

Improving patient experience and outcomes following serious injury

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ABSTRACT

AIM: To explore injured patients' experiences of care to identify areas for improvement in routine service delivery from surgical teams in the transition from inpatient to community-based care.

METHODS: Qualitative study drawing on 17 in-depth, semi-structured interviews, conducted from 1 October 2017 to 31 November 2017, with trauma patients (and patient-nominated key support people and health or social care professionals) registered by the Midland Trauma System Registry (New Zealand).

RESULTS: All patient respondents had been under the primary care of surgical sub-specialty teams at Waikato Hospital rather than the specialised trauma service that primarily cares for patients with major multi-system trauma. Patients perceived their pre-hospital and emergency care as high quality and highly valued the compassion of staff during their inpatient phase of care. Exceptions were the perception of communication gaps across the spectrum of care from admission to discharge and beyond, limited access to psychosocial services to manage ongoing psychological trauma and a lack of preparedness for discharge. Following discharge, respondents reported the high level of reliance on key support people, inadequate information provision about what to expect in relation to the journey through the health system after discharge, and a lack of coordination of post-discharge care.

CONCLUSION: This study highlights perceived issues in the patient care pathway in the transition from inpatient to community-based care, especially communication and discharge information provided by surgical clinical teams and Accident Compensation Corporation (ACC). Comprehensive inpatient care and clinical handover to primary care (rather than discharge planning processes) by dedicated clinical trauma services may provide more holistic models for surgical services to improve their influence on the transition of trauma patients into the community, assisted by organisation changes and support to enable effective service delivery. Specifically, trauma patients and their carers perceived the need for better screening and treatment for psychological trauma in the inpatient and outpatient setting; better information exchange prior to the transition from inpatient to primary care; more convenient and accessible follow-up services including a single point of contact for coordination of post-discharge care; and acknowledgement and practical support to relieve the significant and pervasive carer burden identified in this study. These findings provide the opportunity to implement focused system changes to provide more equitable and effective support in the transition to community care and beyond. The end result will be better experiences for patients and whānau, and improved health and vocational outcomes following serious injury.

A trauma system is an organised, coordinated effort in a defined geographic area, which delivers the full range of care to all injured patients, and is integrated with the local public health system with a focus on prevention.¹ Injured patients have the best chance of making a good recovery

if the trauma system performs well and is effectively integrated into wider health and social care systems, leading to lower mortality rates, reduced lifelong disability and improved quality of life, with demonstrated cost savings to the health system.

Serious injury means that the patient met the eligibility criteria for the study and was admitted to Waikato Hospital with the possibility of long-term functional deficit. Eligible patients had complex injuries; that is, they experienced injuries to two or more body regions or one significant injury to one body region with the possibility of long-term deficit. Qualitative studies of patient and whānau experience following serious injury are few, with most focusing on traumatic brain and spinal cord injuries.²⁻⁷ This is the first qualitative study to investigate the experience of Waikato Hospital trauma patients and their whānau as they transition from inpatient surgical services to community-based care. The findings will inform system changes to support improved health, vocational and social outcomes for injured patients.

Methods

Setting

Patients were identified through the Midland Trauma System's population-based trauma registry, which captures data on major and non-major trauma patients admitted to six hospitals within the Midland region of New Zealand. The MTS registry has the following eligibility criteria (Midland Trauma System, n.d.) and can register over 200 data points related to each major trauma event:

MTS registry inclusion

- Admission to a Midland hospital as a result of and within seven days of injury
- Death in hospital as a result of injury

MTS registry exclusion

- Trauma patients discharged from the emergency department
- Injuries from documented pathological processes
- Isolated peri-prosthetic fractures
- Exertional injuries
- Hanging/drowning/foreign bodies without anatomical injury
- Poisoning
- Patients admitted primarily for pre-existing medical conditions not directly as a result of injury

Sampling strategy

The following patients were eligible to participate:

- 16 years of age or above
- Injury Severity Score (ISS)⁸ equal to or above 8
- Blunt trauma mechanism
- Waikato Hospital as the definitive acute care provider
- Waikato district domicile patient

Exclusion of injury within the Abbreviated Injury Scale (AIS) body region 1 (head/neck). The AIS is an anatomical scoring system that grades injuries on a scale of 1 to 6 to assess the potential for risk to life; an AIS score of 1 is minor and 6 is reflective of a non-survivable injury.⁸

A heterogeneous purposive sample of all eligible patients was used to target sample diversity across gender, age and ethnicity.⁹⁻¹¹ A total of 17 participants were recruited to the study, including eight patient participants (up to 12- months post-discharge), eight patient-nominated key support people, and one patient-nominated health professional (an occupational therapist). Only one patient participant felt able to nominate a health or social care professional involved in their care. Participants provided consent prior to interviews and were informed that the interview questions may raise issues that could cause distress. If this occurred, the distressed patient protocol was applied, and participants were provided options for follow up.

Ethics approval was gained from the Health and Disability Ethics Committee NZ (HDEC), and project approval provided by Te Puna Oranga Maori Consultation Research Review Committee, Waikato District Health Board.

Data collection

A total of 17 participants participated in semi-structured, in-depth interviews rather than focus group, to enable participants to speak freely about their experiences and perceptions.¹² Kanohi ki te kanohi (face to face) interviews were offered to encourage trust, which is critical to engagement and relationship development with Māori.¹³ The interviewer was not known to the participants. The purposive sampling was done

by an MTS hub data analyst and details of potential patients were kept confidential from the researchers and interviewer. Participants were recruited to the study and interviewed until saturation occurred (which was earlier than anticipated). Saturation occurred when the same themes were recurring, and no new insights into these themes were given by additional sources of data. Patients were invited to participate in one interview (by telephone or *kanohi ki te kanohi*) up to 12 months post-discharge.¹² All interviews were conducted between 1 October 2017 and 30 November 2017. Interviews were recorded with participant consent using a digital voice recorder. A topic guide (Appendix) was used to provide interviewer prompts of key issues for exploration, including the injury; treatment of the injury; experience with compensation agencies; impact on work life, home life, transport and health; communication and cultural needs; and perception of recovery.

Data analysis

Each interview was transcribed from the audio recording for analysis using the NVIVO Version 8.0. Braun and Clarke's¹⁴ six-phase process of thematic analysis was used to identify important thematic groupings and the relationships between them. Transcripts were read a number of times to ensure consistency of meaning of individual responses, initial codes were given within each interview, then compared and integrated across the entirety of the transcripts enabling theme development (AB and KO). Two researchers coded the data and confirmed the themes to ensure the thematic analysis was authentic and of good quality. AB is an experienced health services researcher (PhD) with extensive health services research experience in areas other than trauma and critical care; KO is an emerging researcher and registered nurse (RN, MN, Crit Care) with 30 years' experience working intensive care, emergency department and remote area nurse in Australia and New Zealand. Larger, broader themes developed and were able to be described and labelled. Participant quotes were included to illustrate patient experience themes post serious injury.

Results

Participant profiles

The ages of patient participants ranged from 16 to 79 years (Table 1). All patient participants nominated a key support person; however, of the eight patients interviewed up to 12 months post-discharge, all but one could not identify who was responsible for their care coordination following discharge and were therefore not able to nominate a health or social care professional to participate in an interview. The one patient-nominated health professional was an occupational therapist.

Patients perceived their pre-hospital and emergency care as high quality and highly valued the compassion of staff, although expressed concerns regarding access to psychosocial services, reliance on key support people, poor communication and information provision and a lack of preparedness for discharge, and coordination of post-discharge care.

The need for routine screening and access to psychosocial services

All patients perceived ongoing physical and emotional stressors associated with the initial traumatic impact, regardless of the time since discharge. Several patients reported hiding their physical and emotional concerns from their key support person to avoid upsetting them, which added to the sense of isolation they were already feeling. Ongoing effects such as pain, fatigue, reduced memory, emotional instability, physical decline and financial pressure caused concern for the future and the unknown likelihood of returning to pre-accident health. Some patients returned to work earlier than they should have, misrepresenting their recovery to their doctors in order to get clearance for work.

“As soon as I got the clearance I just went back, even though... I still can't close my fingers properly. I'm forcing myself to squeeze it and just do my jobs. I needed that money because I had bills to be paid... I just felt hopeless. Because I couldn't support my family or do anything for them.”

– Steven

Table 1: Patient participant demographics.

Patient participant pseudonym	Gender	Ethnicity	Age range	Timeframe since discharge from hospital	Mechanism of injury	Patient reported injuries	Key support person relationship to participant
Hailey	Female	NZ European	46–60	6 weeks	Fall	Liver laceration, fractured ribs, punctured lung	Friend
Tina	Female	NZ European	31–45	6 months	Workplace incident	Fractured ribs, punctured lung	Sister
Elizabeth	Female	NZ European	16–30	6 months	Road traffic crash	Multiple fractures (arms, legs, pelvis), kidney injury, concussion	Partner
Mike	Male	NZ European	46–60	6 months	Fall	Fractured ribs, punctured lung	Wife
Steven	Male	Māori	46–60	12 months	Road traffic crash	Multiple fractures (ribs, pelvis, fingers), concussion	Wife
Belinda	Female	NZ European	46–60	6 weeks	Workplace incident	Limb amputation	Husband
Karen	Female	NZ European	>61	6 weeks	Fall	Multiple fractures (nose, compound fracture of leg and wrist)	Friend
Joe	Male	NZ European	>61	12 months	Fall	Fractured ribs	Wife

Patients, their key support people, and the nominated service provider all stated that earlier access to psychological care or counselling could have avoided escalating issues and concerns regarding restoration of function.

“... I would have much preferred earlier access to counselling. It still would have been difficult after hospital, but it probably would have shortened the amount of time [for recovery]. I wouldn't have lost a lot of my life... lost a lot of dignity, all that sort of stuff. ...I was in a really, really dark place and I was quite suicidal for a long time.”

– Elizabeth

Improved access to counselling services following routine psychological screening

initiated in hospital, was one of the practical recommendations suggested by patients and key support people to improve the patient experience following serious injury.

Pivotal role of the key support person

All patients were highly appreciative of the support provided by key support people and the crucial role they played in recovery, stating their key support person was the primary factor that facilitated recovery. Recognition was afforded to the key support person for preserving order during a perceived tumultuous time and maintaining communication with everyone; family, friends, (in some cases) the media and service providers.

“I just felt hopeless. Because I couldn’t support my family or do anything for them. Everything (was left) up to our eldest daughter. She did a wonderful job. Without her and my sister-in-law... they’ve done wonders. Kept the family all intact, let them know what’s happening. It was quite amazing.”

– Steven

All patients were concerned with the concept of carer burden, as often the key support person would have to assume the extra financial obligations, home responsibilities, carer duties, become the patient’s champion when dealing with service providers, and preserve the memory of events patients were often unable to recall due to analgesia and/or turmoil during the acute hospital phase.

Inadequate communication and information provision

The quality of patient care is improved when members of the healthcare team work in collaboration to share their patient care perspectives, yet many barriers exist that can obstruct a team-based system.^{15,16} While all participants were satisfied with the overall care they received during their admission and were highly appreciative of the pre-hospital and emergency care they received, all participants shared concern regarding communication during rehabilitation (in-hospital and at follow up clinics).

“The biggest problem was communication from day one. The ambulance were brilliant, the trauma team [emergency department staff] were brilliant and then it turned to custard, to put it politely. There just hasn’t been any follow up...”

– Karen

A lack of staff continuity also contributed to feelings of insecurity from being lost in the system, and unfamiliarity with staff contributed towards a perception of confusion as to who was caring for them and in what capacity.

“In the hustle and bustle of the weeks at hospital things got overlooked... you’d go through three or four shifts of nurses and think have any of them reminded (her) to do that.”

– Sibling, key support person

Reported lack of communication both in hospital and at follow up clinics, resulted in missed (minor) injuries, and some delays in treatment, which patients and key support people felt affected their confidence in the care received and recovery time.

Lack of preparedness for discharge

Communication surrounding discharge processes was described as a significant concern and the discharge process itself was felt to be *ad hoc* rather than meeting patients’ expectations of a meticulously considered practice. Almost all patients reported distress when medical staff sought discharge as they reported no prior discussions with them about going home. Discharge was generally required on the day and did not always acknowledge and address home conditions and the provision of discharge supports. Patients and key support people reported that discharge from hospital was perceived as stressful, and many felt ill prepared for discharge. All reported apprehension at the perceived lack of discharge planning. Key support people were alarmed at the thought of the responsibility of caring for their family member without adequate resources as they had expectations of being supplied with equipment, which may have been eased through referral to allied health to assist with discharge planning.

“There was a bit of... we’ll just push you out the door and you can go home ...because (my husband) wouldn’t have been able to look after me and there was the conversation of is there anyone at home that can look after you and I was like well not really ...if I’m in trouble he’s not really going to be there to help me out. I explained to them my house... is... old... and I’ve got pets, toilet outside, awkward little steps and stuff, and at that stage I was still sleeping sitting up in the hospital bed because I couldn’t lie flat, but they wouldn’t listen and discharged me anyway.”

– Tina

A further practical recommendation suggested by patients and their key support people was to ensure more specific discharge information and preparation is provided for patients and key support people during the hospital stay and before patient discharge from hospital.

Lack of coordination of post-discharge care

A consistent emerging theme was the sense of a lack of coordination of post-discharge care, and the absence of a consistent point of contact for ongoing management. Frustration at the lack of communication surrounding follow-up appointments was frequently expressed. Participants reported multiple appointments on multiple days of the week with physical, social and financial consequences. Patients commonly reported staff in outpatient clinics requesting regular follow up for them, but not receiving appointment invitations. This produced a lack of confidence in the current booking system.

“I think it was two appointments one day and the third appointment was about three days later. Because they were all in Hamilton, I did try and get them all on one day and it just wouldn’t work. It’s... extra travel and time. ...everything is based in Hamilton and that’s an hour’s drive, and yes ACC do pay for that but when you go an hour there, an hour back plus the appointment it’s actually a big chunk out of the day.”

– Belinda

A further practical recommendation suggested by patients and their key support people was that travel to follow up appointments could be avoided through the use of a virtual trauma clinic, where possible. Patients and key support people believed this would reduce much of the disruption and the tangible and intangible costs associated with attending clinics.

Discussion

This study is the first to provide a detailed description of patient experiences following serious injury and admission to Waikato Hospital. It highlights perceived issues and limitations in the patient care pathway following serious injury, especially relating to access to psychosocial services, the high level of reliance on key support people, inadequate communication and information provision and a lack of preparedness for discharge and coordination of post-discharge care. Despite significant issues with parts of the transition process, most patients emphasised the high quality of care and empathy provided by in-hospital services during their admission phase of care.

Several limitations of the study are noted. Complete exclusion of AIS body region one (head/neck) limited the number of eligible participants. Service provider perspectives were not fully explored as only a single participant from this group was nominated, which reinforced patient perceptions regarding lack of coordination of post-discharge care. The sample size limited the ability to explore emerging concepts seen in smaller patient subgroups, including perceptions regarding cultural responsiveness. A larger study would provide the opportunity to explore additional emerging themes more thoroughly. The study was limited by sample size through its focus on adult patients managed at Waikato Hospital (where most major trauma patients are managed), which may not reflect the wider, less severely injured patients in the MTS population. Nevertheless, saturation occurred for the key themes described in this study, and patients felt very strongly that these should be disseminated widely with a view to promoting system improvements. Due to the inclusion criteria, the difference in experience between patients managed by anatomically-oriented surgical services in comparison with the dedicated Trauma Service at Waikato Hospital was not assessed. Along with improvement of specific services such as psychological counselling, it is likely that more widespread adoption of the continuation of care model used by the Waikato Trauma Service could improve consistency across all discharging services in the delivery of information and clinical care in the transition to the community. The continuation of care model has been reported to improve patient outcomes by coordinating timely access to appropriate care through improved coordination and communication between multidisciplinary staff which can be overseen by trauma coordinators. Length of hospital stay may also be reduced through timely discharge and communication with onward support services. Furthermore, length of time spent in more costly higher dependency settings may be reduced through timely transfer of care.¹⁷

Most patients expected a single point for communication and advocacy; a person or a service who would take responsibility for meeting needs, although there were

mixed reports as to which service provider should hold responsibility of this. General practitioners were generally not thought of as first points of contact and while some patients stated the cost of GP consultations was more than they could afford, most patients expected ongoing assessment by treating staff from the hospital. Patients often reported ongoing health concerns but had no knowledge of who to report it to and whether they should; they expressed apprehension when needing to report symptoms previously raised with medical staff, leaving patients with perceived uncertain medical diagnoses. While not uncommon,¹⁸ the impact of suboptimal handovers at hospital discharge on the patient experience and potentially avoidable hospital readmissions¹⁹ warrants further investigation to ensure system level improvement occurs such as the use of ISBAR—introduction, situation, background, assessment, recommendation—to guide a clinical handover to primary care rather than the provision of a discharge summary, which may be perceived as an administrative process only.

Confidence was lost with outpatient clinics as patients were promised regular engagement and, in some cases, failed to receive appointment bookings. The lack of staff continuity in follow-up clinics also contributed to this, as patients wanted review by staff familiar with their injuries. Bookings were felt to be made irrespective of the inconvenience this may cause with multiple appointments on multiple days; satellite clinics or virtual clinics appear not to be offered or explored but were suggested by patients to support follow-up care. Most patients perceived a sense of isolation and lack of psychosocial support, turning to their key support person for assistance. This caused anxiety for all patients, who felt that ongoing physical and emotional assessments should be an essential part of treatment for a patient with serious injury, including engagement with psychological or counselling services from the earliest reasonable point following admission. These issues were exacerbated when patients themselves

were key support person for other more seriously injured family members.

The key support person was crucial to the patient and their recovery, which is a common finding.²⁰ With deficiencies perceived in counselling assistance from in-hospital and post-discharge service providers, the key support person would often be the only avenue for patients to receive emotional care. Additionally, the key support person became the only link to a social network system, travel means and financial support. Most patients were concerned about the burden transferred to their key support person and chose to be interviewed with their key support person in attendance; it became evident that the patients relied upon the key support person for recall of events. Without recording events, recollection of much of the recovery was vague for some patients due to an intensive care stay, analgesia, and the turmoil surrounding an admission with an acute injury. Immense gratitude was expressed regarding support from key support people during the hospital stay and post discharge care. The altruism of all participants was evident through the concern expressed for other patients who may not have the care of a key support person, with patients describing the central role of the key support person in orchestrating discharge supports and coordinating appointments.

Surviving a traumatic event resulting in serious injury is a time of chaos and confusion for patients and their key support people. Inadequate communication from staff during the in-hospital phase about what to expect following discharge, especially links to community health and social services, adds to this predicament significantly. Once patients and their key support people adjust to the initial impact of the traumatic event, further adjustments are required to manage the ongoing effects of the event such as the physical and emotional concerns and financial pressures. Key support people are the single largest factor in facilitating patients' recovery from serious injury yet are left significantly unsupported.

In summary, this study identified several possible areas for improvement to service delivery following serious injury, specifically:

1. the review of service provider communication and service delivery processes and practices in co-design with former patients and key support people, particularly in relation to information sharing and discharge planning;
2. the establishment of trauma navigators (specific trauma discharge planners), for patients not admitted under a trauma service, to assist with the provision of more holistic, integrated care;²¹⁻²³ and the use of ISBAR (introduction, situation, background, assessment, recommendation) to guide a clinical handover to primary care rather than the provision of a discharge summary, which may be perceived as an administrative process only;
3. focused service improvements to support early screening for psychological trauma and facilitation of early engagement with psychological, counselling and social services that extend from hospital to community-based services to improve outcomes for patients and whānau;²⁴
4. review of post-discharge assessment and follow-up services, including the use of virtual multi-disciplinary clinics linked to expert helpline services to assist with capacity for ad hoc support from an informed, single-point-of-contact, post-discharge service;²⁵
5. engagement of ACC and GPs in redesign of the information exchange and follow-up processes;
6. increasing the visibility of carer burden to community service providers to aid the development of effective carer-support services; and
7. the application of comprehensive trauma care and discharge planning methods currently employed by specialised trauma services to surgical service discharges of all trauma patients.

Although undertaken in the Waikato region of New Zealand, opportunities for improvement may apply to other healthcare contexts.

Appendix

Interviewer prompts used in semi-structured interviews with patients treated at Waikato Hospital following serious injury

About the injury

- Briefly describe the event and the resulting injuries.

Treatment of injury

- Was St John/Helicopter service involved at the scene?
- How do you feel about the care you received?
- How could the treatment you received be improved?
- How do you feel about the care you received in hospital?
- How could the treatment you received be improved?

Hospital-based care

- How do you feel about the communication you received?
- Describe the discharge planning/process?
- What follow up clinic appointments were arranged for you?
- Have these changed over time?
- Are the services and treatments meeting your needs?
- How do you feel your cultural needs have been met following your injury?
- How could this have been improved?

Post discharge care

ACC participants

- How do you feel about the care you've received from ACC?
- Is there anything you feel could have been done differently by ACC regarding your recovery?
- Can you tell me about any rehabilitation assistance?
- Did these services meet your needs?
- Are there any improvements that could be made?

Private health insured participants/another insurer

- Did you make a claim with your private health insurer for your injury?
- Can you tell me about your experiences with your health insurer since your injury?
- Is there anything you feel could have been done differently by your health insurer to help your recovery?

Work life/finances

- What impact did the accident have on work life?
- If you have returned to work, did you need clearance from a health professional?
- Were you ready to return to work?
- Did this involve a return to work program?
- Can you tell me what impact the accident had on you financially?
- If you weren't provided with financial compensation from ACC, did you seek assistance from other means? Eg, family, bank, Work and Income NZ
- What financial costs have you had as a result of the injury?
- What costs weren't covered by ACC?

Home life and relationships

- What impact has the injury had on your home life?
- Can you describe any disruptions that occurred?
- Has the injury affected your relationships with friends or relatives in any way?

Transport

- Have you had any transport issues since the accident?

Health

- What impact has the injury had on your general health?
- Probe: Memory, fatigue, decreased mobility.
- Are these ongoing since the accident?
- What has helped you recover the most?
- What has made it harder to recover?
- How do you think you're coping emotionally?
- Probe: Have they sought counselling/psychological assistance?

Perception of recovery

- How well/quickly do you feel that you have recovered?
- How do you think the injury will impact on your future?

Competing interests:

Nil.

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