Waikato District Health Board

ABI Rehabilitation New Zealand Limited

Nursing Services Manager, Ms N

A Report by the

Health and Disability Commissioner

(Case 13HDC00046)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. On 25 Month1 2012[1], Mr A, aged 58 years, was involved in an accident. He sustained multiple injuries and was taken to a public hospital (Hospital 1) in a critical condition, and underwent multiple surgeries. He spent time in the Intensive Care Unit (ICU) and was placed under the care of the Waikato District Health Board (Waikato DHB) Trauma Service. Treatment included deep vein thrombosis (DVT) prophylaxis. On 29 Month1, Mr A was transferred to the High Dependency Unit (HDU). On 9 Month2, he was transferred to a surgical ward and encouraged to mobilise. His medications on discharge from ICU included 40mg enoxaparin (Clexane)[2] prophylaxis, once a day.

2. Mr A made good progress. Hospital staff considered a transfer to an ABI Rehabilitation New Zealand facility (ABI), for further rehabilitation closer to Mr A's home.

3. Waikato DHB policy stated that discharge from Hospital 1 to another facility would occur only when discharging medical staff gained verbal acceptance from an admitting medical team. There were two co-existing ABI admission documents in place (one a policy and one a procedure), neither acknowledging the existence of the other, and each document providing a different process regarding medical review: the policy stating that a doctor should review the patient within 24 hours of admission, and the procedure making no reference to a timeframe for medical review after admission.

4. Waikato DHB told HDC that it was advised that an ABI doctor would admit Mr A on arrival. ABI told HDC that at no stage did it indicate that Mr A would be admitted by a doctor. No medical staff were contracted to work at ABI until 18 Month2.

5. The final arrangements for Mr A's discharge and transfer were made late on Friday 14 Month2. Public hospital staff met with Mr and Mrs A prior to discharge. Three syringes of enoxaparin and a prescription for analgesia were given to Mrs A to take with them. Hospital staff also met with the transfer flight nurse. The meeting details were not documented by Waikato DHB staff. The flight nurse's transport record does not refer to being advised of the thromboprophylaxis regimen.

6. The Hospital 1 discharge summary did not refer to discharge medications or thromboprophylaxis, and nor did it refer to supplementary documentation (including a faxed nursing transfer letter), which outlined discharge medications. At 8.15pm, Mr A arrived at ABI. He was not reviewed or admitted by a doctor on arrival. Mr A was mobilising appropriately. On the morning of Saturday 15 Month2, Mrs A took the hospital prescriptions for analgesia to a community pharmacy to be filled.

7. The enoxaparin was not on the discharge summary, and was not given by the staff at ABI. On 15 Month2, Mr and Mrs A enquired why Mr A had not yet been given

[1] Relevant months are referred to as Month1-Month2 to protect privacy.

[2] Clexane is used in a number of medical conditions, including to treat blood clots, to treat certain types of heart disease when used with aspirin, and to prevent blood clots forming after an operation, during hospitalisation or extended bed rest, or during haemodialysis. Clexane is one of a group of medicines called low molecular weight heparins (LMWH). These medicines work by reducing blood clotting activity.

enoxaparin. An ABI nurse telephoned Hospital 1 for clarification. The ABI nurse was given erroneous advice that enoxaparin was no longer needed.

8. From 15 to 17 Month2, Mr A was given inadequate pain relief. Confusion had arisen for ABI nursing staff in the absence of information on Hospital 1's discharge documentation regarding Mr A's ongoing medications.

9. On the morning of 18 Month2, Mr A developed chest pain and suddenly collapsed at about 6.55am. Sadly, he could not be revived.

Findings summary

Waikato DHB

10. Mr A's co-ordination and continuity of care was compromised for the following key reasons:

- The transfer of Mr A by Waikato DHB without obtaining verbal acceptance by an ABI doctor was not in accordance with Waikato DHB policy.
- Transfer documentation did not contain all the relevant and important clinical information.
- Waikato DHB staff did not ensure that there were clear written instructions passed on to ABI about Mr A's enoxaparin regimen.
- Mr A was transferred late on a Friday.

11. Waikato DHB did not ensure adequate quality and continuity of services for Mr A and, accordingly, breached Right 4(5) of the Code.[3]

ABI Rehabilitation New Zealand Limited

12. It was the responsibility of ABI to have adequate oversight and systems in place to support its staff and ensure its policies were clear and understood by all staff. Having two documents (one a policy and one a procedure) regarding admission, and ineffectively communicating that information to staff resulted in very unclear direction from ABI to its staff about the requirements for admission and the timing of medical review. Accordingly, ABI Rehabilitation New Zealand Limited failed to provide services to Mr A with reasonable care and skill and breached Right 4(1) of the Code.[4]

13. Adverse comment is made that Mr A had less analgesia than he needed for a period of approximately 48 hours.

Ms N

14. It was found that Ms N did not breach the Code.

[3] Right 4(5) of the Code states: "Every consumer has the right to co-operation among providers to ensure quality and continuity of services."
[4] Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."

Complaint and investigation

15. The Commissioner received a complaint about the services provided to Mr A by Waikato District Health Board and ABI Rehabilitation New Zealand Limited.

16. The following issues were identified for investigation:

- *Whether Waikato District Health Board provided an appropriate standard of care to Mr A in 2012.*
- *Whether ABI Rehabilitation New Zealand Limited provided an appropriate standard of care to Mr A in 2012.*

17. The investigation was extended to include:

- *Whether Ms N provided an appropriate standard of care to Mr A in Month2.*

18. The key parties referred to in the report are:

Mr A	Consumer
Mrs A	Complainant, Mr A's wife
Mr B	Complainant, friend of Mr A
Waikato DHB	Provider
Hospital 1	Provider
ABI Rehabilitation New Zealand Ltd	Provider
Ms C	Acute Rehabilitation Co-ordinator, ABI
Dr D	Consultant surgeon, Hospital 1
Dr E	House officer
Dr F	House officer
RN G	Registered nurse
RN H	Clinical nurse co-ordinator
Dr I	Trauma registrar
RN J	Flight nurse
Dr K	House officer
RN L	Registered nurse, ABI
Mr M	Community pharmacist
Ms N	Nursing Services Manager, ABI
Ms O	Manager, ABI
RN P	Registered nurse, ABI
Dr Q	Rehabilitation physician

Also mentioned in this report:

Mr R	Quality Co-ordinator, ABI
Hospital 2	Public hospital

19. Information from ACC was also reviewed.

20. Independent expert advice was obtained from a trauma surgeon, Dr Li Hsee (**Appendix A**).

Information gathered during investigation

Background

21. On 25 Month1 2012, Mr A, aged 58 years, was involved in an accident. He sustained multiple injuries including facial fractures, lacerations, and damaged teeth. He had a ruptured spleen and liver laceration, chest wall injuries and rib fractures, a pneumothorax,[5] and a degree of concussion.

22. Mr A was admitted to Hospital 1 in a critical condition. He underwent surgery to manage his internal injuries, including a laparotomy, splenectomy, and placement of a chest drain. He was admitted to the Intensive Care Unit (ICU) following surgery, for further management. Investigations did not suggest he had intracranial injuries. Mr A had an extensive pre-existing medical history, which included a high body mass index (BMI), high cholesterol, and hypertension.

ICU

23. In ICU, Mr A was assessed by surgical and allied health teams. He was placed under the care of the Trauma Service. Adjunctive treatment included dietitian support, physiotherapy to assist his respiratory function and mobilisation, occupational therapy, and deep vein thrombosis (DVT)[6] prophylaxis and broad spectrum antibiotics.

DVT prophylaxis

24. Dr D, consultant surgeon, Hospital 1, advised HDC that in relation to the use of DVT prophylaxis in trauma patients, Waikato DHB's approach is to administer this routinely, along with non-pharmacological anti-DVT measures, in line with international best practice.[7]

HDU

25. On 29 Month1 (day 4 post-surgery), Mr A was transferred from ICU to the High Dependency Unit (HDU), with ongoing input from his ICU clinicians. On 30 Month1, he underwent repair of his facial injuries.

26. On 3 Month2, Mr A showed signs of post-traumatic pleural effusion (fluid), which was compromising his respiratory status. On 4 Month2, CT scanning confirmed this, and Mr A underwent drainage of the fluid. Subsequently, Mr A improved. On 8 Month2, Mr A had some swelling of his right metatarsophalangeal (MTP) joint in his foot, thought to be related to gout.

[5] A pneumothorax occurs when air leaks into the space between the lungs and chest wall. The air pushes on the outside of the lung and causes it to collapse.
[6] Deep vein thrombosis occurs when a blood clot (thrombus) forms in one or more of the deep veins in the body, most commonly the legs. The blood clot can break loose, travel through the bloodstream and lodge in the lungs, blocking blood flow (pulmonary embolism).
[7] Dr D also noted that there is some controversy regarding the use of DVT prophylaxis in trauma patients. Patients can develop DVTs despite appropriate prophylaxis, and these can be asymptomatic until a terminal event.

Surgical ward

27. On 9 Month2, Mr A was transferred to a surgical ward and encouraged to mobilise, although his ability to do so was limited by his pain. Waikato DHB clinical records show that Mr A's medications on discharge from ICU included 40mg enoxaparin (Clexane)[8] prophylaxis, once a day. Dr I, a trauma registrar, told HDC that while on the surgical ward Mr A received the daily enoxaparin and wore thromboembolic deterrent (TED) compression stockings as part of DVT prevention.

28. Mr A made good progress with hospital multidisciplinary rehabilitation. Hospital staff considered a transfer to ABI[9] Rehabilitation New Zealand Limited (ABI) for further rehabilitation. ABI offers residential facilities that provide active rehabilitation services for clients who have suffered a moderate to severe head injury. ABI told HDC that it has international accreditation with the Commission on the Accreditation of Rehabilitation Facilities (CARF), and that it complies with New Zealand Health and Disability Services Standard 8134:2008.[10]

29. Waikato DHB clinical records for the period 10–14 Month2 show that DHB staff had initially discussed Mr A being transferred to ABI in another main centre, or two other public hospitals for his rehabilitation, but none of these locations were possible owing to bed unavailability.

30. The facility chosen was eventually suggested because it was also not far from where Mr A resided.

ABI acute rehabilitation co-ordinator

31. When the Waikato DHB Trauma Service discharges a patient to an ABI facility, this is done in conjunction with an ABI acute rehabilitation co-ordinator (ARC) — an employee of ABI who is based at Hospital 1. In this case, the ARC was Ms C. Ms C had been kept updated about Mr A's general progress since his admission. At the time, Ms C had three clients with whom she was involved or monitoring.

32. Ms C described her role as ensuring that "all patients with moderate–severe Traumatic Brain Injury (TBI) in acute care have access to early intensive rehabilitation". Her ARC position description has primary objectives that include providing transition from DHB to residential or community rehabilitation.

33. Ms C told HDC that she was not involved in Mr A's discharge planning early on because he did not appear to fit the criteria for moderate to severe brain injury — he

[8] Clexane is used in a number of medical conditions. It is used to: treat blood clots, treat certain types of heart disease when used with aspirin, prevent blood clots forming after an operation, during hospitalisation or extended bed rest or during haemodialysis. Clexane is one of a group of medicines called low molecular weight heparins. These medicines work by reducing blood clotting activity.
[9] ABI is an abbreviation for Acute Brain Injury.
[10] The Standards are mandatory for those services subject to the Health and Disability Services (Safety) Act 2011.

had had a Glasgow Coma Score (GCS)[11] of 15 at the accident scene and on admission to the emergency department, and his head CT appeared normal.

ABI policy

34. ABI advised HDC that it accepts referrals from three main funding bodies — ACC, DHBs, and private funders. In Mr A's case, he was classed as a Group B ACC referral, as he was from a DHB outside the usual contract area of ABI.

35. ABI advised:

> "Potential new clients are required to meet our medical stability criteria before they are considered suitable to enter our service. It is the responsibility of the referring service to ensure the client meets these criteria prior to transfer to ABI. Potential new clients must also have approval for funding before they are admitted. In this case this approval was obtained from ACC on the afternoon of 14 [Month2]."

Two admission documents

36. ABI's policy document "Admission for Active Rehabilitation — [the facility]" (issued shortly before Mr A's admission)[12] in relation to Group B ACC referrals indicates, in the form of a flow chart, that once a referral is received from a DHB, with relevant clinical information, the referral is discussed "with relevant team members", and then an "initial decision is made" regarding declining or proceeding with the referral.

37. The policy flow chart does not explicitly specify the relevant ABI team member(s) assigned as being responsible for a decision to accept or decline a referral received.

38. The policy document "Admission for Active Rehabilitation — [the facility]" also states:

> "[A doctor should] arrange to review the patient in person within 24 hours of arrival in the facility. If no doctor is available within that timeframe, the admission should be postponed unless agreed to by all parties involved in receiving the client at our facility."[13]

39. However, an additional ABI procedure document headed "Admission to ABI Services [the facility] Ltd", re-implemented earlier in 2012,[14] was also in place in Month2.

[11] The Glasgow Coma Score (GCS) consists of a rating between 3 and 15, 3 being the worst, and 15 the best. The score is composed of three parameters: Best Eye Response (1–4), Best Verbal Response (1–5), Best Motor Response (1–6). A GCS of 13 or higher correlates with a mild brain injury; 9 to 12 is a moderate injury; 8 or less is a severe brain injury.
[12] ABI service delivery document implemented 2012.
[13] ABI policy also includes a right to decline a referral in certain circumstances.
[14] ABI service delivery document implemented June 2010 and again in 2012.

40. That procedure makes no reference to any timeframe in which the patient is to be reviewed by a doctor. The information it contains regarding medical review is limited to:

> "• Prior to admission, the Nurse Team Manager contacts the Doctor to advise them of the planned admission date, and notes this in the diary.
>
> ...
>
> • Doctor completes the medical assessment, initial bloods, infection screen, and physical examination, and charts the prescription."

41. Neither the policy nor the procedure governing admission to ABI make reference to the existence of the other document.

42. ABI advised HDC that the process at the time was that new and updated policy documents were sent to the Managing Director. Once approved, they were sent to a Reception/Administrator, who would then upload them to ABI's intranet. At that time the documents would be produced in hard copy and provided to the managers for distribution. ABI was unable to provide HDC with a copy of its 2012 Documentation of Policies and Procedures policy.[15]

43. ABI also had a "Pre Admission Planning and Handover document" (issued in June 2010 and again in 2012),[16] also in the form of a flow chart, which includes:

> "Latest bloods are sent through [to ABI] for doctor to review and ensure they are medically stable."

Responsibilities

44. The ABI policy document "Admission for Active Rehabilitation — [the facility]" also includes, in relation to assigned responsibilities:

> "… The Nursing Services Manager and Rehabilitation Consultant are responsible for medical stability criteria;
>
> The [Nursing Services Manager] and Rehabilitation Team Manager are responsible for the coordination of admissions."

Waikato DHB policy

45. Waikato DHB's "Admission, Discharge and Transfer Policy"[17] includes the following that is relevant to Mr A's care:

> "3.5 Discharge to another healthcare service/facility

[15] Implemented May 2012.
[16] Document which applies to clients not identified as high risk.
[17] Document 1848. Version 02. Effective 1 March 2010.

- Patients being discharged from Waikato DHB facilities/services to other healthcare facilities/services will meet the admission requirements of that facility.
- Discharge from [Hospital 1] to another healthcare facility will only occur when the discharging medical staff/midwife gain verbal acceptance from the admitting medical team or midwife or Nurse Manager for Aged Related Residential Care Facilities.
- It is the responsibility of the accepting facility/service to ensure that facility/service has the appropriate resources to accept the patient.
- It is the responsibility of the discharging ward to supply the appropriate clinical documentation. In **addition, to the clinical workstation discharge summary,** [emphasis in original] original clinical records and documents pertaining to the latest episode of care may accompany a patient moving to another Waikato DHB facility.

Those records will include:

— A nursing transfer letter
— Any relevant Infection Control requirements
— The patient's comprehensive updated Care Plan
— A newly written medication chart AND any obsolete medication chart/s related to the current admission
— Clinical records relating to current episode of care (or copies of relevant extracts)
— Most current observation chart/Fluid Balance chart etc
— Any relevant investigations results, operation reports, blood results, X-rays not accessible via computer
— ACC/NASC forms generated by current episode of care
— Allied Health team transfer letter/careplans
— Any other documents deemed relevant

- If a patient is discharging to a non-Waikato DHB facility copies only will be supplied of those documents listed above.

- When the patient is clinically cleared for discharge and medically accepted to move to another healthcare facility/service it is expected that discharge will be facilitated within 48 hours …"

Waikato DHB standard practice

46. The Clinical Nurse Co-ordinator, Trauma, Registered Nurse (RN) RN H, told HDC that before a patient is discharged to an ABI facility the standard Waikato DHB practice is as follows:

- The patient is medically fit to transfer.
- The patient has been accepted by the rehabilitation facility and that facility is able to manage the patient's requirements.
- There is funding for the rehabilitation.

- Any social issues are addressed.
- There is an up-to-date discharge summary from the team caring for the patient.
- There is a nursing transfer letter[18] when transferring to a rehabilitation facility.
- Medications charts are faxed to the receiving facility and there is a prescription organised if the patient is discharged on a Friday or a weekend.
- Copies of relevant clinical notes go with the patient in certain cases.
- Instructions on a patient's condition, and on the medication plan, are given to the flight nurse.

47. The above list does not include a medical transfer letter (as distinct from the discharge summary) produced by a doctor. A checklist for trauma patients being transferred by the Trauma Service to a rehabilitation service was not in use by Waikato DHB at the time.

ABI acceptance

48. On 13 and 14 Month2, the ABI Rehabilitation Team Leader and Senior Nurse were not on duty. The ABI Nursing Services Manager, Ms N,[19] was the contact person for ABI.

49. Ms N's position description includes the following primary objectives:

> "…
>
> - To complete preadmission assessments of all clients admitting to the unit.
> - To liaise with DHB and ACC staff to ensure the smooth transition of clients into the service.
>
> …"

50. Neither the position description nor the two ABI documents about admission included explicit responsibility for Ms N to accept admissions.

51. Ms C told HDC that she first spoke to Mrs A about the option of Mr A being transferred to ABI on 13 Month2. Ms C said that initially she told Mrs A:

> "It [the transfer] probably wouldn't happen till the following week as we generally do not admit on a Friday — especially after hours."

52. Mrs A recalled that Waikato DHB staff told her that the public hospital in the region (Hospital 2) was full and did not have a bed.

53. At 11.26am on 13 Month2, Ms C wrote in the ABI electronic record:

[18] This document will be referred to consistently in this report as the "nursing transfer letter" — as distinguishable from the Waikato DHB discharge summary.
[19] Ms N's position description was signed in 2012 as a part of her orientation. Ms N is also a registered nurse. She commenced employment with ABI in 2012.

> "[Mr A] is still requiring supervision and use of frame to mobilise as he is still unsteady on his feet.
>
> I have spoken to his wife and she is happy for me to contact ACC and [ABI] to see if [Mr A] could go there for rehab.
>
> [ABI] confirm that they will have a bed next week and would be happy to accept [Mr A] — even for a short term to help him become safe enough to go home. All [Mr A's] bloods appear to be within normal range. Although there is no imaging evidence that [Mr A] had a head injury — there appears to be no other cause for his confusion and loss of balance."

Medication administered at Hospital 1

54. Medication administration records note that Mr A had been administered enoxaparin 40mg once daily since 6 Month2. The last recorded dose given on the ward was at 4.40pm on 14 Month2.

55. Medication administration records state that Mr A was receiving the following analgesics regularly at the time of his discharge:

- paracetamol 1g four times daily (last dose prior to transfer was 1pm, 14 Month2);
- OxyContin 10mg twice daily (last dose 7.50am, 14 Month2); and
- ibuprofen 400mg twice daily (last dose 4.40pm, 14 Month2).

56. Analgesics being given on a prn[20] basis were:

- tramadol (last dose 100mg at 5pm, 14 Month2. Used three times a day in the 48 hours prior to this);
- OxyNorm (last dose 10mg at 10.05am, 14 Month2, and 10–20mg daily used prior to this); and
- ibuprofen 400mg up to four times daily (last dose 9am, 10 Month2).

Transfer to ABI — key events

57. Waikato DHB stated that on Friday 14 Month2, Mr A was "mobilising unaided but required supervision for safety". It was considered that Mr A was able to be discharged from Hospital 1 and transferred by air to ABI.

58. An ABI Manager, Ms O,[21] told HDC that on 14 Month2, in the absence of the Rehabilitation Team Leader and Senior Nurse, Ms C telephoned her. Ms O said that she advised Ms C to liaise with Ms N to check on the bed status.

59. Ms N told HDC that an aeroplane had become available sooner than anticipated to transfer Mr A, and Ms C contacted her about the transfer.

[20] As required.
[21] Ms O's role is non-clinical.

60. An entry in the Waikato DHB progress notes made by RN H on 14 Month2 states:

> "I have contacted … ACC Case manager … left a message for her to contact me urgently as [Mr A] probably needs [ABI] for Rehab … We need ACC approval to be able to send him there. [Ms C] from ABI will see if there [is a] bed available …

61. Ms N emailed Ms C an ACC referral form for completion.[22]

62. Public hospital staff completed the referral document to ACC for Residential Active Rehabilitation Services. The form[23] was signed by Dr I at Hospital 1, and documents that Mr A's medical status was stable. The rehabilitation provider was listed as ABI.

63. Ms C told HDC that she faxed the completed ACC referral form to Ms N at 10.55am.

64. At 12.03pm, Ms C recorded in the ABI electronic progress record:

> "[Mr A] is medically stable to transfer out of hospital. However, he is still confused at times, confabulates and requires assist x1 for mobilisation for balance … plan is to try to transfer him to ABI today … we are however waiting for Eligibility from ACC. ACC 2087 has been completed and faxed to ACC …"

65. The plan of action listed after this entry was "to transfer to ABI" and "to obtain eligibility from ACC".

66. At 12.31pm, Ms C emailed blood results, Waikato DHB in-hospital drug charts, and a consent form completed by Mr A,[24] to Ms N at ABI. At 12.33pm, Ms C emailed to Ms N a report about Mr A, including the ambulance report, operation notes, and radiology reports.

67. At 12.51pm, Ms C emailed further handover information to Ms N, including that Mr A had a GCS of 15, and that he was requiring regular pain relief. Ms C advised Ms N that ACC approval was still pending.

68. RN H added to her earlier morning entry in the records:

> "Continued — ABI bed available. Plane available. Just awaiting ACC approval [and] [discharge] summary."

69. Physiotherapy notes entered at 2.10pm record: "[Patient] will be transferred to [ABI] this [weekend]. [Patient] has been [mobilising] [with] wife length of ward [with] nil safety concerns."

70. At 2.48pm, Ms C and RN H received an email from ACC attaching approval for funding of rehabilitation at ABI, and, at 2.51pm, Ms C emailed the ACC approval to Ms N.

[22] Ms C provided copies of the emails referred to in this report.
[23] ACC 2087.
[24] His consent to receive ABI rehabilitation services.

71. At 3.08pm, Ms C emailed Ms N asking that she call her, as she wanted to know Ms N's thoughts about the flight crew's advice that it was not going to be able to pick up Mr A until around 6pm, which would mean he would not arrive at ABI until after 8pm.

Communications regarding admission and availability of doctor at ABI

72. Waikato DHB said that it was informed by an ABI representative that a doctor would admit Mr A on arrival. Waikato DHB stated:

> "It was our reasonable expectation that [Mr A's] medication charts would be checked and recharted on appropriate forms for that facility."

73. In response to the provisional report, Dr I stated that he recalled that a doctor (Dr Q)[25] had accepted Mr A's transfer to ABI. He said that the case was discussed over the telephone and that Dr Q accepted care, although Dr I could not recall when this took place. However, in contrast, Dr Q stated that she worked for ABI only on Tuesdays and Wednesdays, and said: "I never received any contact from [Hospital 1] about [Mr A] on that [Friday] or any other day."

74. Ms N told HDC that she had commenced employment six weeks prior to Mr A's transfer, and she was not fully aware of the ABI admission process. She said that she had not previously completed an admission, and the other staff who had previously managed admissions (the Rehabilitation Team Leader and a senior nurse) were not available on 13 and 14 Month2. Ms N advised that she became formally involved in admissions in January 2013.

75. ABI advised HDC that there is no formal written procedure for cover if the delegated staff were not available to co-ordinate an admission, but that common practice would be for the ARC to talk with one of the other managers available at the time.

76. Ms N said she discussed Mr A's case with colleagues, including Ms O, and was advised that she could accept Mr A as long as he was safe to transfer. Ms N stated that it was also suggested that she try to contact a doctor who had worked for ABI previously on an ad hoc basis. Ms N said that messages were left for the doctor that afternoon but, to her knowledge, no call was returned. In response to the provisional report, Ms N stated that she had not been made aware of the policy document regarding admission.

77. Ms O told HDC that the advice she gave Ms N was that because ACC had approved the admission, Mr A was medically stable, and because a bed was available, it was an appropriate and safe admission to ABI. From the information they had received, Ms O considered that there were no misgivings about the appropriateness of the admission.

78. Ms C advised HDC:

[25] Rehabilitation physician.

> "I have no recollections of what was exactly said between myself and Nurse Manager [Ms N] … I know we spoke about a registrar being on call and that they would be available if needed."

79. Ms N stated that ABI did not indicate that upon arrival Mr A would be admitted by a registrar or medical staff. She said that no medical staff were contracted and available until Tuesday 18 Month2. Ms N told HDC that ABI was not certain whether or not Mr A would actually be transferred until very late on Friday 14 Month2.

80. Ms N stated:

> "At no time had I been made aware that anyone at Waikato had been advised that [Mr A] would be met by a registrar. ABI only have a registrar come in to admit a client if they are available, which would only ever be normal business hours."

81. There is no reference to the availability of a doctor, or otherwise, for admission to ABI, in any of the Waikato DHB records, ABI records, or email exchanges between Waikato DHB and ABI staff.

82. Ms N told HDC that she considered that "there was no policy for [ABI] at the time of [the] incident that indicated a timeframe for a client to be seen by a doctor".

83. Ms O also told HDC that she was of the view that ABI did not have an admission policy that specifically stated a timeframe for a medical assessment to be completed.

84. Ms N also stated:

> "I received a phone call from the Nurse caring for [Mr A] at Waikato earlier in the day asking for the name of the admitting doctor. At this stage I advised that we did not have a doctor on site and that medications would need to be provided until our Rehabilitation specialist was able to chart on Tuesday. The nurse advised me that she would organise the medications for transfer. Later she phoned again and advised that the pharmacy were unable to dispense these medications. I advised again that we wouldn't be able to accept [Mr A] without medications due to non-availability of a doctor until Tuesday. She asked if a prescription would be suitable instead. I said yes but that [Mr A's] medications would need to be given before transferring as we would not have access to a community pharmacy at the time [Mr A] would arrive."

85. There is no record of that discussion in the Waikato DHB or ABI documentation.

86. ABI, via its then Quality Co-ordinator, Mr R, advised HDC:

> "At no stage were Waikato DHB staff given the assurance that [Mr A] would be seen by an ABI medical staff member on his arrival at our facility. Nurse Manager, [Ms N] confirms in her feedback that Waikato DHB staff were specifically informed that [Mr A] required three days of discharge medications as our physician would not see him until Tuesday 18 [Month2]."

87. ABI also stated:

> "The Rehabilitation Physician [at ABI] … was due to [see] [Mr A] on Tuesday 18th [Month2]. This was the expected practice in this case as [ABI] is a residential rehabilitation facility and does not have full time medical staff. [The doctor] is contracted to work at [ABI] 16 hours per week. On the week in question the first day she was scheduled to work was Tuesday 18th [Month2]. Waikato DHB staff were informed of this situation by the ABI Nurse Manager prior to transfer."

88. Ms N said that ABI's doctor input from Month1 onwards was two days a week.[26] In addition, another doctor was sometimes available from time to time on a casual ad hoc basis.[27]

89. In relation to her not documenting her telephone discussion with the nurse at Hospital 1, Ms N told HDC: "I did not enter any notes into the Client Management System (CMS) because I had not been trained on how to use the CMS at that time. I was also not aware that a file was opened before a person was admitted." In response to the provisional report, Ms N said that she had started to learn how to use CMS by trial and error. She had worked out how to log in and how to log into a client file, but she could not open a new file. The earliest CMS entry made by Ms N in the ABI records provided was recorded on 18 Month2, once a file had been opened.

90. Review of Ms N's induction programme material provided by ABI shows that three weeks of orientation had been completed, and both admissions and CMS orientation has been ticked off as topics being completed in week one. However, Ms N's record is not signed by Ms N, but is signed by a supervisor, dated 15 January 2013. In response to the provisional report, Ms N said that she did not sign the record as she did not receive the orientation.

Afternoon arrangements for transfer

91. The final arrangements for discharge and transfer were made over a short period of time on the afternoon of Friday 14 Month2, owing to air transport availability and the wait for ACC approval documentation to be received. RN H told HDC that she stayed late to assist with Mr A's transfer.

92. RN H told HDC that she and Dr I had a meeting with Mr and Mrs A and Ms C prior to Mr A's discharge. RN H recalled: "[W]e advised that [Mr A] needed to continue with daily enoxaparin injections. We agreed that we would supply three syringes of enoxaparin for Mr A to take away." These were arranged.[28] RN H recalled that Mrs A was advised of the importance of the pain relief and enoxaparin, and why it should continue. This meeting is not documented.

[26] Supplied by Dr Q, Rehabilitation Physician, on Tuesdays and Wednesdays. Ms N said that prior to this a doctor had attended one day a week, and performed only admissions on that day.
[27] A DHB registrar.
[28] Dr F obtained these from the pharmacy at Hospital 1.

93. Dr I told HDC that he discussed with Mrs A whether she was comfortable to give the enoxaparin to Mr A, or whether she wanted a nurse to do it. He recalls that Mrs A had seen how it was done since it was first charted, and she was happy to do it. Dr I requested some nursing education for Mrs A about giving subcutaneous injections. Mrs A told HDC that she does not recall receiving any education about this. In response to the provisional report, Mrs A said that she would not have agreed to this as she would have struggled with giving anyone an injection. RN H does not recall Dr I's conversation with Mrs A.

94. Mrs A told HDC that she cannot recall the names of the Waikato DHB staff with whom she spoke at the time. She does recall that the enoxaparin syringes and pain relief prescriptions were placed in a bag for her to take, and that was what was emphasised to her. She was aware that this was because ABI would not have access to these medications over the weekend.

95. Mr A was given a dose of enoxaparin at 4.40pm on the Friday afternoon. The air ambulance documentation records that flight crew arrived at Hospital 1 at 4.55pm.

96. Waikato DHB told HDC that a verbal handover meeting occurred at Hospital 1 prior to discharge, involving RN H, RN G (a ward nurse on duty on the surgical ward), and the transfer flight nurse, RN J, and that the three syringe doses of enoxaparin and prescriptions for analgesia were given to Mrs A to give to ABI staff on arrival, for use over the weekend. Ms C was not involved in this meeting. The details of this handover meeting were not documented by Waikato DHB staff in its records. RN J's patient transport record contains no specific reference to being advised of Mr A's thromboprophylaxis regimen, or the transport of three syringes of enoxaparin or prescriptions for analgesia (see paragraph 117). In response to the provisional report, RN H stated that she verbally handed over to the flight nurse regarding Mr A's injuries, and the medications given to Mrs A to take. RN H said that at the time she was not aware that the discharge summary did not state the medications Mr A was on. However, she had seen them on the nursing transfer letter.

97. The air ambulance crew left the hospital at 5.40pm, and the air ambulance departed at 6.05pm.

98. The prescriptions for analgesia, on a hospital prescription form completed by junior house officer Dr F, were to be filled later at their destination. The prescriptions were for three days' supply of each of the following:

- tramadol 100mg orally four times daily;
- paracetamol 1g orally four times daily;
- omeprazole 40mg orally twice daily; and
- ibuprofen 400mg orally twice daily.

99. House officer Dr E[29] filled out the controlled drug prescription for OxyNorm and OxyContin pain relief on the appropriate Ministry of Health controlled drug prescription form.[30] Dosages prescribed were:

- OxyContin 10mg twice daily (60mg to be dispensed); and
- OxyNorm 10mg 1–2 hrly as required (60mg to be dispensed).

100. No prescription for enoxaparin was completed to go with the three syringes accompanying Mr A to ABI.

General Discharge Summary

101. The Waikato DHB General Discharge Summary, which was completed at 4.28pm on 14 Month2 and signed by Dr E, does not refer to discharge medications, or plans for continuing care including the ongoing use of enoxaparin or thromboprophylaxis.

102. The discharge summary notes that Mr A was "still requiring regular pain relief". The summary did not refer to the additional supplementary documentation linked to the summary (ie, the nursing transfer letter as described below).

103. Dr E told HDC that the usual trauma registrar was away on 14 Month2 and, as she was one of Dr D's house officers at the time, Dr I asked her to complete the discharge summary.

104. Dr E stated:

> "I did not re-write the full list of medications into the discharge summary because [Mr A's] drug sheets and a [surgical ward] nursing transfer letter with the medications listed were both being faxed to ABI with the discharge summary. I also knew that we were getting … enoxaparin for [Mr A] to take away with him for the transfer period.
>
> On reflection, I can see that it would have been helpful to make a note on the discharge summary that all discharge medications were detailed on the accompanying drug sheets and nursing transfer letter, or alternatively to include a complete summary of all [Mr A's] medications in the discharge summary as well as in the other documents that were sent through to ABI.
>
> I am sorry for not including the full list of medications in [Mr A's] discharge summary. I now take care to check that all medications are clearly listed in all discharge summaries that I complete."

105. Dr F told HDC:

[29] Dr E was on rotation in the general surgery department. She had gained provisional registration with the Medical Council of New Zealand in the previous month.
[30] Copy provided to HDC.

> "I do not remember the exact details but I do remember helping [Dr E] with some aspects of the discharge. On review of the drug chart it is clear that I dispensed three doses of clexane to be taken with [Mr A] in transit for daily administration. I do know with certainty that I had no part in the typed discharge summary … having reflected on my part in his discharge, I know that it would have been more diligent of me to record in the clinic notes the events around the dispensing of this medication. In my current practice I do take care around the handling and prescription of medications on transfer and discharge. If I prescribe or dispense a medication I am sure to document this clearly in the clinical notes and the discharge summary."

106. No process was in place at the time to check the accuracy of Waikato DHB discharge documentation for transferring trauma service patients.

107. Waikato DHB responded:

> "We accept that the discharge dosage regime for enoxaparin was not included in the ward discharge summary (as all medication information was documented separately, and the discharge summary did not detail [Mr A's] medication requirements) and that this may have caused confusion with administration of enoxaparin at ABI.
>
> We accept that it would be ideal practice for all medications to be listed on the ward discharge summary (in addition to forwarding relevant drug charts and a nursing transfer letter), or for the discharge summary to refer to supplementary documents that contain medication information … we are taking action to change our transfer practice in this regard."

Nursing transfer letter and accompanying medication information

Nursing transfer letter

108. RN G, the registered nurse on duty, completed a nursing transfer document, headed "Transfer Letter [surgical ward] [Hospital 1]" and dated 14 Month2. The document is not signed. The document has designated spaces for patient information to be filled in. All spaces on the form are filled in. The information does not include reference to a history of hypertension.

109. All of Mr A's medications are listed in the section marked "Medications". This includes an entry for enoxaparin 40mg once daily. Columns headed medication, dose and time are all completed, but the "time of dose" last given is not recorded. The three enoxaparin syringes are not referred to in the nursing transfer letter, but are referred to in the accompanying copies of Waikato DHB medication charts (outlined below).

Accompanying medication charts

110. On the "once only" portion of the accompanying copies of Mr A's in-hospital medication charts is an entry dated 14 Month2 noting the 3x40mg pre-loaded syringes of enoxaparin that were dispensed and are noted as "in "transit to [ABI]". The

"regular medicines" portion of the accompanying copies of the medication charts have recorded the previous enoxaparin administered to Mr A, 40mg daily.

111. RN H told HDC that her understanding was that the nursing transfer letter, Mr A's medication charts, and the analgesia prescriptions, were faxed to ABI along with the ward discharge summary, and occupational therapy, physiotherapy, and dietitian records. RN H could not clarify when this occurred. She told HDC: "I was present when [Ms C] faxed the documents (including the current WDHB [in-hospital medication charts]) and talked to the co-ordinator [Ms N] at the ABI facility."

112. However, ABI told HDC that the information it received relating to Mr A's medication regimen did not include a nursing transfer letter.

Faxed transactions

113. In relation to confirming transmission of the documentation faxed to ABI, Waikato DHB responded that it does not keep transaction details for faxes for longer than four months after transmission, so cannot confirm that the transmission occurred.

114. Waikato DHB also told HDC that, according to its senior surgical nurses, the usual practice when faxing information to recipients outside of the organisation is to telephone to ensure that the information has arrived.

Air Ambulance Service

115. Neither Waikato DHB's nor ABI's records make any reference to which air service transported Mr A to ABI, and initially neither organisation could confirm to HDC which service was used.

116. The operations manager of an ambulance service later confirmed to HDC that it had transported Mr A on 14 Month2. A response from the flight nurse on duty, RN J, was facilitated.

117. RN J told HDC:

> "I do not recall any specific instruction relating to [Mr A's] thromboprophylaxis regime or the transport of three syringes of enoxaparin or prescription for analgesia, (usually Clexane would be readily available in any receiving unit and it would seem unusual for a DHB to provide medications for follow on care) but all information for the clinical/rehab plan would be recorded in his notes. As is the norm with any transfer the patient is always accompanied by a full transcript of hospital notes, Medical discharge and nursing discharge as well as a verbal communication from both DHBs (or in this case DHB to rehab unit)."

118. The flight transport summary section of the patient transport record, completed by RN J, states:

> "[Accident] — pneumothorax. Bilat # ribs, fluid chest, [pleural effusion] — ICU — HDU — Ward. Transferring to [another region] for Rehab. IV access. Oxygen

> 6L (chest X-ray cleared for flight) — flying at pressurised cabin at 2000 feet. 1x episode noted of self resolving [hypertension]. Stable journey. Wife in transit too."

119. RN J also said: "My notes would have been submitted to the receiving hospital in addition to the notes from the referring hospital, but with a flight such as this the notes and the verbal handover I received from [Hospital 1] would be the sole basis of my handover and I would not have given any detailed verbal handover based on the uneventful flight merely reiterating the clinical history and plan as dictated by the medical team."

Arrival at ABI

120. The flight log indicates that the air ambulance landed at 7pm on Friday evening, 14 Month2. At 8.15pm, Mr A arrived at ABI via ambulance. RN P entered in the electronic record at 10.38pm:

> "Walked into the unit accompanied by his wife … nursing escort and ambulance driver … Clexane in drug room … [Mrs A] has taken the script from [Hospital 1] and will pick [up] the medications in the morning and deliver to ABI."

121. RN P told HDC that she could not specifically recall Mr A's transfer or the flight nurse escort (the latter was not recorded in the ABI patient management system). However, she told HDC in relation to the usual process adopted by ABI for receipt of a new client:

> "When receiving a client a verbal handover via escort staff is conducted. Observations are taken and recorded. Client and family are orientated around the unit. Should any client be at noticeable risk of impaired mobility or other potential risk they are monitored until assessed by the appropriate therapy. Discharge documentation is checked and read and what medication has been administered prior to transfer. Any medication that is transferred with the client is put into the drug room.
>
> We will give medications as per following discharge script. Before giving any medication the person's medication is checked against the medication script and the discharge report. If any queries we will ring the hospital from where the client was transferred from. The clexane was not on the discharge script or the discharge summary. So clexane was stored in the drug room and not given. Myself seeing this as the final report from the hospital, as being valid. The AM RN the next morning followed this up, and telephoned the hospital and was told the clexane had been discontinued.
>
> New clients are checked every 15–30 minutes on settling. Any concerns are documented."

122. Mr A was not reviewed or admitted by a doctor on arrival, as no doctor was contracted to ABI for that day, and Mr A arrived out of normal business hours.

123. Nursing notes for the overnight shift of 14/15 Month2 include entries made by an RN at 3.17am:

> "New patient appeared to be fast asleep … Needs supervision when he is up and mobilising. On Clexane for 3/7 and these are on top of drug trolley … His wife will take the script to the Chemist and bring in his medication tomorrow. Slept well during the night …"

124. At 5.15am the RN noted that Mr A was mobilising and had used a urinal (which had been placed in his room), observations were taken, he did not require an assistive device to walk, he was orientated, and that "his wife is bringing in his medications today".

125. On the morning of 15 Month2, Mrs A took the original copies of the Waikato DHB prescriptions for pain relief to a community pharmacy. Mrs A recalled that the shopping centre had opened about 9.30am.

126. Pharmacy records and medication labels provided to HDC by Mr M, community pharmacist, show that the medications (OxyNorm, OxyContin, tramadol, ibuprofen, omeprazole, and paracetamol) were dispensed as prescribed by Waikato DHB staff, and were blister packed by the pharmacy.

127. During the day, Mrs A and friends visited Mr A. Rehabilitation programme staff noted that Mr A's left rib was painful and that he requested and received some pain relief.

Enoxaparin query

128. ABI nursing notes entered at 4.21pm on Saturday 15 Month2 by RN L record that Mr and Mrs A enquired why Mr A had not yet been given the enoxaparin at ABI.

129. RN L, noticing that enoxaparin was not charted in the discharge scripts sent through by Waikato DHB, recorded in the notes:

> "Client querying of not receiving injections (enoxaparin 40mg) every morning. Wife asserted as well. Explained to wife the reason … enoxaparin not being charted in his discharge script, due to his increase mobility and not needing it anymore however wife, and client as well, was insistent."

130. RN L then telephoned Hospital 1 for clarification.

131. RN L recorded that he spoke to RN G on the surgical ward, who in turn spoke to the on-call house officer, Dr K.

132. RN L recorded:

> "Phone [the surgical ward] Waikato DHB. Spoke to [RN G]. RN. Clarified with [reference] to enoxaparin use, RN confirmed with … [Dr K] that above

medication no longer needed and wasn't written in the discharge medication script …"

133. RN G told HDC:

> "I recall that I received a phone call from ABI staff where they told me that [Mr A's] enoxaparin dose had been discontinued. I thought it odd it had been stopped due to [Mr A's] risk factors. I recall that I relayed this information to [Dr K], detailing the fact that the enoxaparin had been stopped and that he had been mobilising. I told ABI staff [Dr K] was satisfied with the circumstances. I was satisfied by this response because I trusted [Dr K's] judgement of [Mr A's] situation."

134. Dr K told HDC:

> "I am unable to recall having the phone conversation and I have no records of any such conversation. Neither do I recall having a conversation with [RN G] about this matter. I did not know [Mr A] and was not involved with his care while he was at Hospital 1. It is possible that based on a discussion with the ABI staff member I may have advised that [Mr A's] enoxaparin could be discontinued. As with all requests for advice from health care organisations in the community, I would have made a decision based on the information that was provided to me over the phone. If the ABI staff member told me about [Mr A's] history of multiple traumatic injuries taking into account his mobility level, and did not provide me with further information about the drug charts or discharge instructions from [Hospital 1], then discontinuing enoxaparin may have seemed a reasonable response. My usual practice would be to ask the caller to consult the doctor who is in charge of the institution if he is currently in one which does have a doctor."

Pain relief

135. Progress notes for 15–17 Month2 indicate that Mr A was being encouraged to mobilise, and was continuing to do so, although he complained of pain on occasion.

136. ABI medication administration charts for this period indicate that Mr A was administered paracetamol two to three times daily (rather than four times daily as prescribed), ibuprofen once daily (rather than twice daily as prescribed), OxyNorm once on 16 Month2 and once on 17 Month2, and tramadol twice on 17 Month2. OxyContin was administered twice daily.

137. On 17 Month2, following concerns raised by Mrs A that her husband's pain relief was inadequate, it became evident to ABI nursing staff reviewing the records that Mr A had not been receiving pain relief to the degree intended on discharge from Hospital 1.

138. An incident form was completed by RN L, and the issue was rectified with the appropriate analgesic medication regimen being commenced.

139. Ms N reviewed the incident. Mr and Mrs A were advised what had happened regarding pain relief, and accepted an apology from Ms N. It transpired that multiple ABI nursing staff were under the impression that medications, other than OxyContin, were for prn (as required) use.

140. ABI advised that confusion had arisen for ABI nursing staff in the absence of information on the Waikato DHB discharge documentation regarding Mr A's ongoing medications. ABI staff misread the frequency of administration on the community pharmacy blister packs.

141. Contributing factors to the confusion were identified by ABI as:

- The pain relief prescribed at Hospital 1 had not yet been transcribed on to an actual ABI drug chart (owing to Mr A not being seen by a doctor on admission to ABI).
- The original script for pain relief from Waikato DHB that Mrs A took with her to ABI, once filled at the community pharmacy, was not able to be sighted by nursing staff on duty over the weekend.
- No medications were listed or written in the Waikato DHB discharge summary.

142. Remedial actions listed in the incident report included the following changes:

- Newly admitted client's medication should be charted within 24 hours of arrival in the unit.
- New clients should undergo a thorough handover, including medical status and medications.

143. Physiotherapist notes made at 12.58pm on 17 Month2 show that Mr A's pain relief subsequently improved, and state that Mr A was "feeling better … after receiving more pain meds at the end of the weekend".

Deterioration

144. At around 6.20am on 18 Month2, Mr A complained of feeling unwell with shortness of breath and clamminess. He was given supplemental oxygen and monitored. He developed chest pain shortly afterwards and collapsed suddenly about 6.55am. Sadly, Mr A could not be revived despite immediate commencement of CPR by nursing staff, which was continued for 45 minutes by paramedics.

145. The autopsy report indicated that Mr A's death was due to a pulmonary embolus secondary to a deep vein thrombosis. The summary report does not indicate the likely age of the embolus.

Subsequent events and improvement to practice

Waikato DHB

146. Waikato DHB told HDC that as a result of this case it has taken the following remedial actions:

- Educating staff to ensure that discharge summaries are fully completed and checked prior to discharge of any patient, regardless of the level of medical intervention available in the accepting facility.
- Reviewing criteria for transfer of major trauma patients to facilities with or without guaranteed and immediate medical back-up.
- Reviewing educational material included in Trauma guidelines.
- Ensuring consistency in the tasking of surgical RMOs[31] to cover the Trauma Service roster so that changes of staff are minimised and discharge processes are clear and consistent.
- Reviewing the process of critical information exchange between Hospital 1 and ABI.
- Introducing checks of discharge letters by the responsible medical team or delegate for accuracy of information, including an explanation of current or changed medications.
- Developing a transfer checklist for major trauma patients.

147. Waikato DHB later told HDC:

> "The issue of communication between referring and accepting services was critically reviewed following this case. Aspects that lead to miscommunication were identified and a heightened awareness was placed on surgical ward staff and the RMOs regarding the importance of clear instructions on DVT prophylaxis to patients, caregivers and accepting services. The use of DVT prophylaxis was reviewed by the trauma service and deemed to be appropriate for this patient group. The inherent risks in transferring patients to other facilities, especially after hours and on weekends were highlighted and a general policy of double-checking and mitigating risk was reinforced to RMOs in trauma meetings and general surgical discussions."

ABI

148. ABI told HDC:

- The process for admission to the service was reviewed following this case to include the requirement for new clients to be reviewed by ABI medical staff within 24 hours of admission.[32] ABI later told HDC that the requirement was also reiterated in another policy, the ABI Medicines Policy,[33] which now includes a definition of "medical review" as "all clients are to be reviewed by a Medical Practitioner on or within 24 hours of admission".

[31] Resident Medical Officer (RMO) is a term covering house officers and registrars.
[32] However, it is noted that such a policy was already in place. See paragraphs 36–44.
[33] Document PO225, April 2011, updated April 2013.

- All clients entering ABI also have to be cleared by an ABI doctor before being admitted. The Nursing Services Manager will complete a pre-admission assessment and provide the doctor with relevant documentation.
- The Nursing Services Manager will check availability, funding confirmation, and any special equipment requirements.
- In January 2013, a clear expectation was set out that all clients were to be medically approved by both the discharging and accepting doctors.
- In June 2014, two clinical team nurse leader positions were established, and the nurse leaders work over a seven-day period.
- In November 2014, ABI employed a dedicated Preadmission Coordinator (PAC). The PAC liaises closely with all admitting DHBs, the ABI doctor, clinical nurse leads, and a new Director of Rehabilitation.
- Multidisciplinary "huddle" meetings are held twice a week to discuss all potential admitting clients.
- A rehabilitation physician is now employed full time.
- Individual nursing competency and new graduate programmes have been written and implemented to ensure that new staff have educational and mentoring support.
- Medimap, an electronic medication management programme to manage client medication from the time of prescription to administration, was implemented in its intensive service in November 2014, and was rolled out in residential services in March 2015.

Responses to provisional report

149. Mrs A provided verbal feedback to HDC in response to the "information gathered" section of the provisional report. This has been incorporated into the "information gathered" section of the report where relevant.

150. Waikato DHB and Waikato Trauma Service accepted the provisional report's findings. Waikato DHB advised HDC that its work is currently focussed on enhancing its discharge process and documentation to ensure that transfer of care and associated responsibilities are clear.

151. Dr E had no further comment to make in response to the provisional report.

152. Dr I's comments have been incorporated into the "information gathered" section of the report where relevant. He also later commented that Mr A's care had been a valuable lesson for all staff regarding clear communication and documentation.

153. Dr K advised that he had no further comments on the provisional report.

154. In response to the provisional report, RN H stated:

> "On reflection, transferring [Mr A] to ABI late on a Friday is not best practice and it is something we do not usually do and have not done since this event. [Mr and

> Mrs A] were looking forward to going [back to] family and friends and it would be less strain on their resources. I am very sorry that [Mr A] passed away and I would like to apologise to [Mrs A] for her distress and loss."

155. RN H provided a copy of a transfer checklist for patients being discharged to an ABI facility that has now been developed.

156. RN G advised that he had no further comments in response to the provisional report.

157. In response to the provisional report, ABI stated: "[I]t would appear that ABI did not review the Admission to ABI Services [procedure] when the policy was implemented. This may have resulted in the lack of clarity for staff."

158. Ms N's comments in response to the provisional report have been incorporated into the "information gathered" section of the report where relevant.

Opinion

Preliminary comment

159. I have carefully considered the standard of care provided to Mr A by a number of providers across the different organisations. It is not my role to make findings as to cause of death. Accordingly, the findings in this report should not be interpreted as having any implication as to the cause of Mr A's death.

160. I have no doubt that Waikato DHB and ABI staff had Mr A's best interests in mind when considering transferring him closer to home to rehabilitate. However, having undergone a significant trauma, Mr A's transfer from Hospital 1 to ABI, via air ambulance, demanded co-operation and effective communication between all staff to ensure clarity and seamless co-ordination and continuity of services. That did not occur in Mr A's case, and he did not continue to receive enoxaparin at ABI as a result.

161. As I have stated previously, it is essential that healthcare teams consistently communicate well with one another, and that clear communication is accompanied by accurate documentation. Clear communication and accurate documentation form two of the layers of protection that operate to deliver seamless care. When any one or more of those layers do not operate optimally, there is potential for the patient to be harmed.[34]

162. This case is a salutary reminder of the importance of clear and accurate communication and documentation. There were a number of examples of poor communication and deficient documentation, particularly by a number of more junior staff — issues characterising Mr A's substandard transfer — for which Waikato DHB particularly must bear responsibility.

[34] See also Opinions 09HDC01883 and 10HDC00805.

163. I am mindful of a comment made by my expert advisor, consultant trauma and acute care surgeon Dr Li Hsee:

> "In my opinion, the communication had been inadequate in regards to the final arrangements of [Mr A's] transfer to the ABI unit. There is a departure from the standard of care and accepted practice in terms of the communication between the DHB and ABI staff. There were different expectations at the two institutions …"

Opinion: Waikato District Health Board

164. Dr Li Hsee's independent expert advice was provided in relation to the standard of care Mr A received, including the appropriateness of the systems in place during the transfer of Mr A from Hospital 1 to ABI.

DVT prevention regimen

165. In relation to the thromboprophylaxis regimen adopted by Waikato DHB for Mr A, Dr Hsee advised:

> "In my opinion, the combination of 40mg of enoxaparin prophylaxis once a day (given normal renal clearance), TED stocking and early mobilisation as able was appropriate for [Mr A]. This is an acceptable practice and there is no deviation from the standard in this setting."

166. I accept Dr Hsee's advice and am satisfied that the clinical DVT prevention aspect of Mr A's care put in place by Waikato DHB was appropriate in the circumstances.

Continuity of care

167. In my view, Mr A's co-ordination and continuity of care was compromised for the following key reasons: the transfer was not performed in accordance with Waikato DHB policy; transfer documentation did not contain all the relevant and important clinical information; Waikato DHB did not ensure that there were clear written instructions passed on to ABI about the enoxaparin regimen; and Mr A was transferred late on a Friday. I examine these issues below.

Policy

168. The Waikato DHB policy regarding discharge to another facility states:

> "Discharge from [Hospital 1] to another healthcare facility will *only* [emphasis added] occur when the discharging medical staff/midwife gain verbal acceptance from the admitting medical team or midwife or Nurse Manager for Aged Related Residential Care Facilities."

169. The Waikato DHB Trauma Service team did not gain a verbal acceptance from an ABI clinician. In addition, I note that the standard practice at Waikato DHB, as advised by RN H, did not include obtaining such verbal acceptance. Dr Hsee advised

that "the standard of practice is that the patient's overall clinical condition should have been discussed and reviewed by an ABI responsible medical clinician and accepted for transfer".

170. I am very concerned that Waikato DHB staff did not follow the DHB's discharge policy, and that its standard practice did not align with that policy.

171. In my view, the Waikato DHB discharge policy also lacks clarity, and would have benefitted from specific reference to what should take place in the context of a Trauma Service patient transfer, particularly as such transfers often involve an array of different hospital staff. The Waikato DHB policy does not explicitly assign responsibility to a particular Trauma Service team member for authorising the transfer of a patient.

172. In addition, the standard Waikato DHB practice and policy did not include that a medical transfer letter from a doctor should accompany the patient. I agree with Dr Hsee's advice that "there should have been a medical transfer letter to go with the patient or it should have been faxed to the ABI prior to the patient's arrival".

Transfer documentation

173. The Waikato DHB discharge summary signed by Dr E on 14 Month2 did not detail all of Mr A's medications at discharge. I acknowledge that Dr E was aware that supplementary information existed, in the form of a nursing transfer letter, which was to be faxed separately, and which listed Mr A's ongoing medications (including enoxaparin 40mg once daily). However, the discharge summary did not refer to the existence of that supplementary information.

174. In addition, the discharge summary did not give any description of the enoxaparin to be given at the weekend. Documentation regarding this was limited to the accompanying copies of Mr A's DHB in-hospital medication charts, with the entry noting the 3x40mg pre-loaded syringes of enoxaparin that were dispensed and noted as "in transit to [ABI]".

175. Dr Hsee advised:

> "The medical discharge summary … was incomplete and lacked appropriate clinical information for the safe transfer of the patient … there was no discharge medication entered and no discharge plan. While I do appreciate that most of the medications list provided was faxed separately, it is important to have all sections of medical discharge summaries completed."

176. I agree, and am concerned that important clinical information was omitted from the discharge summary by Dr E.

177. The unsigned nursing transfer letter, completed by RN G, was also not as fulsome as it should have been. While it did list Mr A's ongoing medications (including enoxaparin), I am critical that the letter did not specifically emphasise thromboprophylaxis as part of the ongoing care plan, and it did not indicate that three

syringes of enoxaparin were travelling with the patient, or provide handover information about instructions given to Mrs A about what to do with the syringes.

178. I note that there was also no DHB oversight process in place at the time for checking the accuracy of discharge information of patients transferring from the Trauma Service.

179. As I have stated previously, "The importance of good record keeping cannot be overstated. It is the primary tool for continuity of care and it is a tool for managing patients."[35] If this does not occur it creates potential risk, particularly in the hospital setting where multiple staff are involved in a patient's care.[36]

Unclear instructions

180. RN H and Dr I told HDC that they had a meeting with Mr and Mrs A and Ms C just prior to Mr A's transfer on 14 Month2.

181. RN H said that Mrs A was advised that Mr A needed to continue with daily enoxaparin, three syringes of enoxaparin were supplied to take to ABI, and Mrs A was advised of the importance of the enoxaparin and analgesia. Dr I told HDC that he discussed with Mrs A whether she was comfortable to give the enoxaparin to Mr A. Dr I said that he requested nursing education be provided to Mrs A about subcutaneous injections.

182. However, Mrs A does not recall receiving any education about administering the enoxaparin. Mrs A recalls that the enoxaparin syringes and pain relief prescription were placed in a bag for transfer.

183. Flight nurse RN J made a contemporaneous record. His patient transfer records primarily detail Mr A's Hospital 1 clinical status. There is no reference to RN J having been given any instructive information by Waikato DHB staff regarding Mr A's thromboprophylaxis regimen or the transport of three syringes of enoxaparin and prescriptions for analgesia. RN J said that his notes and the verbal handover he received from Hospital 1 would have been the basis of his subsequent handover to ABI.

184. I am critical that information concerning the thromboprophylaxis regimen was primarily left with Mrs A to impart to ABI, and was not documented appropriately in the transfer documentation or effectively communicated to the air ambulance team.

Late transfer

185. Mr A left Hospital 1 at 5.40pm on Friday 14 Month2, and arrived at ABI at 8.15pm. In relation to the timing of a trauma patient transfer late on a Friday, Dr Hsee advised:

> "[Mr A] certainly was a complex trauma patient. The standard of practice is such that patients should not be transferred during the late afternoon, in particular on a Friday afternoon when there are no medical staff to receive the patient and

[35] See opinion 10HDC00610, available at www.hdc.org.nz.
[36] See opinion 10HDC01344 (20 June 2013), available at www.hdc.org.nz.

> examine the patient at the receiving facility. This would be different if the patient were to be transferred to an acute hospital where there was 24/7 medical staff available to admit the patient and chart the patient's medication … In my opinion, the transfer of [Mr A] was inappropriate and deviated from the standard of practice."

186. I agree with Dr Hsee. While Mr A was clinically stable and ACC had given authority for his rehabilitation funding, the lack of any ABI doctor involvement in the transfer should have been a clear flag to alert Waikato DHB staff to think critically about the situation and reconsider the transfer of Mr A late on a Friday.

Conclusion

187. In my view, for the reasons outlined above, Mr A's right to co-ordination and continuity of care was compromised by Waikato DHB. Therefore, Waikato DHB did not ensure adequate quality and continuity of services for Mr A and, accordingly, breached Right 4(5) of the Code.

Other comment

188. I have some concerns about other aspects of Waikato DHB's care that warrant comment.

Nursing transfer letter

189. Based on the information received during the course of this investigation, there is evidence (the ABI file and ABI staff's contemporaneous references to documents they had viewed) that supports ABI having received from Waikato DHB copies of Mr A's:

- DHB discharge summary signed by Dr E;
- DHB in-hospital medication charts;
- rehabilitation consent form;
- surgical and radiology reports; blood results; ambulance report; and ACC documentation; and
- prescriptions completed by DHB staff for pain relief (the originals having been given to Mrs A).

190. ABI advised HDC that there was no nursing transfer letter among the documents sent to ABI by Waikato DHB. The ABI clinical records submitted to HDC do not contain a copy of the nursing transfer letter, or any references to that document in entries made in the ABI clinical record.

191. Waikato DHB no longer has transmission records to confirm that the nursing transfer letter was faxed to ABI.

192. It is concerning that the nursing transfer letter, which contained important clinical information, does not appear to have been received by ABI.

ABI doctor involvement

193. In reviewing Hospital 1's transfer of Mr A to ABI, I have considered Waikato DHB's statement to HDC that its staff were advised that Mr A would be assessed by an admitting ABI doctor and would have his medications reviewed and re-charted. However, the evidence, including the actions of some Waikato DHB staff, suggests otherwise.

194. In response to the provisional report, Dr I stated that he recalled that he had discussed Mr A's transfer with Dr Q over the telephone, although he could not recall when this took place. However, in contrast, Dr Q stated that she worked for ABI only on Tuesdays and Wednesdays (which was confirmed by ABI), and that she "never received any contact from [Hospital 1] about [Mr A] on that Friday [14th] or any other day". In the circumstances, I am unable to reconcile these conflicting accounts.

195. Ms C's recollection is that in her discussion with ABI Nursing Services Manager Ms N she was advised that a "registrar was on-call at ABI and would be available where needed" as opposed to at admission. One of the two ABI admission policy documents in place stated that an ABI doctor should arrange to review the patient in person within 24 hours of arrival in the facility.

196. ABI's response to HDC states that ABI did not at any time indicate to Waikato DHB that upon arrival Mr A would be admitted by a registrar or medical staff. No medical doctor was contracted and available to ABI until Tuesday 18 Month2.

197. In my view, if Waikato DHB staff were of the view that Mr A was to be assessed by an admitting doctor and was to have his medications reviewed and re-charted on admission to ABI, this does not explain why Mr A was subsequently transferred later on the Friday accompanied by three syringes of enoxaparin and prescriptions for analgesia, with Mrs A having been given instructions about enoxaparin use. The fact that specifically three syringes and three days' pain relief were supplied indicates that, in all likelihood, these were for the Saturday, Sunday, and Monday — meaning that some Waikato DHB staff had anticipated that there would be no ABI doctor available until the Tuesday.

198. In addition, Ms N also stated that on the Friday she had a telephone discussion with an unidentified Waikato DHB nurse, who asked her for the name of the admitting doctor, and that she advised the nurse that ABI did not have a doctor on site, and that medications would need to be provided by Hospital 1 until a doctor was able to chart them when available on the Tuesday.

199. I am also concerned about the absence of any contemporaneous documentation to elucidate the nature of discussion about the availability of a doctor at ABI on 14 Month2. In my view, such an important matter should have been clearly understood by both teams and recorded in the clinical notes.

ABI staff query to Hospital 1, 15 Month2

200. The effect of the poor instructions and documentation by Waikato DHB staff identified above was evident when, the day after Mr A was transferred, Mr and Mrs A enquired of ABI staff why Mr A had not been given enoxaparin.

201. RN L, noticing that enoxaparin was not included in the discharge prescriptions sent through by Hospital 1 staff, and in the absence of an ABI clinician, made a record of Mr and Mrs A's query and then telephoned Hospital 1 for clarification. RN L spoke to RN G on the surgical ward, who spoke to on-call house officer Dr K.

202. Dr K's advice (documented by ABI nurse RN L) that enoxaparin was no longer needed was in conflict with the apparent instructions given to Mrs A by the medical staff prior to Mr A's transfer to ABI.

203. Dr K was unable to recall the telephone conversation or any discussion with RN G, but acknowledged that he may have given that advice. I note that Dr K also told HDC: "My usual practice would be to ask the caller to consult the doctor who is in charge of the institution if he is currently in one which does have a doctor."

204. Dr Hsee advised me that Dr K had never met Mr A, and was not involved in Mr A's care at Waikato DHB, and should not have been asked to give an opinion on whether enoxaparin should be discontinued.

205. I agree with Dr Hsee, and consider that if the transfer documentation from Waikato DHB had set out Mr A's medication and thromboprophylaxis regimen, then Dr K's involvement may have been avoided.

Opinion: ABI Rehabilitation New Zealand Ltd

206. ABI told HDC that the unavailability of a doctor on 14 Month2 was because ABI is a sub-acute community residential rehabilitation facility (not an acute service) and does not have full-time medical staff. The usual doctor was contracted to work at ABI for 16 hours per week. On the week in question, the first day the doctor was scheduled to work was Tuesday 18 Month2.

207. Health and Disability Services Standard NZS 8134.1.2.2008 states the following:

"Service provider availability

Standard 2.8 Consumers receive timely, appropriate, and safe service from suitably qualified/skilled and/or experienced service providers.

Criterion The criterion required to achieve this outcome shall include the organisation ensuring:

> 2.8.1 There is a clearly documented and implemented process which determines service provider levels and skill mixes in order to provide safe service delivery."

208. I note that there were two co-existing ABI admission documents (one a policy and one a procedure) in place in Month2, neither acknowledging the existence of the other, and each providing a different process regarding medical review: one stating that a doctor should review the patient within 24 hours of admission, and one making no reference to a timeframe for medical review after admission.

209. I am concerned that ABI staff were under the incorrect impression that there was no ABI policy in place stipulating that a new admission should be medically reviewed within 24 hours.

210. ABI was unable to provide HDC with a copy of its 2012 Documentation of Policies and Procedures policy or fully explain why some staff were not aware of the relevant policy at the time of Mr A's admission, other than outlining to HDC the usual process adopted at the time. In response to the provisional report, ABI acknowledged that "it would appear that ABI did not review the Admission to ABI Services [procedure] when the policy was implemented. This may have resulted in the lack of clarity for staff."

211. I also note that the "Admission for Active Rehabilitation — [the facility]" policy states that once a referral is received from a DHB, with relevant clinical information, the referral is discussed "with relevant team members", and then an "initial decision is made" regarding declining or proceeding with the referral.

212. In my view, the ABI policy wording on this point lacks sufficient clarity and does not explicitly specify the "relevant team members" assigned responsibility for accepting or declining a referral. I note that there was also no evidence of an ABI policy or procedure in place for organising cover or delegating responsibilities for co-ordinating admissions.

213. In my view, it was the responsibility of ABI to have adequate oversight and systems in place to support its staff and ensure its policies were clear and understood by all staff. Having two policies regarding admission, one of which used vague language, and ineffectively communicating policy information to staff, resulted in a very unclear direction from ABI to its staff about the requirements for admission and the timing of medical review.

214. As Dr Hsee advised, it is unreasonable for a trauma patient to wait more than 72 hours to be assessed for admission by medical staff in a new facility. In my view, this was a wholly unacceptable situation.

215. Accordingly, in my opinion, ABI Rehabilitation New Zealand Limited failed to provide services to Mr A with reasonable care and skill and breached Right 4(1) of the Code.

Pain relief — adverse comment

216. On the evening of Friday 14 Month2, at 8.15pm, Mr A arrived at ABI. The discharge documentation was checked and read by RN P. Flight nurse RN J told HDC that his notes and the verbal handover he received from Hospital 1 would have been the basis of his handover to ABI.

217. On the morning of 15 Month2, Mrs A took Hospital 1 prescriptions for pain relief, given to her by Waikato DHB, to the community pharmacy to be filled. Pharmacy records and medication labels provided to HDC show that the medications were dispensed as prescribed by Hospital 1 staff, and were blister packed by the pharmacy. ABI medication administration charts for the period 15–17 Month2 indicate that Mr A was administered paracetamol two to three times daily (rather than four times daily as prescribed), ibuprofen once daily (rather than twice daily as prescribed), OxyNorm once on 16 Month2 and once on 17 Month2, and tramadol twice on 17 Month2. OxyContin was correctly administered twice daily.

218. On 17 Month2, following concerns raised by Mrs A that her husband's pain relief was inadequate, it became evident to ABI staff on review that Mr A had not been receiving pain relief to the degree intended on discharge from Hospital 1.

219. RN L completed an incident form, and the issue was rectified. The appropriate analgesic medication regimen was commenced. Ms N reviewed the matter. Mr and Mrs A were advised of what had happened and accepted an apology from Ms N. Multiple ABI staff had been under the impression that medications, other than OxyContin, were for as required (prn) use.

220. Confusion had arisen for ABI nursing staff in the absence of information on the Waikato discharge documentation regarding Mr A's ongoing medications. The frequency on the community pharmacy blister pack labels was misread by nursing staff. By 12.58pm on 17 Month2, Mr A's pain relief had subsequently improved, and Mr A reported feeling better.

221. Any criticism I have of ABI staff in relation to the inadequate pain relief given is tempered in the knowledge that staff were hampered by the earlier and existing deficiencies — namely:

- The Hospital 1 discharge summary did not list Mr A's medications.
- The Hospital 1 nursing transfer letter (which listed the medications) does not appear to have been received by ABI.
- The pain relief prescribed at Hospital 1 had not yet been re-charted and transcribed on to an ABI drug chart (owing to Mr A not being reviewed by a doctor on admission).

Opinion: Ms N — No breach

222. The position description for Ms N's Nursing Services Manager role includes completing preadmission assessments of all clients admitted to ABI, and liaising with DHB and ACC staff to ensure the "smooth transition" of clients to the service.

223. Neither the position description nor the two ABI policies about admission included a responsibility for Ms N to accept admissions.

224. Ms N told HDC that she began her employment with ABI six weeks prior to Mr A's transfer. ABI is a sub-acute rehabilitation facility. Ms N said that she was not fully aware of the ABI admission process, and that other ABI staff who had previously managed admissions were unavailable to assist her on 13 and 14 Month2. I accept that Ms N was not made aware of the policy document and was under the impression that there was no policy requiring a medical review within 24 hours of admission.

225. Ms N's induction programme documentation records that three weeks of orientation had been completed, and admissions and CMS orientation have been ticked as topics completed in week one of the orientation;[37] however, I note that Ms N said that she was not fully orientated and her record was not signed by Ms N herself.

226. Ms N also said that she was advised by colleagues that she could accept Mr A as long as he was safe to transfer. Mr A had earlier been deemed stable by Waikato DHB. On the afternoon of 14 Month2, Ms N tried to contact a doctor but was unsuccessful. At 3.08pm on 14 Month2, Ms N was made aware that the flight crew could not pick up Mr A until around 6pm, which is out of usual business hours.

227. Ms N discussed Mr A with colleagues and it is evident from her efforts to contact and secure a doctor at short notice that Ms N had turned her mind to the issue of obtaining medical review. At that point, given her clinical knowledge, I consider that Ms N could still have thought more critically about Mr A's admission.

228. There is no documented reference to any discussions about the availability of an ABI doctor in any of the Waikato DHB records, ABI records, or email exchanges between ABI staff regarding Mr A being transferred. Ms N told HDC that she did not enter any notes into the Client Management System (CMS) because she had not been fully trained in how to use it at that time, and she could not open a new file. I note that it was open to Ms N to make a record in another format.

229. I acknowledge that Ms N was reasonably new to her clinical role, other clinical staff were unavailable to her on 14 Month2, and that a lack of organisational clarity existed in relation to the responsibility for a decision to accept a client admission and when a medical review should occur. In the circumstances, I find that Ms N did not breach the Code.

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[37] Ms N's full orientation record is signed by a supervisor approximately 11 weeks after she commenced employment.

Recommendations

Waikato DHB

230. I recommend that Waikato DHB provide a formal written apology to Mrs A for its breach of the Code. The apology is to be sent to HDC within three weeks of the date of this report, for forwarding to Mrs A.

231. I recommend that Waikato DHB, within three months of the date of this report:

a) Complete a random audit of Trauma Service discharge summaries for compliance with completion, accuracy, and the responsible medical team checking procedures instigated (regardless of the level of medical intervention available in the accepting facility).

b) Report to HDC on the outcome of Waikato DHB's internal review of: criteria for transfer of major trauma patients to facilities (including distant rehabilitation) with or without guaranteed and immediate medical back-up; policies for transfers occurring on Friday afternoons; and the process of critical information exchange between Hospital 1 and ABI. The review should outline changes made to policy wording to ensure clarity about assigned responsibilities.

c) Report to HDC on the tasking of surgical RMOs to cover the Trauma Service roster so that changes of staff are minimised and discharge processes are clear and consistent.

d) Report on the effectiveness of the newly introduced transfer checklist for major trauma patients.

ABI Rehabilitation New Zealand Limited

232. I recommend that ABI Rehabilitation New Zealand Limited provide a formal written apology to Mrs A for its breach of the Code. The apology is to be sent to HDC within three weeks of the date of this report, for forwarding to Mrs A.

233. I recommend that ABI Rehabilitation New Zealand Limited, within three months of the date of this report being issued:

a) Report on the review undertaken regarding the process for admission to the service, and include an audit of the last 12 months of the requirement for new admissions to have been approved by the discharging service, cleared by an ABI doctor before being admitted, and reviewed by ABI medical staff within 24 hours of admission. The review should also clearly outline changes made to policy wording to ensure clarity about assigned roles and responsibilities for decision-making, with copies to this Office.

b) Provide HDC with evidence of a robust process for the effective organisation-wide communication and circulation to staff of any updates or changes to policy, or the implementation of new policy.

c) Provide a qualitative report on the effectiveness of the Clinical Team Nurse Leader and Preadmission Co-ordinator positions.

d) Provide an update on the implementation of Medimap, the electronic medication management programme to manage client medication from the time of prescription to administration.

e) Undertake an independent nursing peer review of the quality of ABI nursing staff objective pain assessment and evaluation, and documentation thereof, for a random selection of patients cared for in the last six months.

Follow-up actions

234. A copy of this report will be provided to the Coroner.

235. A copy of this report with details identifying the parties removed, except Waikato DHB and ABI Rehabilitation New Zealand Limited and the expert who advised on this case, will be sent to the Australia and New Zealand Association for the Surgery of Trauma (ANZAST), the College of Nurses Aotearoa Inc, DHB Shared Services, Central Technical Advisory Service (TAS), and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent trauma surgeon's advice to the Commissioner

The following expert advice was obtained from a consultant trauma and acute care surgeon, Dr Li Hsee:

> "Thank you for your invitation to provide an expert opinion regarding the care of [Mr A] at Waikato DHB and his subsequent transfer to [ABI] for rehabilitation due to the multi-system injuries sustained in 2012.
>
> My name is Dr Li Hsee. I am a full-time consultant trauma and acute care surgeon employed at Auckland City Hospital in Auckland. I am a vocationally registered medical practitioner/surgeon specialist with the New Zealand Medical Council. Presently, I am the Co-Director of the Trauma Service and the head of the Acute Surgical Unit at Auckland City Hospital. My qualifications include: Fellowship of the Royal Australasian College of Surgeons and the American College of Surgeons. I am the current Chairman of the New Zealand Trauma Committee of the Royal Australasian College of Surgeons. My clinical experience includes trauma surgery fellowship at Auckland City Hospital and at Sunnybrook Health and Sciences Centre (Level 1, Trauma Centre) in Toronto, Canada. I have no conflict of interest to declare.
>
> I have read and understood the guidelines for advisors that were sent to me from the office of The Health and Disability Commissioner. In accordance with your instructions, I have been asked to review the documentation provided to me and respond to the following questions regarding the professional standards and guidelines of both [Hospital 1] and ABI Rehabilitation regarding the care of [Mr A]. The documentation that I have reviewed includes:
>
> a) Complaint material
> b) Initial response from Waikato DHB dated 7th March 2013 including DHB report to the Coroner and DHB clinical records
> c) Initial response from ABI Rehabilitation dated 4th February 2013 including cover letter transferring information, ABI Clinical Records, Morbidity references, incident forms and
> d) Response to notification of investigation from ABI rehabilitation dated 3rd July 2013 including:
> i) ABI response to Coroner dated 4th February and ABI clinical record
> ii) Statement from [ABI] Service Manager, Ms N
> iii) Transfer email 14th [Month2]
> iv) Statement from [Ms C], Waikato/ABI Acute Rehabilitation Co-Ordinator
> v) Prescription dated 14th [Month2]
> vi) ABI Incident forms
> vii) ABI Policies (5)
> e) Response to notification of investigation from Waikato DHB dated 18th July 2013 including:
> i) Response from [Dr D], consultant surgeon [Hospital 1]
> ii) Response from [Dr K], House Officer
> iii) Response from [Dr E], House Officer

iv) Response from [RN G]
v) Response from [the] Clinical Nurse Co-Ordinator
vi) Transfer letter from [the surgical ward at Hospital 1] 14th [Month2]
vii) Waikato DHB policy (7) and Orientation Booklet

f) Further information provided by Waikato DHB dated 10th April 2014 including :
   i) Statement from [Dr I], Trauma Registrar
   ii) Further transfer documentation
g) Further information provided by ABI Rehabilitation (undated) including:
   i) Further statement from [Ms C] and ABI Records.

My instructions were to respond to the following specific questions:

1 Provide my comments on clinical appropriateness and adequacy of thrombo-prophylaxis methods/regime adopted at [Hospital 1] in [Mr A's] care given his skeletal trauma
2 The standard of clinical discharge documentation/Letter from Waikato DHB
3 The standard and adequacy of Waikato DHB discharge planning particularly in relation to medication management and documentation of thrombo-prophylaxis issues and the use of Enoxaparin.
4 The appropriateness of DHB policy and procedure in place
5 Overall standard of communication between Waikato DHB staff and ABI staff
6 The standard of handover information between the transit staff and the ABI staff
7 The influence of the transfer of [Mr A] occurring late on a Friday
8 The standard of assessment of [Mr A] on arrival at ABI
9 The seniority of staff and the timing of the initial review/assessment of [Mr A] at ABI
10 The adequacy of pain relief and administration at ABI
11 The standard of ABI medication chart documentation

In addition I was asked to provide advice on:

a) What is the standard of care and accepted practice
b) If there was any departure from the standard of care or accepted practice and how significant a departure do you consider that it is
c) How would it be reviewed by my peers and;
d) The appropriateness of remedial action taken as a result of this event and;
e) Whether there is any aspect or standard of care provided by Waikato DHB staff or ABI staff that I may consider warrants additional comment.

Case Summary:

[Mr A] was a 58 year-old man who was involved in [an accident]. [Mr A] was brought to [Hospital 1] in a critical condition where his initial assessment revealed blood in his abdomen. He was taken to the operating room for laparotomy, splenectomy and placement of a chest drain. Maxillo-facial surgeons were involved to repair his lip lacerations and extract his damaged teeth. His list of

injuries included: ruptured spleen, laceration of the liver, sternal fracture, bilateral haemo-pneumothorax, multiple rib fractures with a right sided flail segment, multiple facial fractures, and lacerations of the lip and teeth. [Mr A] had life threatening injuries and required an admission to the intensive care unit (ICU) for further management. It was noted that [Mr A] had a significant pre-existing medical history including hypertension, hypercholesterolaemia and a high body mass index (BMI). On 29th [Month1], [Mr A] was stepped down from ICU and was transferred to HDU with ongoing input from his intensivists. On 30th [Month1], [Mr A] underwent repair of facial injuries. On the 3rd of [Month2] [Mr A] developed Type I respiratory failure due to a large pleural effusion. This was managed with a chest drain. Subsequently, [Mr A's] respiratory dysfunction improved. The clinical team noted that on 8th [Month2] [Mr A] had swelling in his right MTP joint of the foot. This was thought to be gout. The following day, [Mr A] was transferred to the ward and encouraged to mobilise but this was limited by pain. During late Friday afternoon on the 14th [Month2] [Mr A] was transferred by air to [ABI] rehabilitation unit for convalescence. While at [ABI], on 18th [Month2] at approximately 6.20 am [Mr A] complained of feeling unwell with shortness of breath and clamminess. He was given oxygen supplementation and monitored while the nurses sought advice from the Duty Manager. [Mr A] developed severe chest pain shortly afterwards and collapsed at about 6.55 am. Unfortunately, [Mr A] was unable to be revived despite the efforts of CPR for 45 minutes by the nursing and paramedic staff. The preliminary autopsy report showed that [Mr A's] death was due to pulmonary embolism, secondary to deep vein thrombosis.

1. **Please provide your comments on the clinical appropriateness and adequacy of thrombo-prophylaxis methods/regime adopted at [Hospital 1] in [Mr A's] case given his skeletal trauma.**

   Following a review of the clinical notes supplied to me by the HDC office it is appropriate to comment that [Mr A] suffered from a major traumatic injury due to his [accident]. [Mr A's] clinical condition was critical at the time of admission and the Waikato trauma team and subsequent ICU support instituted life saving measures appropriately. The risks of bleeding in the early phase of treatment must be carefully monitored and take into account thrombo-prophylaxis at the earliest opportunity when the bleeding issues had been controlled. It is well known that patients such as [Mr A] who sustain multiple injuries with pre-existing medical conditions will have a much higher risk of DVT and PE. Unfortunately there was no daily ICU medication chart and most of the Waikato DHB drug charts were not supplied for review. It was not clear as to when [Mr A] was commenced on Enoxaparin in ICU. However, I have sighted the ICU discharge summary where [Mr A] was discharged on 40 mg once per day of Enoxaparin to the ward. In [Dr I's] report (Document F, I) that [Mr A] on the ward had been receiving daily Enoxaparin and Thromboembolic Deterrent (TED) stockings for prevention of a DVT. In my opinion, the combination of 40 mg of Enoxaparin prophylaxis once a day (given normal renal clearance), TED stocking and early mobilization as able was appropriate

for [Mr A]. This is an acceptable practice and there was no deviation from the standard in this setting.

On the 8th of [Month2], [Mr A] was noted to have a swollen right foot. The clinical team postulated that this was due to gout. [Mr A] had no known history of gout in the past. There were no subsequent clinical entries regarding the management of swelling in the foot. It was not clear how this was treated and whether [Mr A] had calf swelling or tenderness at that time.

2. The standard of clinical discharge documentation from Waikato DHB?

I have had a chance to review the nursing [transfer] letter dated 14th [Month2], which was made available from [Hospital 1] to ABI. This was a handwritten note. The letter was available (Document B) supplied to me.

In my opinion, the discharge letter was sub-standard at best. Here are my reasons: 1) first and foremost, there were no name and signature provided on the document from the nurse who completed the form; 2) the summary was overly brief; there was no comment on the previous health status/history. [Mr A's] medical history includes hypertension, hypercholesterolaemia and a high BMI which was highly relevant and they were omitted; 3) the sequence of events of [Mr A's] injuries were not detailed in the discharge summary. It failed to document the severity of [Mr A's] injures and treatments at Waikato DHB; 4) in the summary, there were no plans written regarding the continuing care required for [Mr A] at [ABI]. The standard of 'handover' from the discharge summary was poor. It failed to emphasize that [Mr A] was required to have continual DVT prophylaxis as per [Dr D's] letter (Document B) to the HDC. Finally, it was 'inaccurate' that the medication box of the nursing [transfer] letter was ticked 'no' that no medication was to go with the patient. In fact, [Mr A] was supplied with three syringes of 40 mg Enoxaparin to travel to [ABI].

These were serious omissions from the nursing transfer letter from [the surgical ward] to the ABI unit on 14th [Month2]. This was a deviation of standard. The main issue that DVT prophylaxis needed to continue was not emphasized or documented in the letter. The documentation would be deemed invalid because there was no signature from the nursing staff responsible for completing the transfer letter.

There should have been a medical transfer letter to go with the patient or it should have been faxed to the ABI prior to the patient's arrival. The medical discharge summary letter completed by the house officer, [Dr E], on the 14th [Month2] at 16:28 pm was incomplete and lacked appropriate clinical information for the safe transfer of the patient. While the clinical information was more detailed than the nursing notes, there was no discharge medication entered and no discharge plan. While I do appreciate that most of the medications list provided was faxed separately, it is important to have all sections of medical discharge summaries completed. As the result of such

omissions, Enoxaparin was not documented in the letter. In my opinion, the medical discharge letter was sub-standard and deviated from the normal standard.

3. The Standard and adequacy of Waikato DHB discharge planning particularly in relation to medication management and documentation of thrombo-prophylaxis, Issues and use of Enoxaparin.

It was clear that [this ABI facility] was not the initial intended location for [Mr A's] convalescence. From the clinical notes, [another ABI facility and two public hospitals including Hospital 2] were considered first. On 10th [Month2], the plan from the trauma team was to transfer [Mr A] to [a public hospital in another centre]. On 11th [Month2] during the clinical ward round, this direction was changed to aim for [Hospital 2] for transfer when a bed was available. On 13th [Month2], [Mr A] was accepted for transfer to [Hospital 2] but there were no beds. On the 14th [Month2], [Mr A] was not transferred to [Hospital 2] but instead he was transferred to [ABI]. The arrangement with [ABI] was completed in a very short period of time on a Friday afternoon. It was not certain whether a medical practitioner at [ABI] accepted [Mr A] prior to his transfer. In [Ms N's] statement, [ABI] was not certain that [Mr A] would be sent there until the last minute (Document D). Accordingly, the communications that were made available between the Waikato liaison officer, [Ms C] and [ABI] had indicated that [Mr A] was accepted by ABI for transfer.

Although [Mr A] did not have a moderate–severe head injury ([ABI] admission criteria), it is my understanding that he had concussion symptoms and ABI had accepted his transfer on 14th [Month2]. The statement from [Ms C], who indicated that she was not sure whether [Mr A] would fit the criteria for ABI, there were concerns about the appropriateness of the transfer to the ABI unit in [that centre].

Waikato DHB had deemed the use of Enoxaparin as a DVT prophylaxis an important issue. The three doses of Enoxaparin given to [Mrs A] to cover [Mr A] over the weekend demonstrated that Waikato DHB had taken reasonable steps to ensure the prevention of a DVT for [Mr A].

While there was no mention in the medication chart or in the clinical notes of the use of TED stockings, I presumed that according to [Dr I's] letter that their use was a fairly standard practice. In addition, [Mr A] had a dose of Enoxaparin prior to his flight but it was not charted. In my opinion, these were all reasonable and appropriate measures. However, there were serious issues that deviated from standard practice regarding documentation, communication and handover: 1) in the medical discharge summary letter by [Dr E], there was no discharge medication entered; 2) there was no medical documentation/description of Enoxaparin to be given at the weekend apart from the verbal request of [Mrs A] to provide the Enoxaparin for [Mr A]; 3) there was no handover to the staff in ABI or instructions from Waikato DHB that [Mrs A] would be required to give Enoxaparin herself while in the ABI

facility over the weekend. The three syringes that [Mrs A] handed to the nursing staff were not given during the course of the weekend. While ABI staff nurse called [the surgical ward] at Waikato DHB to clarify the Enoxaparin issue (Document D, [Mr R's] letter) the response received was in direct conflict with the instructions given to [Mrs A] by the medical staff prior to [Mr A's] transfer to [ABI].

In terms of [Mr A's] discharge planning, the Waikato team recognised the need for [Mr A's] continual care in the rehabilitation unit. [ABI] accepts patients with moderate to severe head injury provided that they are medically stable. The issue that arose from this was whether there was an ABI physician involved in the acceptance of the transfer of [Mr A] to the [ABI facility]. This is an important issue as it is a question of 'clinical responsibility.' Furthermore, it was not clear who determined that [Mr A] was medically stable for transfer. Following review of the communications between Waikato DHB and ABI made available to me, the transfer process was initiated on Friday in a fairly rapid manner and the patient was transferred out on late Friday afternoon.

If [Mr A's] transfer were not discussed with an ABI medical staff member, this would be a deviation from the standard of an accepted practice of transfer of a patient from one unit to another.

4. The appropriateness of DHB policy and procedures in place.

I have had the opportunity to review the policies that were forwarded to me from [Hospital 1] including medicine management policy, clinical records management policy, learning and development policy and [Hospital 1's] transfer policy. These policies are in place and they are sound and there is no deviation or departure from the standard of care and practice.

5. The overall standard of communication between Waikato DHB staff and ABI staff.

On review of the timeline between the request of the patient to be admitted to [ABI] and the time that [Mr A] was transferred out to the rehabilitation facility, it seemed to have been a rather hurried process. According to the statements provided by [Ms C], the acute rehabilitation co-ordinator, the request for the patient to be transferred to [the ABI facility] was initiated on 14th [Month2] during late morning. The patient was eventually transferred out in the late evening via air ambulance. In [Ms C's] statement it was pointed out that she was not certain whether [Mr A] would have fitted the criteria for transfer due to his head injury and she contacted the ACC for approval. Due to the lack of beds in [Hospital 2] for transfer that morning, a request was made for [Mr A] to be transferred to [ABI]. There was communication break-down at multiple levels. Here are some of the main points: 1) it was the expectation of the Waikato trauma team ([Dr D], Document A) to have [Mr A] met by medical staff upon arrival of [ABI]. The ABI nurse manager, [Ms N] had indicated that at no time was [Hospital 1] advised that [Mr A] would be met by

a registrar (Document D); 2) there was no named admitting doctor [for ABI]; 3) the transport of [Mr A] to the ABI unit during the late evening of 14th [Month2] seemed to be a late decision and this occurred on a late Friday afternoon; 4) the three pre-filled syringes of Enoxaparin were not documented in the discharge letters and there was no prescription relating to the syringes; 5) there was no direction as to what to do with the three Enoxaparin syringes; 6) when ABI tried to clarify the use of Enoxaparin by calling [the surgical ward] Waikato, staff nurse [RN G] at Waikato checked with [Dr K], house surgeon. [Dr K] had never met, and was not involved in [Mr A's] care at Waikato DHB prior to his transfer. [Dr K] did not recollect the question in his statement and it was unjust that [Dr K] was asked to give an opinion on whether Enoxaparin should be discontinued.

In my opinion, the communication had been inadequate in regards to the final arrangements of [Mr A's] transfer to the ABI unit. There is a departure from the standard of care and accepted practice in terms of the communication between the DHB and ABI staff. There were different expectations at the two institutions. In addition, there was no medical staff handover. The standard of practice is that the patient's overall clinical condition should have been discussed and reviewed by an ABI responsible medical clinician and accepted for transfer.

6. The standard of handover information between transit staff and ABI staff.

Unfortunately there was little documented information regarding the flight crew and the nurse escort with regards to the handover of the patient including medications to the ABI staff. From the admission notes at [ABI], it appears that [Mrs A] had given verbal instructions to the ABI staff regarding [Mr A's] Enoxaparin syringes and the prescription to be filled for the weekend to come.

I have not seen any document of the handover between the transit staff and ABI staff.

7. The influence of the transfer of [Mr A] occurring late on a Friday

[Mr A] sustained multi-system trauma and the risks to his mobility had been in question from the documentation supplied. There is one set of documentation from the Waikato team that [Mr A] was mobilizing well while other documents by the Occupational Therapist showed that [Mr A] was still confused at times and morbidity was still relatively poor and requiring assistance (Document A).

[Mr A] certainly was a complex trauma patient. The standard of practice is such that patients should not be transferred during the late afternoon, in particular on a Friday afternoon when there are no medical staff to receive the patient and examine the patient at the receiving facility. This would be different if the patient were to be transferred to an acute hospital where there was 24/7 medical staff available to admit the patient and chart the patient's

medication. [At a different ABI unit] the patients would not be suited for transfer on a Friday after midday, weekend or holidays.

In my opinion, the transfer of [Mr A] was inappropriate and deviated from the standard of practice.

8. The standard of assessment of [Mr A] on arrival at ABI according to the information available from the ABI entries

[Mr A] arrived at [ABI] at approximately 8.30 pm on 12th [Month2]. The entry of assessment on arrival was very brief from the nursing staff, [RN P], at 10.38 pm. While the descriptions were brief, it covered the basic information. There was a comment on maintaining nursing care and supervision with walking. The Enoxaparin was noted to be left in the drug room and it was also documented that [Mrs A] had taken the script from [Hospital 1] so that she could pick-up the medication the following morning and deliver it to ABI. The documentation was very brief.

9. The question of seniority of staff and the timing of the initial assessment review of [Mr A] at ABI

The Waikato Trauma team was expecting a registrar to meet [Mr A] upon arrival at ABI ([Dr D's] statement, Document A). From the ABI nursing manager's statement, [Ms N] (Document G, 4) indicated that at no point was Waikato DHB advised that a registrar or medical staff would admit [Mr A] upon arrival. [Ms N] also indicated that there were not going to be any medical staff available until Tuesday the 18th [Month2] and they would not accept the patient. [Mr A] arrived late Friday afternoon when there was no medical staff available including the weekend. On Monday 17th [Month2], although a working day, there were still not any doctors contracted to ABI to review the patient.

In my opinion, there was a communication breakdown between Waikato DHB and ABI. According to [Ms N] from ABI, [Mr A] should not have been transferred due to the lack of medical staff at ABI. It was not clear to me who had authorised [Mr A's] transfer. There was a major delay in [Mr A's] medical assessment at ABI. As a result, there were no drug charts transcribed for his care at ABI. It is unreasonable for a trauma patient to wait more than 72 hours to be assessed for admission by medical staff in a new facility. Unfortunately, in [Mr A's] case, he passed away even before an ABI physician was able to assess him. It was also pointed out in [Mr R's] report that the amendment to the ABI policy is for patients to be admitted by medical staff within 24 hours (Document G). In reviewing the ABI policy it was evident that such a policy had already been in place since 2012. [Mr A] should have been admitted within 24 hours by medical staff upon arrival at ABI.

10. The adequacy of pain relief administration at ABI.

Due to the late arrival of [Mr A] on a Friday afternoon, [Mrs A] was required to fill the prescription given to her by the Waikato medical team on a Saturday

morning. The prescription was adequately documented and the medication was handed on to the ABI staff on the Saturday morning. As outlined in the ABI incident report (Document G) the staff nurses had misread the dispensing frequency. Therefore [Mr A] was not given adequate pain relief. When the issue of inadequate pain relief was pointed out to the ABI staff they apologized to [Mrs A] in this regard.

In my opinion, there was a deviation from the standard practice. The inadequacy of pain relief was not picked up until Monday 17th [Month2]. By then, [Mr A] had had sub-optimal pain relief for over 48 hours since his admission. This is not an acceptable standard in any medical facility.

11. The standard of ABI medication charts and documentation

Unfortunately there was no ABI medication chart available for viewing. This is because no drug medication had been transcribed into the ABI medication chart. [Mr A] passed away before being seen by a medical practitioner after 4 days residing at ABI. The clinical entries were brief during the weekend. The sequence of events leading to his cardiac arrest was available.

In my opinion, there is a deviation from the standard of practice from ABI's own admission policy (page 3 of the service delivery document) which stated that the patient should be interviewed by a doctor within 24 hours. The policy was implemented in October 2012. In addition, it also stated that admission should have been postponed if a doctor was not available during the time frame.

There has been remedial action taken as a result of this event both at Waikato DHB and ABI. The letter produced by [Dr D] in the material supplied (Document G), which has shown [Dr D] had outlined six points regarding remedial actions. In my opinion this is reasonable and a good plan to go forward. In addition, I would recommend that the protocols/policies for transferring patients on Friday afternoons to a distant rehabilitation facility be reviewed at Waikato DHB.

The remedial actions from the ABI Unit provided by [Mr R] suggested that they had implemented changes in practice as a result of [Mr A's] case. They include admission process, medication policies and staff education. I believe that these changes will benefit from the further management of similar cases in the near future. In addition, there must be a process to ensure that the patient is medically stable for transfer and a physician in ABI must take responsibility for accepting patients. Furthermore, it is important that the patient is reviewed and met within 24 hours as suggested in the ABI policy.

References:

1. Venous Thrombo-embolism: Risk Factors after Injury EAST Guidelines; *J Trauma, 53(1) 142–164, 2002*

2. Implementation & Evaluation of Guidelines for Use of Enoxaparin as Deep Vein Thrombosis Prophylaxis after Major Trauma; *Pharmacotherapy 2001:21(6)*
3. Prophylaxis of Deep Venous Thrombosis in Trauma Patients: A Review; *J Blood Disorders 2013.4:4*
4. Prevention of Venous Thromboembolism, The Australia & New Zealand Working Party on the Management and Prevention of Venous Thromboembolism; *Best Practice Guidelines of Australia and New Zealand, 4th Ed*

Thank you for the opportunity to provide my report on the care of [Mr A].

Yours sincerely

Mr Li Hsee, FRACS, FACS
Trauma & Acute Care Surgeon

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Thank you for your request for review of further information that was not previously available provided to the HDC Office regarding the case of [Mr A].

The new information sent to me by email included:

1) Further information from ABI Rehabilitation Ltd dated 11th March 2015 provided by [the] Managing Director;
2) Response from ABI Nursing Manager [Ms N] dated 13th March 2015;
3) Statement from [Dr F] Senior House Officer at Waikato DHB dated 24th March 2015;
4) Statement from [RN P] at ABI dated 6th May 2015;
5) Response from [RN J] part-time flight nurse and [the] Operation Manager at [the air ambulance service]. These were dated 22nd May and 18th May 2015 respectively.

In accordance to your instructions, I have been asked to review the new information received and provide further comment and advice as to whether, in my view, this new information alters my previous advice in relation to the standard of care provided to [Mr A].

I have now had the opportunity to review these documents provided to me as outlined above by your office. This new information does not alter my previous advice in relation to the standard of care provided to [Mr A].

However, I would like to comment that the letters provided by ABI Rehabilitation and the ABI Nurse Manager both have demonstrated good evidence that since [Mr A's] case/incident at ABI further appropriate actions have been taken to address the issues which at the time had major gaps particularly with patient care. These changes include medically approving all clients by both discharging and accepting physicians, physician reviewing clients within the first 24 hours of their admission and a dedicated Pre-Admission Co-ordinator. New initiatives such as advanced

meeting planning with current and potential clients are likely to contribute to a safer patient care environment. This new collaborative approach to client admissions helps to ensure that ABI does not risk admitting medically unstable patients.

Regarding the statement from [Dr F], it is evident at a professional level that she learnt from [Mr A's] case and has modified her practice in writing clinical discharge documents. The statement from [RN P] was self-explanatory but contributed no further information gained from the investigation.

Finally, the response from [the flight nurse] suggested that the transfer of [Mr A] was routine but the request was unusual. It was unusual because the patient was being transported away from a tertiary hospital to a small rehabilitation unit. It was understood that [Mr A] wanted to be close to his family in [the region]. What they did not comment on was the timing of the request for such transport on a late Friday afternoon. [Mr A's] vital signs were duly recorded whilst he was transported and there were no physiological instabilities during the course of the flight. It was also noted that the handover was performed verbally and the patient's clinical summary was brief. As indicated by the flight nurse's response, there were no out of the ordinary changes of the patient's condition which required special input. It is appreciated that it has been a while since the incident and the flight staff did not notice or could not recall anything specific regarding transfer. What was critical to this event was whether the risk of DVT/PE was emphasised during the verbal handover. Unfortunately, there was no such documentation available.

In summary, the further information provided to me has shown that there have been positive steps taken for changes needed for ABI Rehabilitation [in this facility] after [Mr A's] incident. The process of admission and of care for transferred patients from acute hospitals have been addressed. These changes will hopefully bring a higher standard of care for patients admitted to ABI.

If you require any further information please do not hesitate to let me know. Once again, thank you for your instructions and the opportunity to further evaluate this new information.

Yours sincerely

Mr Li Hsee, FRACS FACS
Consultant Trauma & Acute Care Surgeon
Head, Acute Surgical Unit &
Co-Director of the Trauma Service"