Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

A Decision by the Deputy Health and Disability Commissioner

(Case 21HDC00322)

Introduction

1. This report is the opinion of Dr Vanessa Caldwell, Deputy Health and Disability Commissioner, and is made in accordance with the power delegated to her by the Commissioner.

2. The report discusses the care provided to Mr B by a general surgeon, Dr A, and a private hospital.

3. The following issues were identified for investigation:

   - *Whether Dr A provided Mr B with an appropriate standard of care from 16 until 18 December 2020.*
   - *Whether the private hospital provided Mr B with an appropriate standard of care from 16 until 18 December 2020.*

4. Independent advice was sought from a general and colorectal surgeon, Dr Julian Speight.

5. The parties directly involved in the investigation were:

Dr A	Consultant general surgeon
Mr B	Consumer
Mrs B	Consumer's wife

6. Further information was received from:

RN C	Registered nurse
RN D	Registered nurse
RN E	Registered nurse
Dr F	Surgical registrar
Dr G	Consultant general surgeon
Dr H	Surgical registrar
Dr I	House surgeon

Events leading up to complaint

7. In 2020 Mr B sustained a spinal fracture and, as a result, became partially tetraplegic[1] and had difficulties with his bowel care.

8. On 16 December 2020, Dr A[2] performed a colostomy[3] procedure on Mr B. Mr B was discharged on 18 December 2020, and later the same day he experienced postoperative symptoms. A CT scan showed that the stoma had been formed at the wrong end.

9. A colostomy is a surgical procedure to divert one end of the colon through an opening in the abdominal wall. The end of the bowel is called a stoma. A pouch is placed over the stoma to collect waste products that usually pass through the colon and out of the body through the rectum and anus. A wrong end colostomy occurs when the segment of the bowel used to form the stoma is not identified accurately, and the faecal matter is retained in the bowel rather than being collected in the colostomy bag outside the abdomen.

Response to provisional opinion

Mrs B

10. Mr and Mrs B were provided with an opportunity to respond to the information gathered during this investigation. Mrs B's comments have been incorporated into the report where relevant. In addition, Mrs B told HDC that she accepts that the changes developed by Dr A should prevent such complications in the future.

Dr A

11. Dr A was provided with an opportunity to respond to the provisional opinion, and he had no further comments.

[1] A form of paralysis that affects both arms and both legs.
[2] Dr A is a consultant general surgeon who specialises in colorectal and laparoscopic surgery.
[3] Surgical formation of an artificial anus by connecting the colon to an opening in the abdominal wall.

Te Whatu Ora

12. Te Whatu Ora was provided with an opportunity to respond to the provisional opinion. Te Whatu Ora supported the findings in the provisional decision and had no further comments on the proposed course of action.

Opinion: Dr A — breach

Formation of wrong end colostomy

13. On 16 December 2020, Dr A performed a laparoscopic[4] end colostomy and mistakenly formed the stoma at the wrong end of the bowel. This led to a bowel obstruction.

14. My independent advisor, Dr Julian Speight, noted that the formation of an end colostomy in a patient with bowel dysfunction after spinal injury is a well-recognised procedure. Dr Speight acknowledged that previously this Office has noted that wrong end stoma formation is a rare occurrence, and the frequency would likely be less than one per cent.[5] He said that the literature on this topic has not changed, and the advice provided in that opinion is still relevant.

15. Dr Speight advised that unfortunately, wrong end stoma formation is a technical error by the surgeon, and this error is best avoided by dividing the bowel at the recto-sigmoid junction or below.

16. Dr A told HDC that he accepts that dividing the bowel at the recto-sigmoid junction or below would lower the risk of attaching the wrong end. He stated that he was not exposed to this technique in training, and he suspects this was because it requires more mobilisation of the colon, as compared to dividing the bowel at the apex of the sigmoid loop, and the additional mobilisation may (rarely) lead to other complications. Dr A said that his standard practice at the time was to divide the sigmoid rather than more distally in the colon (ie, at the recto-sigmoid junction or lower). He agreed that a more distal division 'makes sense', and said that he would incorporate it into his practice in future cases.

17. Dr A accepts that formation of the colostomy at the wrong end of the colon is a significant departure from the accepted standard of care, and that it is a rare but potentially serious complication of the surgery. He stated that he was aware that this complication was a possibility and specifically checked for it during the surgery, but he did not identify his mistake. Dr A said that he has never experienced this complication previously or since.

18. Dr A reiterated his apology for the error that occurred.

19. I accept Dr Speight's advice that the incorrect formation of the colostomy constitutes a significant departure from the normal accepted standard of practice. I acknowledge that Dr

[4] A surgical procedure that allows access to the inside of the abdomen and pelvis without making large incisions in the skin.

[5] See opinion 16HDC01466.

A has accepted that this was a significant departure from accepted practice and has altered his practice to reflect this.

Discharge

20. On 17 December 2020, a nurse documented that Mr B had faecal matter in his colostomy bag. At 8.15am Dr A documented: '[S]toma working.' At 1pm the nurse documented that Mr B had active bowel sounds and the stoma remained active.

21. Mrs B visited on 17 December 2020 and noticed that Mr B had hiccups.

22. Dr A told HDC that he distinctly remembers that on 17 December 2020 there was significant output of faeces and flatus[6] and, because of this, he was less concerned about ongoing output because stoma activity can be intermittent.

23. At 2.40am on 18 December 2020, RN C documented that she checked the colostomy bag and there was 'consistent brown liquid insitu — not enough to measure'. At 7.45am Dr A documented that Mr B's stoma was draining nicely and he could be discharged if he passed a stoma nurse assessment.

24. A stoma nurse completed the stoma assessment and Mr B was cleared to be discharged.

25. The nurses working during Mr B's admission do not recall, and did not document, any hiccupping or any complaint of hiccups during their shifts. RN C and RN D also did not observe any abdominal distension.

26. On 18 December 2020 Mrs B again observed that Mr B had hiccups, and that there was not much stoma drainage, and his abdomen was distended. Mrs B stated that she told the nurse that he had hiccups and that his abdomen was distended, and the nurse was not concerned.

27. Dr A told HDC that he was not made aware that Mr B had hiccups and abdominal distension, and therefore had no reason to suspect that Mr B was developing a bowel obstruction. Dr A stated that if anyone had raised any concerns with him about the appropriateness of the discharge, he would not have discharged Mr B, as he never discharges patients in the face of concerns from the patient or their family about the appropriateness of discharge.

28. Dr Speight advised that discharging Mr B 48 hours after surgery with negligible stoma output was a mild departure from the standard of care, taking into account that Dr A was not informed of the poor stomal output prior to discharge, and that he was falsely reassured by the early functioning of the stoma.

29. In response to the provisional opinion, the private hospital reiterated that the nurses did document their observations of Mr B's stoma output in the patient's progress notes on multiple occasions. The private hospital said that the majority of these observations were

[6] Gas in the intestine.

recorded prior to Dr A's two attendances on Mr B during the mornings of 17 and 18 December 2020, and would have been available for his review at those times.

30. I accept Dr Speight's advice that Mr B should not have been discharged at this point. However, I acknowledge that Dr A was reassured by the early functioning of the stoma, and that he was not informed that Mr B had hiccups and a distended abdomen. Due to the passage of time I have been unable to establish what Mrs B advised the nursing team, but I would be critical of RN C and RN D if they were advised of Mrs B's concerns and did not document or follow up on these issues.

Conclusion

31. In summary, I consider that Dr A did not provide services to Mr B with reasonable care and skill, and I find Dr A in breach of Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[7]

Opinion: Private hospital — no breach

32. Mr B's laparoscopic colostomy was carried out at a private hospital. I consider that the concerns identified in this case relate to the individual error by Dr A rather than to the private hospital. Therefore, I am not critical of the care provided by the private hospital.

33. Mrs B told HDC that she was concerned that nursing staff at the private hospital did not take into account Mr B's special needs regarding the level of assistance he required, due to his injury, for example assistance with fluids. In response, the private hospital said that prior to Mr B's admission, senior nurses met with him to discuss and assess his specific needs to ensure that they were met. One nurse sourced a particular type of cup to make it easier for Mr B to drink.

34. In response to the provisional opinion, Mrs B told HDC that sourcing of the specific cup was not the issue. The issue was that Mr B was given a teapot that he could not lift, and he dropped it. She stated:

> 'A fluid balance chart does not mention the issue of a patient with limited hand movement and hand strength. It should have been documented on the care plan that a partial tetraplegic cannot lift water jugs or tea pots.'

35. I acknowledge Mrs B's concern, but I find the response of the private hospital to be reasonable and I am not critical of this aspect of care. I also acknowledge Mrs B's comments about the teapot, and I remind the private hospital to be mindful of this with patients with limited hand movement.

[7] Right 4(1) states: 'Every consumer has the right to have services provided with reasonable care and skill.'

Opinion: Te Whatu Ora — other comment

36. On 19 December 2020, Mr B was admitted to the surgical ward at a public hospital with hiccups, nausea, and a distended abdomen. A CT scan indicated that the 'wrong end of [the] sigmoid [had been] brought to [the] skin'. An attempt to insert a nasogastric tube[8] was unsuccessful, and Mr B vomited and aspirated, which led to a cardiorespiratory arrest. Mr B spent 66 days in the Intensive Care Unit.

37. Dr Speight advised that the occurrence of a 'wrong end stoma' is rare, and the clinical picture was further obscured by the fact that Mr B is paraplegic, which means that the clinical examination of the abdomen may be falsely reassuring, as significant pain may not be felt despite iatrogenic large bowel obstruction. Dr Speight said that unfortunately, the report of the initial abdominal X-ray was falsely reassuring, and a plan was made for both oral laxatives and enemas via the stoma.

38. Dr Speight stated that it is unfortunate that the nurse who administered the first enema did not recognise that immediate passage of faecal fluid from the rectum suggested a 'wrong end stoma', but he noted that this was not unreasonable as it is a rare event. Dr Speight advised that following the administration of a second enema, when a nurse suspected that the stoma communicated directly with the rectum, Mr B's care was escalated appropriately from a house surgeon to a registrar, and then to a consultant. However, Dr Speight advised that the process was slow, and the definitive examination of a CT scan was delayed by five hours.

39. Dr Speight said that there appear to have been a number of delays in Mr B's care, which together amount to a significant total delay from clinical suspicion to definitive radiology and then definitive treatment. Dr Speight stated that RN E correctly identified passage of the stomal enema from the rectum at 3pm, but it was not until 8.05pm that the CT was completed, and it was 11pm before Dr F attempted to reinsert a nasogastric tube, which amounts to a total of eight hours. Dr Speight advised that this is indicative of a number of system delays, and he considers that no single clinician can be held to account for the eventual adverse outcome.

40. I note the delay in requesting a CT scan and the overall delay in Mr B's care, but I accept that the cause of the delay was multifactorial in that it comprised multiple small delays across teams, in part because the wrong end stoma, as a rare event, was not the first issue being investigated. For this reason, I am not critical of the overall delay.

[8] A flexible plastic tube inserted through the nose and into the stomach.

Changes made since events

Dr A

41. Dr A told HDC that he now incorporates the following into his practice:

a) He converts to open rather than laparoscopic surgery if there is any doubt about the correct end of the colon being made into a stoma.

b) When performing a laparoscopic colostomy, he places his camera and operating ports on the contralateral[9] side of the abdomen from where the stoma is being formed, and he uses a cut-down technique under direct vision.

c) He remains vigilant for the possibility of wrong end colostomy (and other complications).

d) He reviews the discharge plan with the patient (and family if necessary) and nursing staff (including the stoma nurses) on a daily basis to ensure that the timing of the discharge is safe and appropriate.

Private hospital

42. The private hospital has undertaken the following:

a) It has amended its 'Stoma patient education checklist' to expressly state what patients should be able to describe following a colostomy.

b) It has introduced an updated 'Complex fluid balance chart'. The chart is designed to achieve a more concise record that can be interpreted clearly by both medical and nursing staff.

c) It provided a learning and development session entitled 'Managing stomas and fluid requirements' to all staff members.

d) It appointed two stoma nurse champions, who spent time with stoma nurses from the public hospital, and who will refresh their learning competency consistent with the latest evidence-based practice for care of patients with stomas in hospital and in the community in a later education session.

e) It updated the following policies:

   i. 'Fluid balance procedure' November 2022.

   ii. 'Colostomy and Ileostomy Care Guidelines' May 2023 (previously the 'Stoma Management Procedure').

[9] Relating to the side of the body opposite that on which a particular structure or condition occurs.

Recommendations

43. In response to the provisional recommendations, the private hospital:

a) Provided education sessions to clinical staff about 'Ostomy Management' (which included fluid requirements) and 'Bowel education, the how, when and why'. Evidence of this training has been provided to HDC.

b) Reviewed and updated the 'Stoma patient education checklist', which now expressly states what patients should be able to describe following a colostomy, and it provided evidence of this change to HDC.

44. In response to the provisional recommendations, Dr A provided HDC with a written apology to Mr B and his family for the breach of the Code identified in this report.

Follow-up actions

45. A copy of this report with details identifying the parties removed, except the advisor on this case, will be sent to the Medical Council of New Zealand, and it will be advised of Dr A's name.

46. A copy of this report with details identifying the parties removed, except the advisor on this case, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent clinical advice to Commissioner

The following advice was received from general and colorectal surgeon Dr Julian Speight on 26 September 2021:

'**Complaint: [Dr A]/[Mr B] HDC Ref: C21HDC00322**

Thank you for asking me to provide an opinion on the care provided by [Dr A] to [Mr B] in December 2020. I have read and agree to follow the guidelines laid out in the "Guidelines for independent advisors" 2019.

Qualifications: Mr Julian Speight BSc (Hons) MBBS(Lond) FRCS(Ed) FRACS I am a consultant General Surgeon working at Kew Hospital, Southern DHB. I hold a current New Zealand practising certificate (vocational registration in General Surgery) 25548. I am a Fellow of the Royal Australasian College of Surgeons, and a Fellow of the Royal College of Surgeons of Edinburgh. I am a Clinical Lecturer for the University of Otago and a past President of the New Zealand Association of General Surgeons (NZAGS), and remain on the executive committee. I also sit on the executive committee for the Rural Section of the Australasian College of Surgeons (RSS).

I have no conflict of interests.

In particular you have asked me to comment on:

1. The appropriateness of the procedure for someone with a spinal injury.
2. The procedure itself and the fact that the colostomy was formed from the wrong end of the colon.
3. Whether this complication should have formed part of the consenting discussion and if the consenting discussion in this case was adequate.
4. The appropriateness of the discharge on 18 December 2020.
5. Any other matters that you consider depart from accepted standards of care.

For each question you have asked me to comment on:

1) What is the standard of care/accepted practice?
2) If there has been a departure from the standard of care or accepted practice, how significant a departure (mild, moderate or severe) do you consider this to be?
3) How would it be viewed by your peers?
4) Recommendations for improvement that may help to prevent a similar occurrence in the future.

Documents provided:

1. Letter of complaint dated 16 February 2021
2. [Dr A's] response dated 17 March 2021

3. Clinical records from [the private hospital]

4. Additional documentation from [the public hospital] after my email request.

Timeline: December 16th 2020: [Mr B] admitted to [the private hospital] under [Dr A's] care. Surgery undertaken: laparoscopic formation of end colostomy Dec 17th Day 1 post-op. Stoma recorded as working (150mls recorded on fluid balance chart until 14:00hrs) 22:00hrs fluid balance records "scant" output from stoma. Patient had hiccoughs Dec 18th. Minimal stoma output (nil output recorded on fluid balance chart). Overnight nurse recorded "brown liquid in situ, not enough to measure". 7:45 am Surgeon records "Stoma draining nicely". Patient discharged at approximately 15:00 hrs (last nursing entry). 18:00hrs [Mrs B] reports her husband did not wish to eat or drink when at home, 22:00 by now looking unwell. Urine output was poor, and [Mr B] was in pain. An ambulance was called. 23:30 arrived at [the Emergency Department at the public hospital] Dec 19th Enema given via stoma but returned rectally 20:00 decision made for CT Scan, undertaken at 22:00. CT showed small and large bowel obstruction with distal end of colon stapled-off. Soon after an attempt made to place NGT led to vomit and aspiration followed by PEA arrest. Admitted to ICU at 23:00hrs.

1. The appropriateness of the procedure for someone with a spinal injury.

Formation of an end colostomy in a patient with bowel dysfunction after spinal injury is a well recognised procedure.

There are essentially three different ways to achieve this: either by open midline laparotomy, a laparoscopic approach or via a trephine through the abdominal wall at the site of the planned colostomy. The latter is probably the least commonly used, as it has both the risk of twisting the colon while delivering it through the abdominal wall, and also the access to the abdominal cavity is poor. This in turn risks pulling on the sigmoid mesentry and causing a mesenteric vascular injury. In my opinion the trephine method also increases the likelihood of subsequent parastomal hernia formation, as the size of the incision required to adequately mobilise the sigmoid colon is usually larger than the size required for the subsequent colostomy. I suspect this method would have the highest risk of "wrong end colostomy". It tends to be reserved for patients who are too unwell for a general anaesthetic, as this technique does allow for surgery under spinal, or even a regional block and sedation in dire circumstances.

The open lower midline laparotomy approach, and the laparoscopic technique could be considered equally suitable. The open technique allows excellent access to the abdominal cavity, and allows the surgeon to physically handle the bowel. This is very helpful when determining which end of the bowel to exteriorise, and should significantly reduce the risk of "wrong end colostomy". However, the midline laparotomy wound may delay the patient's post-operative recovery, and has the additional risk of subsequent incisional hernia formation. Laparoscopic surgery has the advantage of minimising the physiological insult, and thus allowing early resolution of ileus. It still affords the surgeon a good view of the bowel, allowing proper orientation of the colostomy. This may however be more difficult than the open approach if the

sigmoid colon is long and redundant/floppy, as the laparoscopic approach precludes the surgeon actually handling the bowel. I have been unable to identify any literature that compares the two approaches in spinal patients, specifically with regards to the risk of autonomic dysreflexia.

A further consideration is the site at which the colon is to be divided if an end colostomy is being formed. In the trephine method the surgeon can only divide the colon at the apex of the loop delivered through the trephine. This is usually at the midpoint of the sigmoid colon. Both the open and laparoscopic approaches afford the surgeon a choice of sites to divide the bowel. This may still be at the midpoint of the sigmoid, but this will leave a long segment of distal bowel still in continuity with the rectum and anus.

Provided the end colostomy is intended to be permanent, then the risk of a long de-functioned distal limb is that ongoing mucus production and shedding of the mucosal cells can lead to formation of inspissated secretions that resemble faeces. These can accrue and cause pain or discharge. Also, the remaining distal limb is at risk of disuse colitis/proctitis.

Many surgeons will choose either to divide the colon at the recto-sigmoid junction, or even as far distally down the rectum as reasonably feasible. The advantage of dividing at the rectosigmoid is that no rectal dissection is required. This reduces the risk of the procedure and protects the pelvic parasympathetic nerves. But the remaining rectal stump is still at risk of disuse proctitis, and the patient may require a second procedure to resect the rectal stump at a later date.

A complete proctectomy, with division of the bowel at the ano-rectal junction removes this risk, but is a much larger operation, with all the incumbent risks attached. Finally, leaving the rectum intact does afford the patient the opportunity of undergoing a reversal of the end colostomy should they find the stoma difficult/unacceptable.

In my practice, if there is any doubt as to whether the colostomy is to be permanent, I would tend to offer a loop colostomy as a trial, as this is much more easily reversed. It is important to note that if the bowel is divided at the recto-sigmoid junction or below, then it is very unlikely that that distal limb will reach the colostomy site. This therefore affords significant protection against a "wrong end colostomy".

2. The procedure itself and the fact that the colostomy was formed from the wrong end of the colon.

This case is in fact very similar to a previous HDC case (16HDC01466). Dr Mark Sanders was the expert advisor, and undertook a literature search at that time. I have subsequently undertaken an additional search, but cannot find any articles that supersede the ones quoted by Dr Sanders.

As Dr Sanders commented, this is a rare event, occurring in under 1% of procedures. It does however appear to be commoner in the laparoscopic approach in comparison to open (as discussed above).

It is unfortunately a technical error by the surgeon. As I have indicated above, I believe it is best avoided by dividing the bowel at the recto-sigmoid junction or below.

I have discussed this technical aspect with colorectal colleagues who work frequently with spinal patients. I did not reveal any specifics of the case, but simply enquired as to their routine choice of level of division of the bowel. It would seem they divide at the recto-sigmoid or even at the ano-rectal junction. Although this approach does not preclude inadvertent rotation of the proximal limb (with subsequent potential for large bowel obstruction), it does prevent exteriorising the wrong end, as discussed above.

Dr Sanders felt "wrong end colostomy" was indeed a significant departure from the accepted standard of care. I would agree with this. It should be noted however that this does appear to have been a genuine mistake despite attempts to check orientation.

3. Whether this complication should have formed part of the consenting discussion and if the consenting discussion in this case was adequate.

Again, I would refer to 16HDC01466: The incidence of "wrong end colostomy" appears very low. It is in effect a technical error, and as such I doubt many surgeons would feel it warranted discussion in the consent process. However, the likelihood of a complication being less than 1% does not entirely preclude discussion at consent. If the severity of a complication is high, it should still be mentioned even if the likelihood of occurring is low. As "wrong end colostomy" can usually be determined in a timely manner and corrected, the severity of the outcome could be considered relatively low. On balance, I do not think omitting to mention this potential complication at the time of consent would be considered a departure from the standard of care or accepted practice.

4. The appropriateness of the discharge on 18 December 2020.

The early output from the stoma on the first postoperative day appears to have falsely reassured [Dr A].

There was in fact no stoma output from the afternoon of 17th December to the time that [Dr A] rounded at 7:45am on the 18th December. It was at this juncture that [Dr A] made the decision that [Mr B] was fit for discharge. [Mrs B] makes note in her complaint that she felt the discharge was hurried. She noted that her husband's abdomen was distended and he had hiccups. I gather [Mrs B] expressed some concerns about her husband's planned discharge to the nursing staff, but these concerns were not relayed to [Dr A]. In his response to the complaint, [Dr A] comments that had he been made aware of the family's concern he would have almost certainly kept [Mr B] in longer. It would appear that [the private hospital] also has discharge criteria, and that [Mr B] had met these criteria prior to discharge.

I do feel that the stoma output was in fact minimal when [Dr A] made the decision to discharge [Mr B] at 7:45 am. The stoma output then remained unrecordable for the remaining inpatient stay. I believe this could be considered a mild departure from the standard of care. In [Dr A's] defence, he was not contacted by the nurses to alert him

to the fact that the stoma output remained poor. Nor was he told the patient was distended and had hiccups (a worrying sign of potential small or large bowel obstruction).

5. Any other matters that you consider depart from accepted standards of care.

I note in [Mrs B's] complaint she raised a concern around the apparent delay between her husband's acute admission to [the public hospital] and a subsequent CT. A simple abdominal X-Ray at the time of acute admission should have raised concern around acute bowel obstruction irrespective of the underlying cause. As indicated above: "wrong end colostomy" is a rare event. As such the admitting team could be forgiven for not immediately considering this diagnosis. However, there are a number of commoner causes for post-operative bowel obstruction that should have been promptly investigated. I do not have access to the hospital notes pertaining to [Mr B's] acute admission to [the public hospital], and as such cannot comment as to the care provided. I am assuming the Commissioner has asked another surgeon to comment?

Conclusion: I believe this case is very similar to one already ruled upon (16HDC01466), and as such a precedent has been set.

I believe that formation of an end colostomy with the distal limb, resulting in large bowel obstruction should be considered a significant departure from accepted standard of care.

I also believe that discharging [Mr B] at 48hrs post-surgery when his stoma output was negligible is also a departure from standard care. However, [Dr A] was not alerted to the fact that the stomal output was poor prior to discharge, and in his own words had been falsely reassured by the early functioning of the stoma on day one post procedure. In light of this, I believe this should be considered only a "mild" departure from standard care.

I tend to disagree with the advice offered to [Dr A] with regards to marking the limbs of the bowel with diathermy as a defence against a subsequent repeat of this complication. I believe this has some inherent risk of subsequent thermal injury and delayed leak if that portion of the bowel is not exteriorised with the formation of the stoma. As I have indicated above, division of the bowel at the rectosigmoid or below is an effective protection against "wrong end stoma" as it renders the distal limb too short to accidentally exteriorise.

I hope this is of some help?

Kind regards

Julian Speight
Consultant General and Colorectal Surgeon'

The following further advice was received from Dr Speight on 16 October 2022:

'Regarding the additional paperwork supplied by [the private hospital]:

I. [Private hospital] response to complaint (10th August 2022)
II. Discharge Summary dated 18th December 2020
III. Statement from … (June 2022)
IV. Statement from [RN C] (undated)
V. Statement from [nurse] (19th June 2022)
VI. Statement from [nurse] (02/08/2022)
VII. Statement from [RN D] (05/08/2022)
VIII. [Private hospital] Post Operative Recording and EWS procedure (1.6482)
IX. [Private hospital] "Escalation Process"
X. [Private hospital] Stoma Management Procedure
XI. [Private hospital] "Policy: Addressing Patient Code of Rights"
XII. [Private hospital] "Discharge Planning Policy"
XIII. [Private hospital] "Discharge Checklist"
XIV. [Private hospital] "Fluid Balance Procedure"
XV. [Private hospital] "Fluid Balance Chart"
XVI. [Private hospital] "Peri-operative Surgeon Preferences: [Dr A]"
XVII. [Private hospital] "Surgical Audit Report, Oct 2020–Dec 2020"
XVIII. [Private hospital] Incident report ID: [number]

I think the main issue that bears attention is the assertion [Mrs B] makes in her complaint that she "*made the observation that [Mr B's] urinary output was very poor and that his abdomen appeared distended and that he had hiccups"* prior to discharge. Also there is the concern that the stoma output was considered adequate for discharge when in fact the patient was suffering iatrogenic large bowel obstruction secondary to externalising the wrong end of bowel when forming the end colostomy.

As you can see from the above, I am now working from the response [from the private hospital], and the statements from the Registered Nurses involved in [Mr B's] care on that admission. I note that my original assessment was based on the letter of complaint, [Dr A's] response (dated 17th March 2021) and Clinical Records from [the private hospital]. I have therefore gone back through the clinical notes provided to me in 2021.

Reviewing the Fluid Balance Charts dated 16/12/20202, 17/12/2020 and 18/12/2020: 900 mls of urine was recorded from the SPC up until 22:30 on the 16th. Making an average urine output for that day as 41mls/hr. This is appropriate (0.5mls/hr/kg) for an

80Kg male. No total output is recorded on the 17th, and it is a little unclear if the "urine" column is recording individual amounts or a running total. 800mls is recorded at 06:00hrs, and I am assuming this amount was emptied. 250mls is recorded at 07:30, and 300mls at 14:00hrs. Written under this in red ink is 550mls, without an allocated time, indicating this is a subtotal (250+300). At 16:15 there is 300mls, and at 20:20 650mls. This totals to 2,300mls from midnight to 22:00 hrs (22hrs in total), making an average urine output of 104.5mls an hour. This is certainly an adequate urine output for that day. The fluid balance chart from the 18th seems to indicate that 3000mls were emptied at 11:00 (later entry with up-arrow) followed by a further 250mls at 12:00. Making an average hourly urine output up until midday of 270mls/hr, which again is more than adequate. Based on this, I don't think it would be reasonable to support [Mrs B's] claim that [Mr B's] urine output was poor. Perhaps more importantly the fluid chart on the 18th only records 50mls of oral intake, and this probably supports [Mrs B's] recollection that by 18:00hrs the patient was unable to tolerate oral intake.

Reviewing the Fluid balance charts with regards to stoma output, nil is recorded on the 16th. 150mls is recorded at 14:00hrs on the 17th, and then it appears the bag was changed at 21:30hrs ("night bag applied"). Unsurprisingly, half an hour later at 22:00hrs there is only "scant amount" and too small to measure. More importantly, no stoma output is recorded on the 18th. This would certainly be in keeping with the fact that the distal limb of the bowel was used to form the stoma. It is unclear to me whether any pre-operative bowel cleansing was employed (bowel prep), but in any case there can be some remaining stool expected in the distal limb. This likely accounts for the 150mls recorded over the post-operative course. The Ostomy nurse records "porridge like" stoma output at 14:00hrs on the 17th, which likely corresponds to the 150mls of stoma output recorded at 14:00hrs on the 17th (see above). By 02:40 hrs on the 18th RN C notes "brown liquid" "not enough to measure". At 15:00 on the 18th RN D records that the stoma is "active with faecal fluid", but no volume is recorded in the written notes, nor on the fluid balance chart. The final entry is from [the stoma nurse] recording "output semi thick porridge" and stating "good for D/C". Unfortunately no volume is recorded here either. Based on the volumes of stoma output recorded on the Fluid balance chart, I stand by my initial assessment that after the 150mls of porridge like effluent at 14:00 hrs on the 17th, the remaining stoma output was "unrecordable". It is possible that there was porridge-like effluent in the bag on the 18th when the stoma nurse attended, but without the volume being recorded it is impossible to support this assumption.

No record is made of abdominal distention. This can be hard to assess in spinal injured patients as their abdominal wall is flaccid. In retrospect, it is likely that the patient's abdomen was distended by the 18th, as there could not have been any bowel effluent passing from the proximal (stapled) limb of the large bowel. However, this may not have been evident to the observing nursing staff, and with a lack of abdominal sensation may not have been recognised by the patient either. Unfortunately, without contemporaneous records noting distention it becomes a difference of recollection between the nurses and [Mrs B].

In summary: I agree that the patient's urine output was acceptable throughout. I agree that there is no mention of hiccoughs in the nursing notes, and that none of the nurses recalled hiccoughs being an issue when asked to comment 18 months later. It is possible that the patient was suffering from hiccoughs, and that [Mrs B] may even have brought this to the nurses' attention, but that this observation was simply not recorded. Based on the affidavits of the nurses involved, and the lack of a written record, I think it reasonable to say that it is impossible to prove the patient was suffering hiccoughs at the time of discharge. The same is applicable for [Mrs B's] complaint regarding abdominal distention. I do however believe that the fluid balance charts show a very low stoma output. Although the Stoma Nurse records a "porridge like" effluent in the bag before discharge, no volume is recorded. Applying the same logic to the fact that hiccoughs were not recorded, so too the volume of stoma output immediately prior to discharge was not recorded. All records prior to this seemed to suggest a total of 150mls had been measured. This is in keeping with a small volume expelled from the distal limb. Unfortunately this small volume of stool from the distal limb was discharged into the colostomy bag just prior to the surgeon's review of the patient on the 17th, and in his own words this falsely reassured him that the stoma was functioning appropriately.

I hope this helps?

Please let me know if you need further clarification.

Nga mihi

Julian'

The following further advice was obtained from Dr Speight on 15 December 2022:

'HDC Ref: 21HDC00322

Thank you for asking me to provide an opinion on the care provided to [Mr B] on the 19th December 2020. I have read and agree to follow the guidelines laid out in the "Guidelines for independent advisors" 2019.

Qualifications: Mr Julian Speight BSc (Hons) MBBS(Lond) FRCS(Ed) FRACS

I am a consultant General Surgeon working at Kew Hospital, Southern DHB. I hold a current New Zealand practising certificate (vocational registration in General Surgery) 25548. I am a Fellow of the Royal Australasian College of Surgeons, and a Fellow of the Royal College of Surgeons of Edinburgh. I am a Clinical Lecturer for the University of Otago and a past President of the New Zealand Association of General Surgeons (NZAGS). I also sit on the executive committee for the Rural Section of the Australasian College of Surgeons (RSS).

In particular you have asked me to comment on:

1. Whether you would have expected any further actions or investigations following [Mr B's] abdomen X-ray at 2.13am.

2. The appropriateness of the length of time between [Mr B's] admission to the surgical ward and when he underwent the CT scan.
3. The reasonableness of the care provided by [Te Whatu Ora].
4. The reasonableness of the care provided by [Dr G].
5. The reasonableness of the care provided by [Dr H].
6. Whether you believe this file would benefit from advice from any other specialties.
7. Any other matters in this case that you consider warrant comment.

For each question you have asked me to comment on:

1) What is the standard of care/accepted practice?
2) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider this to be?
3) How would it be viewed by your peers?
4) Recommendations for improvement that may help to prevent a similar occurrence in the future.

Documents provided:

1) [Te Whatu Ora's] response dated 26 September 2022 including a timeline of care for [Mr B] on 18 and 19 December 2020
2) Medical records covering the period 18–20 December 2020
3) Copy of X-Ray taken on 19 December 2020
4) [Dr G] response dated 21 October 2021
5) [Dr I] response dated 23 August 2022
6) [Dr H] response dated 24 August 2022

Timeline 19/12/2020

00:35 Presented to ED department Triage 3 (to be seen in 30 mins)

00:51 Seen by [ED Registrar] L abdo pain, distention no BA since discharge

01:33 Hb 125 WCC 12.3 venous gas pH 7.42 BXS 3

01:35 Patient referred to [Dr F] (Surgical Registrar)

01:46 CXR

01:51 AXR No perforation, distended loops large bowel

02:31 Patient reviewed by [Dr F] (Surgical Registrar)

04:45 Patient transferred to Ward

No time Ward round [Dr G] [Dr I] writing: Plan laxatives

08:50 Hb 127 WCC 12.3

15:00 Nursing notes: laxatives given bowel opened after 15 mins

D/C summary: fleet enema given down stoma, rectal output of faeces.

17:10 Registrar review distended adbo, hiccoughs CT planned

Cough, chest pain, rash [Dr H] & [Dr G]

22:05 CT "wrong end stoma"

23:00 NG Cardiorespiratory arrest

23:00 Hb 136 WCC 18.1 venous gas pH 7.13 BXS -6

1. Whether you would have expected any further actions or investigations following [Mr B's] abdomen X-ray at 2.13am.

The formal report on the abdominal X-Ray describes the bowel gas distribution as "non-specific" and states: "there is no evidence of bowel obstruction or perforated hollow viscus". Based on this report there would be no indication to take any immediate action.

However, the AXR film has also been provided for my review, and I would comment that the large bowel is markedly distended. Although unable to accurately measure the large bowel diameter, I would strongly suspect it is greater than 5cm. There is some faeces noted in the caecum, but the remainder of the large bowel appears empty. There is marked distention of the large bowel distal to the caecum, suggesting that there is a second aetiology for obstruction other than the faeces in the caecum.

2. The appropriateness of the length of time between [Mr B's] admission to the surgical ward and when he underwent the CT scan.

The consultant ward round on the morning of the 19th has no time-stamp. Presumably it occurred around 8am or a little thereafter. At this point in time the patient appears stable. [Dr G's] written statement does describe distended large bowel with faecal loading of the caecum, suggesting he reviewed the AXR himself. Apparently [Dr F] described a tight stoma (not recorded in his notes), which could potentially explain why the colon was distended distal to the faecally loaded caecum.

A note written by [RN E] at 12:40 describes giving an enema via the stoma which appeared to come out "?PR"(sic). A further fleet enema was given via the stoma at 14:15 and within 10 minutes stool was passed per-rectum. [RN E] was appropriately concerned and informed the House Officer at approximately 15:00hrs. It would appear from the notes [Dr I] (HS) then reviewed the patient at 17:00hrs. [Dr I] records that there is no stoma output despite two fleet enemas, and that there is rectal output of faeces and possibly enema fluid. [Dr I] records the patient having a very distended abdomen which is generally tender, and also makes note that the patient is hiccoughing. [Dr I] then appropriately seeks advice from [Dr H] (Surgical Registrar), who reviews the patient within 10 minutes at 17:10. [Dr H] then seeks advice from [Dr G] who asks for an urgent CT abdomen to be undertaken. The request was received at 17:24. The time

stamp on the CT is 20:05, and the teleradiology report was available at 21:27. The reporting radiologist then records discussing the findings with [Dr H] at 21:40.

I think [RN E] appropriately suspects the stoma connects to the rectum after both the first and second enemas rapidly transit PR. This is escalated to the house surgeon in a timely manner, but unfortunately there is quite a delay until [Dr I] is able to review the patient (approximately 2 hrs). Once [Dr I] has reviewed the patient the Registrar is quickly alerted and [Dr G] is appropriately informed. A plan to undertake CT is rapidly made, but again there is a delay from requesting the CT to undertaking the actual examination of approximately 3 hrs. Consequently, the delay from clinical evidence of a "wrong end stoma" being evident to CT mounts up to 5 hrs. As is usually the case, this is not the fault of a single clinician, but rather indicative of system delays. It is unclear from the notes why [Dr I] took 2 hrs to review the patient initially, but presumably [Dr I] was caught-up in other clinical tasks on the ward. The patient's physiological Early Warning Score (EWS) was 4 at this point, and this would not have triggered more urgent action. It is also unclear why there was a delay of 3 hours from requesting to undertaking the CT, but again I am assuming there were other patients undergoing CT who had either been booked in advance of [Mr B], or were considered a higher clinical acuity.

3. The reasonableness of the care provided by [Te Whatu Ora].

It must be noted that the occurrence of a "wrong end stoma" is rare. The clinical picture was further obscured by the fact that [Mr B] is paraplegic. This means clinical examination of the abdomen may be falsely reassuring, as the patient may not feel significant pain despite iatrogenic large bowel obstruction. The report of the initial abdominal Xray is unfortunately falsely reassuring, and a plan for both oral laxatives and enemas via the stoma is made. It is also unfortunate that the nurse administering the first enema did not recognise that immediate passage of faecal fluid PR suggested a "wrong end stoma", but as this is a rare event it is not unreasonable to go unrecognised. [RN E] did then suspect that the stoma communicated directly with the rectum (indicating that the wrong end had been exteriorised) when administration of the second enema also immediately passed PR. From that point the patient's care was appropriately escalated from house surgeon to registrar and then to consultant. As described above, the process was slow, and the definitive examination of CT was delayed overall by some 5 hrs. However, this delay was likely multifactorial. During this time the patient appeared physiologically relatively stable with a EWS recorded at 4.

An addendum to the CT report states that the CT result was discussed with [Dr H] at 19:40, although [Dr H's] notes regarding the CT result are not time-stamped. A plan was made to make the patient nil by mouth and to place an NG-tube. [Dr H's] note states: "Overnight Reg [Dr F] aware of patient". The subsequent nursing note at 22:20 ([nurse]) records that an attempt at passing the NG … has failed. The plan was for [Dr F] to attempt an NG tube. Once again this appears to be close to a 3 hr delay between radiological evidence of iatrogenic complete large bowel obstruction and a definitive attempt at nasogastric decompression. It should also be noted that the CT records fluid distension of the small bowel, stomach and distal thoracic oesophagus.

Unfortunately when [Dr F] attempted NG insertion [Mr B] vomited and aspirated, leading to a cardiorespiratory arrest. This occurred at 23:00hrs and at the 5th attempt at NG insertion. I have been unable to locate the contemporaneous note made by [Dr I] at that time (described in the timeline provided). It is therefore unclear what position the patient was in at the time.

4. The reasonableness of the care provided by [Dr G].

I believe [Dr G's] care was reasonable. He was not made aware of the patient until 8:00 at handover, and at that point in time the working diagnosis was of caecal faecal loading, plus distended large bowel distally that had been attributed to a tight stoma. Although there was no clear radiological evidence of faecal loading in the distal colon, a plan of trial of fleet enema via the stoma to facilitate colonic emptying seems reasonable. It was then not until 17:10 that [Dr G] was made aware that the administered enemas appeared to be passing PR. He appropriately recommended a CT at that time. Once the result of the CT had shown iatrogenic complete bowel obstruction secondary to a "wrong end stoma" he requested an NG be placed to decompress the bowel with the plan to operate the following morning to rectify the error. Had the NG been placed successfully, it is reasonable to assume the gut could have been adequately decompressed to allow temporisation until the following day. Unfortunately passage of the NG led to vomiting and subsequent aspiration of GI contents.

5. The reasonableness of the care provided by [Dr H].

As I have indicated above, there was a 2 hr delay between [Dr H] being alerted to the PR passage of the enema administered via the stoma, and [Dr H's] review of the patient. It is unclear from [Dr H's] written statement as to the precise cause for this delay. I can only imagine [Dr H] was busy with other patients who [were] perceived of higher clinical concern at the time. As the patient's EWS score was only 4, there would not have been any significant clinical concern to warrant urgent review. … [Dr H's] care appears entirely appropriate. Once [Dr H] has reviewed [Mr B], [Dr H] escalates the care to [the] Registrar within 10 minutes. [Dr H] also requests the CT in a timely manner once instructed to do so (plan for CT made at approximately 17:10 and CT request received at 17:24).

6. Whether you believe this file would benefit from advice from any other specialties.

It may be beneficial to gain comment from a Radiologist regarding the report on the Abdominal Xray. I believe the reporting radiologist somewhat underplayed the significance of the large bowel dilatation. However I concede this is not my area of expertise.

7. Any other matters in this case that you consider warrant comment.

As I have indicated above, there appear to be a number of delays in [Mr B's] care that together amount to a significant total delay from clinical suspicion to definitive radiology and then definitive treatment. [RN E] had correctly identified passage of the

stomal enema PR at 15:00hrs, yet it was not until 20:05 that the CT was completed and 23:00 hrs before [Dr F] re-attempted NG insertion. This amounts to a total of 8 hrs.

Once again, this is indicative of a number of system delays that compound to produce the total delay. I do not believe that any one single clinician can be held to account for the eventual adverse outcome.

I hope this is helpful.

Kind regards

Julian Speight BSC MBBS FRCS FRACS'