[At this point Professor Roake sets out the complaint, the questions asked of him — which he repeats in his report — and the documents sent to him. This information has been omitted for the purpose of brevity.]

…

Summary of facts

The relevant background to this complaint regarding [Mr A's] care is as follows:

1) [Mr A] had a past medical history of hypertension, deep vein thrombosis, ischaemic heart disease, coronary artery bypass surgery, carotid artery disease, emphysema and joint replacement surgery.

2) [Dr D] (General and vascular surgeon) performed a left-to-right femoro-femoral crossover in February 2004 for what appears to have been intermittent claudication.

3) On [date] 2006 [Mr A] was admitted to Tauranga Hospital under the care of [Dr D] with occlusion of the femoro-femoral crossover graft. This resulted in acute ischaemia of the right foot associated with right leg pain.

4) The graft occlusion was treated successfully with thrombolysis but this was complicated by bleeding from the graft puncture site (on the left) [during the first admission]. This required surgical repair by [Dr D] as an emergency procedure.

5) [Mr A] was discharged [ten days later] after commencing Warfarin for anticoagulation.

[Mr A] was admitted to Tauranga Hospital on [Day 1] with severe right buttock and flank pain that had developed that morning. He was taken to hospital by ambulance and arrived at the emergency department at about 12:30pm.

On arrival at the emergency department [Mr A] was seen by the surgical registrar on duty at 13:00 and again at 15:30. He was assessed as possibly having a retroperitoneal or psoas haematoma. There was no evidence of ischaemia of the feet and the INR was 3.1. The surgical registrar arranged admission (under [Dr F], the general surgeon on call) and for an emergency CT scan.

The vascular team was not contacted because both consultant vascular surgeons were attending a conference.

The scan was completed by 17:30 and showed a right iliopsoas haematoma with evidence of active bleeding. This did not appear to be a direct complication of thrombolysis but was apparently a spontaneous bleed resulting from anticoagulation.

The scan result was discussed with [Dr F] by the surgical registrar ([Dr I]). The anticoagulation was reversed with fresh frozen plasma and Vitamin K. TED stockings were applied and the INR was rechecked.

[Mr A] remained in the emergency department because of bed shortages. He was seen there on the morning of [Day 2] by [Dr F's] registrar [Dr C]. There had been improvement in [Mr A's] symptoms and the INR was 1.4 (normal). Both legs were warm and ischaemia was not a concern. Warfarin was withheld.

[Mr A] was transferred to [the] Ward for further observation. A detailed weekend handover plan was recorded in the clinical notes including the intention to handover care to [Dr D] when he returned on Monday. Both limbs were noted to be well-perfused with palpable peripheral pulses bilaterally and good capillary refill.

At 21:30 on [Day 2] the duty house surgeon reviewed [Mr A] regarding chest pain, sweating and increased respiratory rate. He was diagnosed as having angina and was treated with GTN, analgesia and oxygen. The symptoms resolved. There were no ECG changes. Troponin levels were initially normal but subsequently became marginally elevated. This was discussed with the medical registrar on call.

On [Day 3] [Mr A] was reviewed by [Dr C] (as registrar on call for the weekend) during his morning ward round. Later that day (around 18:40) [Mr A] was seen by the duty house surgeon regarding right testicular pain. Augmentin was prescribed for possible epididymoorchitis.

At about 03:30 on [Day 4] [Mr A] developed pain in the left ankle and foot. He was seen by the on call house surgeon at about 04:00 who prescribed analgesia and then at 04:45 by the surgical registrar on call [Dr J]. He found that there was persisting pain and the foot was cool. No pulses were palpable or detectable using the hand-held Doppler. Capillary refill time was prolonged at 4 seconds but sensation was normal. Movement and/or muscle power were not recorded. The left leg was swollen but there was no evidence of a compartment syndrome. [Dr J] diagnosed acute ischaemia, discussed the problem with the General Surgeon on call ([Dr H]) and arranged for an urgent CT angiogram.

The CT angiogram [CTA] was completed by 06:30 and the provisional report was phoned through by the radiologist [Dr G]. It is not entirely clear from the records who received this message but the radiology report suggests that the house surgeon was phoned at 07:00.

According to [Dr G's] hand written report the CTA showed extension of an occlusion of the distal superficial femoral artery which had previously been noted [during his first admission in 2006]. The popliteal artery was patent from above knee to the trifurcation. Some movement artefact was noted but the overall

impression was 'Increased length of occlusion LEFT distal SFA. Single left calf vessel Run off POST TIB also now occluded presumably by acute thrombus'.

The clinical notes made by the House officer on the morning of [Day 4] suggest that the understanding of the clinical team was that the CTA showed there was an increase in the length of the occlusion of the SFA and that the posterior tibial artery (previously the only run off) was now occluded. There was no mention of the quality of the CTA, the movement artefact, or whether the CTA had been viewed directly by the clinical team.

The clinical situation, including the provisional CTA report, was discussed with the vascular service at Waikato Hospital. This appears to have been contact with the Waikato acute registrar by either the surgical registrar [Dr J] or the house surgeon. There is no record of the content of that discussion and in particular no record of what information about the CTA was conveyed to Waikato but the conclusion was that [Mr A] was not a candidate for (revascularisation) surgery given the radiology findings and heparin infusion was suggested. The outcome of the CTA (and contact with Waikato) was also discussed with [Dr H]. Heparin infusion was started.

[Dr C] saw [Mr A] on his Sunday round at approximately 08:30. In his report he states that he discussed the results of the CTA with [Mr and Mrs A], that there was no surgical option for revascularisation and the rationale for heparin treatment. There is no record of this discussion in the clinical records. It is also not clear how [Dr C] obtained his information about the CTA and management plan but this was most likely through handover from the night registrar [Dr J].

[Dr C] states in his report (but again without corroborating evidence from the clinical records) that at this stage the 'Left lower leg was cooler than the right, there were no palpable peripheral pulses bilaterally but sensation and muscle power were preserved'. He believed the leg was viable and discussed the findings with [Dr E] (Vascular surgeon attending conference in [another city]) by phone. The decision was made to continue with heparin until Monday, when [Mr A] would be reviewed by the vascular team.

At 14:00 the nursing record suggests the left foot was 'pale and cool to touch' and pain was rated at 8/10. At 15:15 it appears there was exacerbation of acute pain (9–10/10) and the foot was 'blue, cool, movement, no sensation'. The registrar [Dr C] was paged and verbal orders were given for pain relief.

[Dr C] states in his report that he saw [Mr A] at about 17:00 on [Day 4] (after finishing in the operating theatre) but there is no note of this in the clinical records. He says that left foot was worse than in the morning, with reduced sensation and pain on movement. He believed at this stage that the only possible surgical option was amputation but there was no urgency for surgery that evening. Heparin treatment and analgesia was continued.

[Dr C] states in his report that he saw [Mr A] at about 22:00 on [Day 4] but there is no note of this in the clinical records. He states that:

> 'I asked for [Mr A] to be kept Nil-By-Mouth after midnight for review by the Vascular Team in the morning and possible amputation if his condition was not improving. [Mr A] would continue to be observed overnight with regular measurement of pulse, blood pressure, temperature and Oxygen saturation and the On Call Registrar would be called to review him in case of deterioration. In the presence of signs of sepsis with fever, tachycardia and hypotension a decision about possible surgery would need to be discussed with the On Call Vascular surgeon.'

The nursing records at 22:30 and 22:45 make no mention of these highly specific instructions with the exception that he was to be kept 'nil-by-mouth' from midnight. [Dr C] had no further involvement in [Mr A's] care.

[Mr A's] condition deteriorated overnight. Severe pain in his left foot required a Fentanyl infusion for relief. He developed a fever and suffered rigors. His respiratory rate was increased. He was seen by the house officer on call and the results of laboratory investigations (received after 06:00) identified acute renal failure. This was thought to be on the basis of sepsis from his ischaemic foot. Antibiotics and intravenous fluids were prescribed.

[Mr A] was seen by [Dr D] and [Dr E] on their morning ward round. At that stage he clearly had irreversible ischaemia and was unwell with acute renal failure and sepsis. A left above knee amputation was performed [on the morning] of [Day 5] and [Mr A] went to the intensive care unit for post-operative management.

Unfortunately [Mr A's] condition did not improve and he developed ischaemia of the right lower limb. On [Day 6] his condition was discussed with [a] (haematologist) who considered that HITS (Heparin Induced Thrombocytopenia) was a strong possibility. Heparin was discontinued. A right above knee amputation was performed on the afternoon of [Day 6]. [Mr A's] condition continued to deteriorate and he died at 20:00 hrs on [Day 6].

Opinion

1. Please comment generally on the standard of care provided to [Mr A].

During the majority of [Mr A's] association with Tauranga Hospital the standard of care appears to have been appropriate.

a. The management of the femoro-femoral graft occlusion [during the first admission], the subsequent management of complications and the early management of the retroperitoneal bleed appear to have been handled well and to a high standard of care.

b. The initial management of the ischaemia affecting the left foot that developed in the early morning of [Day 4] was handled expeditiously. The appropriate observations appear to have been made (and recorded) and action was taken quickly. The responsible consultant ([Dr H]) was consulted by phone.

c. Following involvement of the vascular team on Monday morning and the intensive care unit for post-operative management the standard of care appears to have been appropriate.

However, I do identify some deficiencies in the standard of care provided especially in the period from Sunday morning to Monday morning.

d. There is no evidence that the CTA was viewed directly by the clinical team responsible for managing [Mr A] on [Day 4]. The team appears to have relied on a provisional report from the radiologist and the clinical record suggests no consideration was given to the quality of the CTA. This appears to have been crucial in the subsequent management.

i. The clinical team appears to have believed that there were no patent crural runoff vessels. It appears that this is the information that was discussed with Waikato and this led to the conclusion that the condition was not salvageable by vascular reconstruction. This appears to have been the information handed over to [Dr C] on the Sunday morning.

ii. An independent report of the CTA (attached)[14] provided to me by Dr Andrew Laing, vascular radiologist, Christchurch

[14] "As requested I reviewed [Mr A's] CT femoral angiogram from Bay Imaging Group, examination dated [Day 4].

Images have been reviewed with regard to left lower limb circulation. There is moderate atheromatous irregularity of the aorta without significant aortic stenosis.

The left common internal and external iliac arteries are of normal diameter. Common femoral and the profunda femoris are normal. The fem-fem crossover is widely patent. There is a moderate sized haematoma in the adductor compartment of the left thigh. Superficial femoral artery is patent down to mid-thigh level where there is abrupt occlusion, with poorly developed collaterals at this level. The occlusion extends over approximately 7cm with reconstitution of an isolated popliteal segment, with a further occlusion at popliteal bifurcation.

Assessment of calf run-off is significantly degraded by movement, particularly in the proximal calf. There are probably patent segments of anterior and posterior tibial artery in the mid calf, but there is no significant opacification of crural arteries beyond this level. It is difficult to be certain as to whether lack of opacification of distal arteries is due to delayed filling, or arterial occlusion. However in view of the good level of opacification of the isolated popliteal segment it is likely that the majority of his calf arteries were occluded at the time of the scan. There is extensive subcutaneous oedema in the left lower limb."

Hospital suggests that the CTA was of poor quality (because of the movement artefact noted by [Dr G]) and the apparent lack of crural runoff vessels in the calf could be the result of either poor flow resulting in delayed filling or arterial occlusion.

iii. Given the uncertainties in relation to the CTA greater consideration should have been given to an attempt to revascularise the limb. In my opinion a consultant vascular surgeon should have been involved in making the critical management decisions after review of the CTA. The documentation provided to me makes no reference to the involvement of a consultant vascular surgeon.

e. The consultation with the Waikato vascular service by phone was not adequately documented. The limited documentation suggests the consultation was probably a conversation between two registrars and there is no mention of a consultant being directly involved in the decision not to transfer [Mr A]. This does not appear to have been in [Mr A's] best interests under the unusual circumstances of both of the local vascular surgical consultants being away. In my opinion consultant-to-consultant communication would have been more appropriate.

f. It is noteworthy that during the entire weekend, and in fact the entire admission, until Monday morning there appears to have been no direct review of [Mr A] by a consultant. [Mr A] was assessed and managed entirely by resident medical officers with telephone reference to the consultants responsible for his care. The only involvement of a consultant with vascular surgical expertise appears to have been the phone call by [Dr C] to [Dr E] on the Sunday morning.

g. It is not clear why [Mr A] was not transferred to Waikato for management of his acutely ischaemic lower limb. There was no local expertise in vascular surgery available in Tauranga and there was an existing arrangement for management of vascular emergencies by Waikato. There appears to have been a failure to consult at a senior level and this appears to be a contributing factor to the lack of transfer and the outcome. The failure to transfer [Mr A] on the morning of the [Day 4] appears to have significantly narrowed the options for management when he deteriorated in the evening and is probably the single biggest determinant of the eventual outcome.

h. The lack of consultant involvement in the decision not to transfer to Waikato is in contrast to the 'on call arrangements for vascular acutes', as outlined in the memorandum from [the Business Manager Surgical

Services] dated 11/09/2003 which states 'If [Dr K] (now [Dr E]) or [Dr D] are not on call, the on call consultant may contact [Dr K] (now [Dr E]) or [Dr D] to enquire if they are able to attend the case' and 'When neither [Dr K] (now [Dr E]) or [Dr D] are available, usual procedure is that the on call consultant makes the decision to either transfer the patient to Waikato or to perform the acute surgery if they think this will result in the best outcome for the patient.' This clearly identifies consultant responsibilities.

i. It is not clear whether any consultant actually took responsibility for management of [Mr A] during the weekend. [Dr H], (a locum consultant), was consulted by phone but the fact that [Dr C] phoned [Dr E] (despite him being away at a conference) suggests a lack of clarity as to who was taking responsibility.

j. When [Mr A's] condition deteriorated on Sunday evening (at about 15:15hrs the registrar was called (appropriately) and verbal orders were given. The nursing notes record the status of the left limb and that the registrar and (later) the on-call house surgeon were contacted. There is no entry in the clinical record from the registrar but the nursing staff seem to have acted appropriately in conveying their concerns to the medical staff. There was a clear expectation that [Mr A's] left lower limb would be amputated in the morning (once the vascular team had seen him) and despite [Mr A's] deterioration and development of acute renal failure there does not appear to have been any clinical event that suggested to the medical or nursing staff that earlier amputation was required. Overall I am satisfied that the nursing staff acted appropriately and that under the circumstances, where there was no local vascular service available, that with the exception of the relative lack of documentation the resident medical staff actions were appropriate.

2. Please comment generally on the standard of care provided by [Dr C] to [Mr A].

a. [Dr C] saw [Mr A] on the morning of [Days 2 and 3] and again of the morning of [Day 4]. He was the only member of the medical staff to provide continuity of care and in general his actions were of an appropriate standard.

b. On [Days 2 and 3] his assessment of [Mr A] was recorded in the clinical notes but there is no record of his actions on [Day 4]. The lack of documentation following the development of ischaemia on Sunday morning and following the deterioration on Sunday evening is of concern. There was a significant change in [Mr A's] condition and [Dr

C] made significant management decisions (the decision not to seek further advice following the deterioration on Sunday evening for example) and these should have been recorded in the clinical notes. The lack of documentation falls short of an appropriate standard of care. This departure from the expected standard of care was of mild to moderate severity.

c. The lack of documentation may have contributed to the lack of involvement of the on call registrar through the night of [Day 4]. In [Dr C's] report he states that he expected [Mr A] would be observed overnight with regular measurement of pulse, blood pressure, temperature and Oxygen saturation and the On Call Registrar would be called to review him in case of deterioration. However this message does not appear to have been passed on to the nursing staff, and when deterioration occurred the house surgeon rather than the registrar was contacted. It is impossible to say whether this had any impact on the clinical outcome.

d. [Dr C] did not inform the consultant responsible for [Mr A's] care of the significant deterioration in his condition that occurred on the evening of [Day 4]. There do appear to be some mitigating circumstances (noted below) but I consider that this lack of consultation falls below an appropriate standard of care. This departure from the expected standard of care was of moderate severity.

If not answered above, please provide the following advice, giving reasons for your view.

3. Please comment on the appropriateness of the investigations performed from [Days 1 to 5], and the actions taken following the results.

    a. The investigations performed and actions taken appear to have been appropriate with the possible exception of the response to the CTA as discussed above.

4. Please comment on the adequacy of [Dr C's] communications with senior medical colleagues on [Days 4 and 5]. In particular, should he have contacted anyone else following [Mr A's] deterioration on [Day 5]?

    a. [Dr C] acted on the understanding (right or wrong) that vascular reconstruction was not possible for [Mr A] and that the only option for him following the clinical deterioration on the evening of [Day 4] was amputation. As a decision had already been taken not to transfer [Mr A] to Waikato this was effectively the only option. While it is clear that such a significant deterioration should have been discussed with the consultant taking responsibility for [Mr A's] management, the relative

lack of prior consultant involvement and [Dr C's] knowledge that the vascular surgeons were not available may have contributed to his decision not to inform his senior medical colleague.

b. [Dr C] had no involvement with [Mr A's] care beyond the evening of [Day 4].

5. Please comment on the adequacy of the clinical observations performed from [Days 1 to 6], in particular observations of [Mr A's] peripheral circulation.

a. I am satisfied that the observations made were appropriate under the circumstances.

6. Any other comment you wish to make

a. This case illustrates the difficulty in maintaining a specialist vascular service with suboptimal staffing levels. With both vascular surgeons away there needed to be explicit instructions about transfer to the vascular service in Waikato and greater consultant involvement rather than less. Management of acute ischaemia of the lower limb is amongst the most difficult of problems faced by vascular surgeons and it is not appropriate for it to be managed almost entirely by resident medical officers without significant specialist input. Decisions on limb viability and vascular reconstructability require specialist knowledge. This applies especially to decisions not to reconstruct since these are often self fulfilling with respect to the outcome.

b. It was naive to believe that the simultaneous absence of the two vascular surgeons would be adequately compensated for by the simple arrangement for transfer of vascular cases to Waikato. The usual patterns of practice were disrupted, there was a lack of consultant involvement and accountability, and lack of clarity regarding lines of communication.

c. In my opinion BoPDHB failed to provide an adequate standard of care despite intentions to do so and the contingency plans that had been put in place in 2003. This departure from the expected standard of care was of moderate severity.

Summary

[Mr A's] case raises some concerns.

[Dr C's] management fell short of an adequate standard of care but the deficiencies were of mild to moderate severity and were probably not significant determinants of the clinical outcome.

> BoPDHB failed to provide an adequate standard of care as a result of a systems failure. This failure was of moderate severity and may have been a significant determinant of the clinical outcome.
>
> Professor Justin Roake
>
> Professor of Surgery and Consultant Vascular Surgeon"

Responses to provisional opinion

The family
Mr A's wife stated:

> "I have tried to move on but knowing more should have been done makes it extremely difficult. My lack of action on the Sunday concerns me but you would have thought that being in hospital was the right place and trust that the doctors and nurses were making the right decisions. …
>
> I hope Tauranga Hospital and the Vascular Department in particular make sure in future they have protocols in place whereby better decisions are made if complicated emergencies such as [my husband's] arise when both vascular Surgeons are away."

Ms B (Mr A's daughter) stated:

> "I am aware that my mother sent a letter outlining some of her concerns, and mentioned feelings of remorse for not making more of a fuss on the Sunday. My mother did ask repeatedly for a senior doctor to see my father on the Sunday afternoon, but to no avail. I am both upset and angry to learn that my mother feels remorse about this — she should not. Distressed family members should not have to make a fuss in order for patients to receive an acceptable standard of care. My father was supposed to be in the right place (hospital).
>
> I also have feelings of remorse. I visited my father [during his first admission in] 2006, but went back [home] when he was discharged on [date]. Although I was aware my father had been readmitted on [Day 1], it was not until midday on [Day 4] that my mother phoned to say things were 'not good'. My mother said there was no point coming until Monday morning when the doctors [Dr E and Dr E] were back, as had been implied to her. Unfortunately this is what I did. While it would have been difficult for me to travel to Tauranga on the Sunday afternoon for various reasons, I will forever regret not doing so.

> By the time I arrived on the morning of [Day 6] my father was in surgery having his left leg amputated and he never regained consciousness. Perhaps I was fortunate not to have seen him on the Monday morning — my [brother] will probably never get over the shock of seeing him in such a terrible state. I will certainly never get over the shock of seeing my father in ICU post surgery — he was barely recognisable. We then had to watch him deteriorate further, consent to numerous invasive procedures including amputation of his right leg, and finally make the heartbreaking decision to discontinue life support.
>
> I have tried to move on by convincing myself that my father's death was unavoidable. However, it now seems his death probably was avoidable, and an attempt at revascularisation might have even saved his leg. This is not an easy thing to live with. I can only hope that Bay of Plenty DHB and clinical staff learn from this, accept responsibility and adopt all recommendations made by the Commissioner so that others do not have to experience something similar. At least then my father's death will not have been totally in vain.
>
> Finally, I hope my family receives a long overdue apology from Bay of Plenty DHB, including an acknowledgement that their failure to provide an adequate standard of care may have been a significant determinant of his death."

Mr A's son stated:

> "My expectations of Tauranga Hospital's staff are about their collective and more particularly, individual professional duty of care. This concept is old and well-defined, and it is at the core of practice in a profession, and it is also the leading element of vocational responsibility.
>
> People who choose medicine have the most elevated responsibility of all, to those whom give their trust. Doctors choose a very stiff vocational responsibility. Doctors elect to accept responsibilities that include a duty to lead in and to practice high standards of care. No physician has to work at or to accept long-term shortcomings of any hospital or DHB. Senior consultants have a duty to be activists for 24/7 good standards of care and to do their very best to ensure it. That is per the standards of their profession and not standards imposed by me. But I am entitled to expect it.
>
> My father was entitled to trust in doctor vocational responsibility. Doctors hold themselves out for it. This means that in their absences, they need to ensure proper colleague briefings and care hand-off, have in place good and clear protocols or agreed practices (regardless of the suitable lead or otherwise of their DHB employer). It is principally the responsibility of senior clinicians to lead and to have created patient safeguards at their chosen places of work. …
>
> If a DHB permits a hospital culture of frequent poor staff communications, poor patient hand-offs or clinical records, knowledge or skill gaps, sub-optimal attitudes

or poor competencies; it is in some degree dysfunctional or irresponsible (if not reckless). The managers of the DHB accept positions that also have attached a weighty duty. There are arguably no organisational management positions with greater responsibilities.

Tauranga Hospital and its staff unarguably have an absolute professional duty to ensure best they can with the resources and knowledge available, that good standards of care are close to the same 24/7 and every day of the year. They otherwise have a responsibility to tell their current consumers that staffing levels and care levels might be '*sub-optimal*' at a weekend."

Dr C
Dr C stated:

"I completely accept that I should have made notes of my reviews of [Mr A] on [Day 4]. As this was a Sunday, the hospital was at a fairly low staffing level, certainly lower than the staffing levels that would be working during the week. I was therefore busy with patients, and when I was called about [Mr A] getting worse in the afternoon I was in Theatre operating. As far as I recall there was another case waiting and I saw [Mr A] between the cases. The On Call Registrar at Tauranga Hospital covers the Emergency Department, the Wards and operates if need be, so he can be very busy at times. But I accept that I should have made notes, and I can assure you that I understand the criticism you have made of me in that regard.

You have commented upon my recall of the three occasions on which I saw [Mr A] that day … This is because, the day after the weekend on call I had a conversation with [Dr D] and [Dr E] about the events and was advised to make notes about what happened. So I made some written notes shortly thereafter and most of my explanations were based on these notes. And of course the tragic outcome made everything difficult to forget — the whole event dominated my life for a considerable length of time.

I can also clarify a question Prof Roake had as to how I knew of the information about the CTA … With regards to the CTA, I remember seeing the written provisional report by the Radiologist and the note from the discussion with the Vascular service at Waikato Hospital, stating that there were no reconstructable vessels below the knee and the Vascular opinion was that the patient was not suitable for reconstruction. That was also the message at handover by the Night Registrar. On the basis of that information I had my discussion with the family.

As to whether I should have contacted the responsible consultant, I would ask you to consider the following:

1. I was not aware of the memorandum as to the on call consultant being able to call the vascular consultants … I knew that the patient had already been

discussed with the consultant on call ([Dr H]) and the Vascular service at Waikato and the decisions had already been made. Those decisions had been made with the provisional CTA report available, which had been ordered on an urgent basis (in the early hours of Sunday morning) after consulting [Dr H].

2. I discussed [Mr A] with [Dr E] on Sunday morning, because I wanted to let him know about the events and to confirm he was happy with the current management.

3. By Sunday afternoon therefore I understood that [Dr H] and [Dr E] were of the view that vascular reconstruction was not an option, so that amputation was the only remaining surgical option. The management plan, of which it was my impression both [Dr H] and [Dr E] were aware, was to continue with the heparin until Monday, when [Mr A] would be reviewed by the vascular surgeons.

4. When [Mr A's] pain got worse later on in the day, again I presumed that we would be able to control his symptoms until a final decision about amputation would be made on the Monday. As explained in my first letter to you, I understood that amputation was the only surgical option, and believed that if we could control the pain there was still a possibility that [Mr A's] symptoms might improve. I also believed that, due to the risks to [Mr A] of the amputation surgery, we could and should wait until the Monday morning for the vascular surgeons to return and assess when and how the surgery should be done.

I would like to sincerely apologise to [the family] about my failure to document clearly in the notes the events of [Day 4] regarding my assessment of and management plans for the care of [Mr A]. If you decide, after considering my explanation above, that in not contacting the responsible consultant after [Mr A's] condition deteriorated, this also constitutes a breach of the Code, then I will accept that assessment, and would be happy to apologise accordingly.

I realise that my actions constitute a breach of the Code of Rights, which I deeply regret and for which I am sorry. I would like to also assure you and the family that all my actions were with the sole intent of providing the best care possible for [Mr A] in a very difficult clinical situation — sadly, the end result was not what I was hoping for. Following that tragic event I have reviewed my practice and can assure you that I will work hard not to repeat these omissions in the future.

I hope that the family will please accept my sincere apologies and deep regret for the loss of their husband and father."

Bay of Plenty DHB

Bay of Plenty DHB advised that it did not agree that there had been a breach of the Code in relation to its systems of care.

Dr D commented that Mr A was not initially reviewed by a consultant as he was cared for in ED for 24 hours after admission with a general surgical diagnosis (ie, retroperitoneal haematoma in a patient taking warfarin). Dr D stated:

> "For a number of reasons, in common with the majority of public hospitals in New Zealand, Tauranga Hospital does not provide an on-site 24 hours a day, 7 days a week vascular surgical service with full-time specialist vascular surgeons. Few hospitals in New Zealand have such an arrangement and therefore most hospitals in New Zealand are in the position of having to manage acute vascular surgical problems with the support of major tertiary hospitals. In Tauranga's case this is Waikato Hospital and there is in addition to a clearly worded statement [the 2003 memorandum], a clear understanding amongst the general surgical consultants and registrars, that acute vascular surgical consultants ([Drs D and E]) are not available. The portal of referral to the acute Waikato vascular surgical service is by way of the vascular surgical registrar. Waikato Hospital maintains a dedicated vascular surgical on-call rota distinct from general surgery and it is specious to suggest that [Mr A's] case would have been discussed with anyone other than the vascular surgical acute registrar. …
>
> Apart from the basis of judging by outcome, I do not see in the report information to suggest that the system did not work i.e. there was not a discussion of the patient with Waikato Vascular Surgical service and that given the information available at the time in terms of clinical and radiological findings and history, that not unreasonable advice was given.
>
> …
>
> There were no symptoms of imminent threatening ischaemia and a vascular surgical review within 24 hours was assured. This meets the BOPDHB requirements of a consultant review within 24 hours of an acute problem … in this case the acute problem was the development of limb ischaemia on the morning of [Day 4]."

Radiologist Dr G, who performed and reported the CTA, commented that Professor Roake was provided with only a limited portion of the examination. Dr G stated that he would agree with Professor Roake's assessment if this had been the only imaging information available. However, full imaging information, including the CTA performed [during the first admission in] 2006, were available, and he consulted with a senior vascular radiologist who "concurred with my report and hence there was no need to question the validity of the findings or express any doubt in the preliminary report".

Further expert advice

The responses to the provisional opinion, as well as the provisional opinion, were sent to Professor Roake to review his original advice. He stated in his further advice:

"I have reviewed the Provisional HDC Report on [Mr A] and the responses from interested parties. I have no real issues with the report or its conclusions.

[Dr D] and [Dr G] have both raised issues about the significance of the CTA report and my comments on it.

I acknowledge that the original dataset viewed by [Dr G] contains information that was not available to me and that this could conceivably increase his confidence in the accuracy of his interpretation of the images. Nevertheless I have no doubt he would acknowledge that virtually all clinical tests have both false positive and false negative outcomes and while I agree that [Dr G's] interpretation of the scan is most likely to be accurate there are other explanations for the apparent absence of run off vessels. My major point here was that the CTA result was not discussed with a consultant vascular surgeon and [Mr A] was thereby denied any opportunity to have his limb explored, acute thrombus evacuated or 'on-table' thrombolysis performed. The decision to explore or not should have been taken by a senior surgeon taking account of the CTA result and other factors. I wish to put on record that I am in no way being critical of [Dr G] who appears to have provided an excellent service.

Equally I accept [Dr D's] point that had [Mr A] been reviewed by a vascular surgeon a decision not to intervene other than by anticoagulation was quite likely given the complexity of his case. I also accept that the outcome most likely would have been unchanged especially if HITS was actually occurring. However this does not alter my opinion that [Mr A] should have been reviewed by a senior surgeon and that under the circumstances transfer to Waikato was the most appropriate course of action. [Dr D] sees this as 'an individual performance failure' rather than a systems failure. I agree that there is an individual performance issue here (I was not asked to comment upon this other than in relation to [Dr C]) but there also appears to have been a systems failure."

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are applicable to this complaint:

RIGHT 4

Right to Services of an Appropriate Standard

(1) Every consumer has the right to have services provided with reasonable care and skill.

(2) Every consumer has the right to have services provided that comply with legal, professional, ethical, and other standards.

(3) Every consumer has the right to have services provided in a manner consistent with his or her needs.

…

(5) Every consumer has the right to co-operation among providers to ensure quality and continuity of services.

Other relevant standards

Medical Council of New Zealand
"Good Medical Practice — A Guide for Doctors" (Medical Council of New Zealand, 2004):

"Domains of competence:

…

3. In providing care you must:

…

- keep clear, accurate, and contemporaneous patient records that report the relevant clinical findings, the decision made, the information given to patients and any drugs or other treatment prescribed."

Bay of Plenty DHB
The Bay of Plenty DHB policy *Medical responsibility for patient care* (February 2006) states:

"**STANDARDS TO BE MET**

1. Patient Admission

…

j. It is acceptable for responsible clinicians to provide advice to junior medical staff by phone in some circumstances. In more complex and uncertain situations the responsible specialist is expected to determine the need to see the patient in person. This determination must take into account the experience level of the junior staff member.

…

l. In all cases it is mandatory that the responsible specialist physically review the patient either on the day of or during the day following admission."

Introduction

In many respects, Mr A received a good standard of care from Tauranga Hospital. He suffered from a number of serious illnesses that made his care complex and challenging. However, having considered the advice from my expert, vascular surgeon Professor Justin Roake, I am concerned by some aspects of the care provided to Mr A. In particular, Dr C's standard of communication (both written and verbal) was poor, and the arrangements for vascular surgery cover at Tauranga Hospital were unsatisfactory. Accordingly, for the reasons given in more detail below, I have concluded that Dr C breached Rights 4(2) and 4(5) of the Code of Health and Disability Services Consumers' Rights (the Code), and Bay of Plenty DHB breached Rights 4(1), 4(3) and 4(5) of the Code.

Opinion: Breach — Dr C

I accept the advice from Professor Roake that Dr C provided a generally appropriate standard of care to Mr A. However, Dr C's record-keeping on Day 4 was below an acceptable standard, and he failed to discuss Mr A's care with the responsible consultant surgeon on the evening of Day 4.

Dr C states that he met with Mr A and his wife at 8.30am, discussed the results of the CT angiogram, and advised that surgery was not an option. Dr C also discussed Mr A with vascular surgeon Dr E (but not with Dr D, the vascular surgeon who had performed an emergency operation on Mr A during his first admission). However, Dr C failed to make a record of his discussions with Mr and Mrs A, and did not record his discussion with Dr E. This was all significant information to allow other members of the clinical team to understand what had been discussed and agreed.

Dr C reviewed Mr A again at 5pm, found that Mr A's condition had deteriorated, and appears to have decided that the only possible surgical option was amputation, although he says now that he was still hopeful that the anticoagulation treatment would work. This may have been a correct assessment, but Mr A's condition had deteriorated and he should have contacted the on-call surgeon with this information. I also note that Dr C made no record of his assessment, plan, or discussion with Mr A. It appears that Dr C was hoping that any surgical decisions could wait until Dr D's review the following morning. I endorse Professor Roake's view that, based on Mr

A's condition, Dr C should have contacted the on-call consultant responsible for Mr A's care (Dr F) on the evening of Day 4.

Dr C assessed Mr A just before the end of his shift at 10pm. He advised HDC that he gave a comprehensive set of instructions to nursing staff. However, there is no record of these instructions, in stark contrast to the detailed plan documented in the clinical notes prior to the weekend. It is notable that the nursing staff contacted the on-call house officer when Mr A's condition deteriorated, rather than the on-call registrar. It appears that Dr C's instructions were not sufficiently specific.

When called by the nursing staff to review Mr A, less than 45 minutes after Dr C's final review, the house officer recorded in the notes that he reviewed Mr A's history. However, this review would have been without the benefit of any of the details of Dr C's three assessments in person (and one by telephone). This absence of information may well have jeopardised Mr A's care, as succeeding medical staff would not have been fully aware of the deterioration in Mr A's condition during the day. The Medical Council in *Medical Practice in New Zealand* (2005) states:

> "There is a strong ethical duty to maintain adequate medical records, as well as some legal obligations to similar effect. The notes and other record entries should be sufficient to be understood by other medical professionals … Inadequacy of medical records may itself amount to professional misconduct. In any other matter of complaint, the medical record will often be vital, particularly where the complaint is made and investigated a long time after the incident in question. This is not only in the patient's interest that accurate and detailed medical records be maintained, but it is often in the doctor's interest too."

In his response to the complaint, Dr C accepted that he should have made "*better* notes of [his] assessments" on Day 4 (my emphasis). Yet he made no notes at all on three consecutive assessments of Mr A.

Summary
Dr C's failure to document his review did not meet professional standards, and may well have jeopardised the subsequent care provided to Mr A as it deprived other clinical staff of important information. It is an important professional responsibility to "keep clear, accurate, and contemporaneous patient records". In his care on Day 4, Dr C singularly failed to fulfil this responsibility. He omitted to do so on three consecutive occasions when his patient was deteriorating significantly. This was a serious omission and a breach of Right 4(2) of the Code.

Dr C should have contacted the responsible consultant following his review of Mr A at 5pm on the evening of Day 4. Mr A was suffering from a vascular surgery emergency that required the support and advice of a consultant surgeon. Ultimately, it is irrelevant whether the clinical management decided by Dr C was correct — given Mr A's condition, Dr C should have consulted the on-call consultant surgeon. By not

doing so, he failed to co-operate with other clinicians "to ensure quality and continuity of services", and therefore breached Right 4(5) of the Code.

Opinion: Breach — Bay of Plenty District Health Board

Although Mr A received good care at Tauranga Hospital for much of his admission, aspects of the management of his care were poor. In particular, there was an absence of specialised vascular surgery and consultant surgeon involvement. Although I have been critical of Dr C's actions on Day 4, it appears that on the weekend, the operation of systems in place at Tauranga Hospital did not ensure an appropriate standard of care for a patient with acute ischaemia of the lower limb, at a time when no vascular surgeon was available.

Lack of consultant review

Although there were some telephone conversations with the consultant staff, Mr A was not assessed in person by a consultant from admission in the early afternoon of Day 1 until the morning ward round on Day 5. For a patient with such a complex set of co-morbidities, whose condition was deteriorating, review in person by a consultant was essential, yet it did not occur for more than 90 hours after his admission. My expert refers to this absence of consultant participation as "noteworthy". In my view it is unacceptable. Despite his diagnosis, Mr A's care was managed by registrars, with an occasional telephone call to a consultant surgeon. It is notable that the first time Mr A was reviewed by a vascular surgeon, the decision was immediately made to take him to theatre.

I note that Bay of Plenty DHB's own policy states that "it is mandatory that the responsible specialist *physically review* the patient either on the day of or during the day following admission" (my emphasis). In my view (shared by my expert) Mr A's presentation was complex and an "uncertain situation". According to the same DHB policy, this should have resulted in a review of Mr A by a consultant, certainly following his admission to the ward on the afternoon of Day 2.

It its response, Bay of Plenty DHB appears to suggest that there was nothing wrong with Mr A not having been reviewed in person by a consultant for over 90 hours after his arrival at ED, despite his complex presentation and medical history.

In Mr A's case, the decision made on Day 4 appears to have been to wait for Monday morning and Dr D's return. I note that Dr C spoke to Dr E on the Sunday morning, discussing Mr A, but it is unclear why at no stage during the weekend was an attempt made to contact Dr D, who knew Mr A well. Dr D commented that, until his arrival on the ward round on Monday morning, he was unaware of any deterioration in Mr A's condition.

Failure to consult vascular surgeon
Tauranga Hospital had a memorandum (from September 2003) setting out the process to be followed in the event of the absence of the vascular surgeons.

The main portal to vascular surgery in the event that Drs D and E were absent was via Waikato Hospital, and Tauranga Hospital was required to have a robust system whereby such specialist advice was obtained. The on-call general surgery consultant could also telephone the Tauranga consultant vascular surgeons, although this aspect of the cover arrangements may not have been widely appreciated — Dr C advised that he was not aware of the memorandum "as to the on-call consultant being able to call the vascular consultants".

I endorse my expert's view that when a patient requires specialist vascular surgery review, there needs to be "greater consultant involvement rather than less". As noted by Professor Roake:

> "Management of acute ischaemia of the lower limb is amongst the most difficult of problems faced by vascular surgeons and it is not appropriate for it to be managed almost entirely by resident medical officers without significant specialist input."

A CT angiogram was organised in the early hours of Day 4, yet it was not reviewed by either the clinical team looking after Mr A or more importantly, by a specialist vascular surgeon. I agree with my expert's view that, following the CT angiogram, a consultant vascular surgeon should have been involved in the decision-making. There was a telephone conversation with a surgical registrar at Waikato Hospital, but there is no record of who was involved in this telephone consultation, or what was discussed. From the clinical record it is not clear whether the Waikato registrar was a member of the vascular surgery team.

Dr D's comment that it was "specious to suggest that [Mr A's] case would have been discussed with anyone other than the vascular surgical registrar" misses the point that relevant details of the consultation, including the identity of the person consulted, were not recorded.

Quite apart from the inadequacy of the record of the conversation, I endorse my expert's view that this discussion should have taken place between consultant surgeons, and not between unnamed registrars. The Waikato registrar would have been reliant on an account from a relatively junior member of non-specialised medical staff (ie, not a consultant or a vascular surgeon), and important facts, the significance of which may be recognisable only to a more experienced doctor, may have been omitted in the discussion.

As advised by Professor Roake:

> "There appears to have been a failure to consult at a senior level and this appears to be a contributing factor to the lack of transfer and the outcome. The failure to transfer [Mr A] on the morning of [Day 4] appears to have significantly narrowed the options for management when he deteriorated in the evening and is probably the single biggest determinant of the eventual outcome."

I endorse Professor Roake's comment that specialist knowledge is required when decisions are made on "limb viability and vascular reconstructability", and that "[t]his applies especially to decisions not to reconstruct since these are often self fulfilling with respect to the outcome."

Documentation

Substandard documentation is also a factor of this case, which raises the question of what teaching and audit Bay of Plenty DHB undertakes. Bay of Plenty DHB has advised that it has introduced teaching to ensure that resident medical officers improve their standards of documentation. Teaching is to cover:

> "Proper clinical documentation such that notes are legible, dated and timed with the writer identifiable, and that the notes reflect the actual discussion which took place between registrar and consultant with documented end-points and evidence of consumer buy-in."[15]

Mr A's case suggests that such guidance is needed. Although this problem is not unique to Bay of Plenty DHB, I intend to recommend that the DHB audit the standard of documentation by medical staff.

Communication with family

Mrs A was very concerned about her husband's condition when she left his bedside on the evening of Day 3. When she telephoned the ward later that night, she explicitly stated that she wanted to be informed if there was any change in her husband's condition.

By the time she and her son returned the following morning in time for the ward round, she was shocked to find her husband in a very distressed condition, after a significant deterioration overnight. Mrs A and family members had not been contacted and advised of this change.

Mrs A should have been contacted overnight to be advised of her husband's deterioration. Failure by hospital staff to do so shows a poor understanding of the responsibility towards the family of a significantly unwell patient. At best it was thoughtless, at worst it was heartless. No doubt the family's subsequent dealings with the hospital were coloured by this failure.

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[15] If "consumer buy-in" means that patients understand and agree to the proposed treatment, it would be preferable to state that "discussion with patient and consent is documented".

I also note that, when they attended on the Monday morning to find Mr A in significant distress, despite asking three or four times for a medical review (which was clearly required, as evident by actions taken once the medical review did eventually occur), ward staff elected not to contact a member of medical staff. Although I accept that the outcome would probably have been unaltered even if a doctor had been summoned, the decision not to contact a member of medical staff was an inadequate response to the family's concerns and the patient's condition.

Summary
There were significant failings in Mr A's care. The systems in place at Tauranga Hospital did not ensure adequate cover during the absence of both vascular surgeons. Mr A was not reviewed by a consultant surgeon in the critical stages of his admission following the diagnosis of a vascular surgery problem on Day 4. The subsequent discussion with Waikato Hospital was between unnamed registrars (apparently without the Waikato Hospital doctor viewing the CT angiogram), and was not recorded in adequate detail. A consultant vascular surgeon was not involved in the decisions regarding Mr A's management. This was all in the context of a patient with a complex set of co-morbidities, who was readmitted only the day after discharge, when he had required emergency surgery to repair a leaking graft site. In my view, Mr A required review by a vascular surgeon.

Professor Roake advised:

> "It was naive to believe that the simultaneous absence of the two vascular surgeons would be adequately compensated for by the simple arrangement for transfer of vascular cases to Waikato. The usual patterns of practice were disrupted, there was a lack of consultant involvement and accountability, and lack of clarity regarding lines of communication.
>
> …
>
> [Bay of Plenty DHB] failed to provide an adequate standard of care as a result of a systems failure. This failure was of a moderate severity and may have been a significant determinant of the clinical outcome."

I conclude that Bay of Plenty DHB did not fulfil its duty of care in relation to Mr A. Tauranga Hospital's cover arrangements did not work properly, and Mr A did not receive services in a manner consistent with his needs. Medical staff did not work together effectively to ensure quality and continuity of services. Accordingly, Bay of Plenty DHB breached Rights 4(1), 4(3) and 4(5) of the Code.

Recommendations

I recommend that Bay of Plenty DHB:

- Apologise to Mr A's family for its breaches of the Code and the failure to advise them of Mr A's condition over the night of Day 4. The apology is to be sent to HDC for forwarding.
- Arrange an independent review of the cover arrangements for vascular surgery. The results of this review are to be sent to HDC by **31 August 2008**.
- Arrange an independent audit of medical documentation. The results of this review are to be sent to HDC by **31 August 2008**.
- Review how it handles meetings with families after the unexpected death of a patient, including the use of independent advocates, by **31 August 2008**.

Follow-up actions

- A copy of this report will be sent to the Medical Council of New Zealand.
- A copy of this report with details identifying the parties removed, except the names of Bay of Plenty DHB and Tauranga Hospital, will be sent to the Director-General of Health and the Royal Australasian College of Surgeons.
- A copy of this report, with details identifying the parties removed, but naming Bay of Plenty DHB and Tauranga Hospital, will be sent to all district health boards, the New Zealand Resident Doctors' Association, and the Association of Salaried Medical Specialists, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.