

Patient and clinician perceptions of blunt chest trauma management and recovery: a qualitative study

Blunt chest trauma recovery

Research article

ABSTRACT

Purpose: To explore patient and clinician perceptions of blunt chest trauma management and recovery, when discharged directly home from the Emergency Department (ED).

Methods: This was a qualitative study, completed in a trauma unit in Wales. Blunt chest trauma was defined as an isolated blunt injury to the chest wall, resulting in bruising or rib fractures. Data collection involved semi-structured telephone interviews and focus groups with patients and clinicians respectively. Data analysis was completed using reflexive thematic coding.

Results: 12 patient interviews and three focus groups (23 clinicians) were conducted. In the interviews, seven males and five females participated, with a mean age of 54 years (range 28-74). Clinicians included nurses, doctors and therapists. Two main themes emerged; 1) the ED experience, and 2) recovery once home; each with a number of sub-themes. Results highlighted the significant impact of pain during recovery, and that there is a disjuncture between organisational perspectives of clinicians, and the individual personal perspective of patients.

Discussion: Recovery from blunt chest trauma for patients discharged directly home from the ED is a challenging and complex process. Protocol-driven care does not always lead to good patient experience, as it focuses primarily on hospital services and resources.

Keywords: Blunt chest trauma; Patient perceptions; Clinician perceptions; Recovery; Management

INTRODUCTION

Most patients in the UK with lower acuity blunt chest trauma, are discharged directly home from the Emergency Department (ED) with no follow-up care.[1] Clinicians are traditionally taught that the pain and disability of rib fractures resolves in six to eight weeks.[2] On discharge, current practice is to provide the patient with self-management guidance, usually in the form of a paper leaflet.[1,3] This advice will mainly include information on analgesia,

chest physiotherapy (deep breathing exercises and coughing) and activity or exercise. There is no universal agreement on the content or format of a standardised guidance document.

Two qualitative studies have explored the recovery process in patients with higher acuity blunt chest trauma who are admitted to hospital.[4,5] Claydon et al (2018) reported that pain and shortness of breath were the key factors impacting daily life of patients with traumatic multiple rib fractures.[4] There was a belief by participants that there was nothing that could be done to help rib fractures, which contributed to people lowering their expectations of achieving a full recovery and developing a sense of “making do”. They further concluded that rib fractures are not only painful, but also frightening for the patients.[4]

Baker et al (2021) explored the challenges associated with recovery from blunt chest trauma from hospital admission up to six-months post-discharge, concluding that the experience of pain and challenges associated with analgesic management was an obstacle throughout the whole recovery process.[5] Baker et al (2021) also reported that clinicians should be aware of the need for effective communication and strategies for building therapeutic relationships with patients who are scared, experiencing extreme symptoms such as pain and difficulty in breathing.[5]

To date, limited research exists that explores recovery from lower acuity blunt chest trauma, when discharged directly home from the ED, either from a patient or clinician perspective. A recent longitudinal, observational study incorporating analysis of linked datasets demonstrated a significant increase in healthcare resource utilisation by patients with blunt chest trauma discharged from the ED without hospital admission, in the 12-week post-injury period compared to the 12-week pre-injury period.[6] In order to further understand this recovery process, the aim of this qualitative study was to explore patient and clinician perceptions of blunt chest trauma management and recovery, when discharged directly home from the ED.

METHODS

Study design

A qualitative methodology was selected in order to explore participants' experiences of recovery from blunt chest trauma and facilitate an exploration of differences and similarities between those of patients and clinicians. Blunt chest trauma was defined as an isolated blunt injury to the chest wall, resulting in bruising or rib fractures. Semi-structured telephone interviews were used with patients, and semi-structured focus groups with clinicians.

Ethical approval for the patient interviews was obtained from Research Ethics Committee Wales 4 (REC Reference: 23/WA/0065). All participants have given informed consent to participate in this study.

Study setting

This study was conducted from June to December 2023, at a Trauma Unit in Wales, UK. The hospital has both an ED and Minor Injuries Unit (MIU), serving South West Wales. There are approximately 50,000 presentations to its ED annually, of which over 1200 are patients with blunt chest trauma.

Study sample and recruitment

Patient participants with blunt chest trauma, were recruited and consented by clinical staff at the time of their ED presentation, where a telephone number or email was obtained for patients who indicated that they were willing to participate in a research interview. It was agreed that the researcher would contact the patient to arrange the interview four weeks post- ED attendance, as the interview would explore the recovery experience and to have sufficient distance to be able to reflect on their experiences. A purposive sample of 15 patients was identified pragmatically, using guidance that discourages the use of data saturation,[7-9] and to allow for potential attrition at follow-up contact. This sample size was also considered within a sampling framework, which was developed to achieve sufficient diversity in a range of demographics, including age, sex, injury mechanism, injury severity, baseline functional status[10] and frailty (assessed using the Clinical Frailty Score, which is a well-validated, 9-point scale (ranging from a score of 1 meaning very fit, to 9 meaning terminally ill) that provides a summary tool for clinicians to assess frailty and fitness based on their clinical judgment and evaluation of a patient).[11] Participants were people aged 18 or more, who had sustained blunt chest trauma and were not being admitted to hospital from the ED. Participants with concurrent injuries or otherwise unable to participate in an interview were excluded.

A purposive sample of 30 clinicians were approached via email or during departmental staff meetings, to participate in the focus groups. A pre-designed sampling framework was used in order to ensure a representative sample of clinicians, considering; profession, years of experience managing patients with blunt chest trauma and site of work (main ED or MIU). A topic guide was used for the semi-structured interviews and focus groups, developed in conjunction with the study patient and public involvement (PPI) members and using previous research.

Data collection

Interviews were conducted and recorded over the telephone by CB at four weeks post-discharge from the ED, on a pre-agreed date and time. Clinician focus groups were conducted and recorded using TEAMS, facilitated by CB (an experienced, respiratory clinical academic physiotherapist, specialising in the management of patients with blunt chest trauma, but had no involvement in the care of the study patient participants). Participants were asked to confirm their consent to participate at the start of the interview or focus group, including permission to audio-record, and then encouraged to consider each of the interview topics openly. At the end of each topic, CB summarised the main points raised in order to confirm that the participants' comments had been correctly interpreted. This also allowed participants to add further comments as they considered appropriate. Interviews were transcribed verbatim by a professional transcription service, then transcriptions were reviewed with audio to ensure accuracy. Participants were allocated a pseudonym to ensure anonymity.

Data analysis

Reflexive thematic coding was used for the data analysis in this study[7,8]. The thematic coding process used in this study followed a six-stage approach described by Braun and Clarke[8]: data familiarisation, generating initial coding, searching for themes, reviewing themes, defining and naming themes and finally writing up the findings. Analysis was conducted through the exploration of patterns within the data, whilst allowing for the development of emergent themes.[7,8] Hard copies of interview and focus group transcripts were coded by hand, generating mind-maps with corresponding verbatim quotes, codes, subthemes and themes, as they were developed. A log book of the analysis process was used to ensure transparency of the analysis process. Initial data analysis was undertaken separately by both CB and HT. This was followed by an in-depth discussion between CB and HT. Further discussion around definitions of these codes, subthemes and themes was conducted between CB and CO'N, leading to the final names and definitions.

In order to maximise trustworthiness, both field and reflexive notes were maintained throughout data collection and analysis. This provided a transparent record of any relevant thoughts, conceptions and reflections that may have influenced the study. Study participants were made aware of the interviewer's clinical background prior to the interview or focus group, and reassured that they could speak freely about any aspect of management. CB discussed interpretations made during data analysis with the research team and a small sample of participants (both patients and clinicians) in order to maximise trustworthiness.

RESULTS

A total of 12 interviews were completed, as follow-up contact was not achieved with three patients. Seven males and five females participated, with a mean age of 54 years (range 28-74 years). Variation in injury mechanism, injury sustained and degree of pre-injury frailty was achieved. Table 1 highlights the characteristics of the patient participants.

Table 1: Patient participant characteristics

A total of 23 clinicians attended one of three focus group meetings, including physiotherapists, occupational therapists, nursing staff, emergency medicine physicians and an anaesthetist, from both the ED and MIU. Years of experience managing chest trauma ranged between two and 26 years.

Themes

Two main themes emerged from the data collection; 1) the ED experience, and 2) recovery once home. Table 2 highlights the themes, subthemes and codes generated.

Table 2: Themes, subthemes and codes

Theme 1: The ED experience

Theme 1 described the experience of being managed in the ED having sustained blunt chest trauma. A number of associated subthemes were identified.

Subtheme 1.1: Helplessness in the ED environment

All of the patients discussed the ED environment, describing an overall feeling of helplessness, with a long wait time being the most common challenge experienced. A number of patients also reported that the lack of communication in the ED exacerbated the frustration associated with long waiting times.

[Sarah, 46] *“It’s the lack of communication, so basically you don’t know what is going on. I know it sounds stupid but you’re like, can I go and get something to eat or can I do something when you are there on your own it is difficult”.*

A number of the clinicians agreed that the ED environment is potentially challenging for management of patients. This was discussed however, in terms of the impact of the environment on their management, rather than the patients’ experience.

[CL04] *“How many patients there are in the ED and how short-staffed they are has an impact on our input. It can be chaos at the moment”.*

Subtheme 1.2: Making sense of the injury

Communication in the ED was further discussed in terms of patient assessment and management. Understanding the injury sustained was important to most of the patients, but several described ambiguity in the diagnosis they were given in the ED.

[Ben, 68] *“They just said they we’re all tender and – they said a word, I didn’t understand what it was. I cannot remember what they actually did say.”*

Not fully understanding their injury, resulted in uncertainty in some patients regarding advice given and what they should be doing to aid recovery.

[Mary, 55] *“I think they said, don’t cough properly as you can refracture them, as they are healing [the ribs].”*

In contrast, most of the clinicians appeared satisfied with explanations given to patients regarding their injury.

[CL03] *“I think we are explaining it well. We have had a lot of experience over the years”.*

Four patients described uncertainty about the decision not to complete a chest x-ray to aid diagnosis. There was a pre-conceived belief by some of the patients that a chest x-ray was a definitive component of the assessment for such a potentially serious injury. The fear of having sustained a serious injury appeared borne out from the severity of their pain experience.

[Jac, 37] *“They said it’s a soft tissue injury, no fractures, but I don’t believe that because the pain was so extreme. The pain was too much, too painful”*

The use of a chest x-ray was perceived as a way of validating the participant’s injury and the degree of pain experienced. The participants also felt that a chest x-ray would provide reassurance that returning to baseline functional status or employment was safe.

[Jac, 37] *“Doing an x-ray is important because you then feel more confident to do more if you know there is no fracture”.*

The importance of the chest x-ray to the patients in terms of injury validation or reassurance, was not considered by the clinicians, despite a number of them expressing a need to justify not using a chest x-ray as part of the assessment process.

[CL01] *“I explain that not all fractures are evident on chest x-ray and anyway, it won’t really change their overall management”.*

Subtheme 1.3: Patient care in the ED

When asked for perceptions of the overall management of patients in the ED, most clinicians appeared to be pleased with the improvements in care achieved over the last few years. The clinicians focussed on the benefits of using of the multi-disciplinary care pathway (protocol used in the ED to manage all aspects of care of patients with blunt chest trauma).

[CL12] *"I think we are managing it [chest trauma] in the ED very well at the moment".*

[CL13] *"I think the chest trauma patients are far better managed now than 10 years ago since the new pathway was introduced... there is a better awareness now which there wasn't at all before.*

One clinician however expressed a perception that there was too much emphasis in management protocols / care pathways on the older adult with frailty or the sedentary.

[CL08] *"My [relative] has recently been a patient in the hospital and it was an eye opener as to how much we in the NHS focus on the elderly and our advice is often tailored to sedentary individuals or those that can take time to recover, rather than people who need or want to get on with their lives"*

In contrast, when asked about perceptions of their overall care, most patients described their management in relation to their experience of pain during their time in the ED. A number reported not being offered any pain relief, and led to feelings of frustration and a loss of control.

[Glyn, 73] *"They didn't offer me any pain relief while I sat there, so the pain was just getting worse. I was just getting up and walking around the whole time just trying to ease it, but it didn't make any difference."*

Clinicians differed in their perceptions of pain relief provided in the ED, when compared to the patients. Overall, clinicians felt that pain relief was well-managed in the ED and if not, it was due to the patients.

[CL11] *"some people don't have that much pain relief given in the ED because they aren't complaining of pain because they aren't moving around".*

Two clinicians reported that patients' pain was generally well-managed unless the patient was not managed according to standard protocol and was waiting in an ambulance for ED admittance.

[CL21] *"I think location [ambulance versus department] makes a massive difference to how well their [the patients] pain is managed"*

It is standard practice for patients with blunt chest trauma to be provided with an advice sheet on discharge home from the ED. The advice sheet given by the ED regarding self-management of chest injuries was discussed by five patients, none of whom felt it particularly useful and beneficial in promoting self-care or a positive recovery.

[John, 45] *"I don't think it [advice sheet] said anything useful or specific other than breathing exercises, taking regular paracetamol."*

[Ryan, 28] *"I lost mine in the taxi home, it didn't say much anyway I don't think"*.

A number of the clinicians however differed in their opinion of the written guidance provided to patients.

[CL14] *"I think the leaflets in A&E are good. They [the leaflets] explain it all, pain relief and to cough every few hours"*.

Theme 2: Recovery once home

Theme 2 moved on to describe the different aspects of recovery once the patient is home following discharge from the ED. A number of associated subthemes were identified.

Subtheme 2.1: Pain experience

Pain severity in the first few weeks following their chest injury was discussed by all patients, with many describing it as the worst pain ever experienced. Most patients reported that they were shocked at the severity of their pain on simple, respiratory functions such as breathing, coughing and sneezing, and similarly on any movement.

[Sheila, 57]. *"If I coughed, oh my God, it was horrendous. It [the pain] is a nightmare... it is one of the most difficult things I have had to live with, to be honest"*.

[Sharon, 56] *"Oh, just to move. Raising my arms. Picking up things. Just even getting dressed"*.

For all patients, the severity of pain experienced in the first few weeks following their injury had the most significant impact on their sleep.

[Sharon, 56] *"I have been awake most of the night, as you do with fractures. It is the worst of the worst, just lying there"*.

Patients described however, how they had developed their own individual strategy for overcoming this impact, ranging from altering medication timing, to sleeping in a different position to their normal one, or using analgesic adjuncts such as heat packs or TENS.

[Glyn, 73]. *“Sleeping at night-time has been really painful. I slept upright in a chair for a few nights, which helped... That took me a couple of nights to realise actually, that would be the better thing to do... it’s a lot more comfortable”.*

All clinicians also discussed the pain that patients experienced following discharge, and an overall opinion expressed by clinicians that a lack of well-defined protocol was the main problem.

[CL19] *“The patients that are discharge home, I sometimes feel we are sending them into the abyss of weeks of pain”.*

[CL10] *“There needs to be a follow-up service... even if it was just there was a telephone ring-back”.*

Subtheme 2.2: Pain and higher level activity

Four of the patients described similar pain experiences with driving. They were initially frustrated with the severity of pain and inability to drive, leading to a loss of independence, but had found methods to overcome this.

[John, 45]. *“I tried not to drive as much... but then I used my partner’s car, as I am right-handed anyway, yeah, for changing gears you know.”*

Problems experienced with driving was not discussed by any of the clinicians in relation to their perceptions of recovery from blunt chest trauma. Three clinicians did discuss the impact of not participating in sporting activity on patients. Four patients also identified the importance of restarting their hobbies, including singing in a choir, gardening, mountain-biking and other sporting activities. Patients reported modifying their return to hobbies, rather than not participate at all.

[Ryan, 28] *“I just stood there [coaching rugby] and shouted instructions, instead of being hands on and rather than getting involved.”*

[Jac, 37] *“To be honest, I have started trying [to run] again, cos I was conscious I was getting a little bit porky”.*

Subtheme 2.3: Pain relief

A number of patients reported that the pain relief given by the ED on discharge home did not improve their pain experience. The participants described frustration at not only having to source their own analgesia, but also stronger analgesia. There appeared to be a general feeling of being undertreated by the clinicians in the ED.

[Ryan, 28] *"I went and bought co-codamol from the pharmacy 'cos I wasn't given anything else apart from paracetamol"*.

A number of the clinicians also reported feeling like they did not offer sufficient analgesia to the patients going home.

[CL15] *"We give them a box of co-codamol and anti-inflammatories and tell them it is going to be sore for a couple of weeks. I definitely think we could do better"*.

Different reasons for this were discussed, with general agreement that different patients react differently to the same injury, so prescribing analgesia wasn't straightforward.

[CL09] *"You could have someone with one rib fracture who is in immense pain and you can have someone with five [rib fractures] who is absolutely fine. So I think it is difficult to get the protocol right."*

Subtheme 2.4: Impact on family

Six of the patients commented on the value of other family members at home for undertaking simple activities of daily living. They expressed a feeling of relief, as they felt they couldn't have coped without that support.

[Sarah, 46] *"...a partner at home... certainly made things a lot easier for me, my washing, my cleaning etc... it would have been far more difficult otherwise"*

Two clinicians offered an alternative perspective however, suggesting that some patients managed better without help at home.

[CL23] *"Some [patients] go home and sit and don't do much as everything is being done for them and that is worse. I don't know if it is better sometimes not having support, because then you have to get on"*.

Being unable to carry out normal (pre-injury) caring responsibilities was also a source of frustration and stress for a number of patients. These difficulties in caring responsibilities included caring for dogs, young children, older parents.

[Mary, 55] *"It [the injury] was extremely debilitating... because I help looking after my dad since we have lost my mum. And you know, having to do everything"*.

A number of the clinicians felt patients with caring responsibilities were more likely to manage better at home, due to the need to mobilise and keep active.

Subtheme 2.5: Employment

Five clinicians also described how those patients who were self-employed, due to a lack of paid sick-leave, were more likely to manage better once at home.

[CL20] *“Self-employment is a big issue. That’ll impact how the patient behaves as they don’t have a choice, they have to get on”.*

Returning to work was identified as an important for some of the patients. Three participants described how they were able to negotiate with their employer either working from home, undertaking ‘light duties’ and adapting in their own way, until able to return to work fully.

[Sarah, 46] *“I was [off work], but then I got the opportunity to work from home... so I’m basically lying down working with my laptop on my chest”.*

[Sheila, 57] *“I’ve got a heavy job, I’m a carer. I take paracetamol with me, I take it before work and I’m taking pain relief as soon as I come home”*

Not being able to return to work for three other patients resulted in feeling of frustration at letting other people down.

[Ryan, 28] *“There’s a lot of work that needs doing and I don’t like leaving my colleagues in the lurch really”.*

Subtheme 2.6: Managing expectation

Three clinicians agreed that patients were often surprised by the severity of pain and the impact this has on function.

[CL16] *“I think the public perception of chest trauma is that they have a couple of rib fractures so as soon as they are sent home they have this expectation that they should just get on with it [normal activity].”*

A number of clinicians also suggested that the pain experienced by patients was due to them not mobilising enough.

[CL06] *“A lot of the patients just go home and take to their beds, and that isn’t going to help their pain improve.”*

Acceptance of the injury and understanding that there isn’t a great deal that can be done to accelerate the recovery process was used as a strategy by a number of patients. This acceptance appeared to be gained from both the ED clinicians’ advice, and a personal understanding of the injury recovery process.

[Sheila, 57] *"I just managed myself on pain relief as I don't think there is anything else you can do really with a cracked rib... there is nothing much they can do for that type of injury anyway".*

Most clinicians described how they would attempt to guide a patient towards an acceptance that the injury will be painful and debilitating for a period of up to six weeks, but with an emphasis on not wanting the patient to re-attend the ED, or even a complaint.

[CL22] *"You have to manage that expectation because you don't want them coming back to the ED just because it is painful... it's a tricky one".*

DISCUSSION

Previous research has explored patient perceptions of recovery from blunt chest trauma that requires hospital admission[5], and recovery following major musculoskeletal trauma.[12-14] This is the first qualitative study to consider the cohort of patients with specifically blunt chest trauma, that are discharged directly home without hospital admission. It is also the first study that considers both patient and clinician perceptions, exploring similarities and differences between the two groups. There was an apparent disjuncture between patient and clinician perspectives of management and recovery from blunt chest trauma, which may reflect the opposing standpoints of both groups. Patients presented the individual perspective, compared to the clinicians who presented the organisational perspective. Research has highlighted that an organisational perspective is protocol driven, focused on delivering evidence-based care, which the patient neither knows nor understands.[15,16]

Two main themes were identified in this study; the experience in the ED, and the period of recovery following discharge home. Patients and clinicians clearly viewed the overall management in the ED differently. Patients described many personal challenges experienced, in contrast to most of the clinicians whose main focus was how the various components of the chest trauma care pathway were well implemented in the ED. An example of this is the use of a chest x-ray during the assessment. It is well-recognised by clinicians that not all chest trauma requires an x-ray, due to the inability to only identify approximately 50% of rib fractures.[17] Most patients however were relying on the chest x-ray findings for either validation and / or reassurance. Another example is the provision of an advice sheet to patients on discharge from the ED. This was part of the management protocol that clinicians described being appropriate and useful, however most patients felt the resource was unhelpful. This obvious discord provides an opportunity to improve care in the ED, simply by listening to the patient's reported experience.

The period of recovery following discharge home from the ED was the second theme. A recent narrative review has highlighted that blunt chest trauma is associated with substantial sequelae that impacts on all aspects of daily functioning[18], which the findings of this study supported. Patients and clinicians appeared to agree that pain following blunt chest trauma was not well-managed in the community setting. For many of the clinicians, this was due to the lack of inclusion of follow-up services on the current care pathway used in the ED. Most clinicians also described having a lack of knowledge about what community-based services (provided by the hospital) were available for the patients following discharge, and relied on primary care services to provide ongoing management.

It was interesting that one clinician felt care in emergency care had become over-protocolised, with too much emphasis on the older adult with frailty and the sedentary. This supports the more recent emphasis on the need for person-centred care, which recognises people's capabilities and potential to manage and improve their own health, and not seeing them simply as victims of disease or passive recipients of care. Patients want to manage their own recovery, therefore care should be tailored to ensuring they acquire the knowledge and confidence to achieve this independence.[19] Claydon et al (2017) also concluded that individuals considered rehabilitation and recovery following major orthopaedic trauma to be their own responsibility, however in order to achieve this, they needed expert help.[14] This may suggest that experience of injury and recovery could be improved, if patients are better reassured in the ED that their severity of pain is normal and to be expected, and are better educated regarding the need for pacing activity, rest and reliance on others for a period of time. This supports the previous work of Baker et al (2021), who also reported a need for effective communication at a time when patients with blunt chest trauma are in pain and frightened.[5]

The main strength of this study is that it explores both patient and clinician perceptions of the recovery from blunt chest trauma, in patients discharged directly home from the ED, without hospital admission. The findings provide clinicians with an insight into the recovery of patients with milder severity blunt chest trauma, who are usually not provided with any follow-up care, and little is therefore known or understood regarding patient experience. As a result, a number of opportunities for improvement in patient care are presented.

There are a number of study limitations that should be considered. Due to the single centre design, no diversity in geographical location was achieved, thus limiting external validity and generalisation. The data collection in this study was undertaken by one author as part of a research fellowship, which may have impacted the validity of study findings. Other members of the research team however were involved in the process classifying codes, subthemes

and themes, to enhance rigour in the analysis process. Participant recollection should not have impacted the study findings, as patient interviews were conducted after four weeks. Therefore the assumption has been made in this study that the patients' recollections accurately reflects their experiences. During the data collection and analysis processes, field notes, reflexive notes and a log book were maintained in an attempt to provide a clear record of relevant researcher thoughts and decisions made during study completion.

CONCLUSIONS

It is evident that recovery from blunt chest trauma for patients discharged directly home from the ED is a challenging and complex process. There is a disjuncture between the organisational perspective of clinicians, and the individual personal perspective of patients. This study highlights how protocol-driven care does not always lead to a good patient experience, as it focuses primarily on hospital services and their resources. It can be concluded that both patients and clinicians have knowledge of blunt chest trauma recovery, and this combined knowledge can lead to an opportunity to improve clinical practice. These findings provide the clinicians caring for this patient group with an understanding of the recovery processes experienced on discharge directly home from the ED, to aid decisions as to which patients may benefit from a follow-up contact.

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Table 1: Patient participant characteristics

Pseudonym	Age	Sex	Injury mechanism	Injury sustained	Baseline functional status
001 Ben	68	M	Fall from standing height	1 x rib fracture	CFS 2
002 Mary	55	F	Fall from standing height	1 x rib fracture	CFS 3
003 Jac	37	M	Fall from >2m	2 x rib fractures	CFS 1
004 Sarah	46	F	Fall from >2m	No CXR	CFS 2
005 Betty	74	F	Fall from standing height	1 x rib fractures	CFS 2
006 Tom	49	M	Sporting injury	2 x rib fractures	CFS 1
007 Glyn	73	M	Fall from standing height	1 x rib fracture	CFS 4
008 John	45	M	RTC	4 x rib fractures	CFS 1
009 Sheila	57	F	Fall from standing height	1 x rib fracture	CFS 2
010 Sharon	56	F	Fall from >2m	Chest wall bruising	CFS 4
011 Marc	62	M	Fall from standing height	2 x rib fractures	CFS 2
012 Ryan	28	M	Sporting injury	1 x rib fracture	CFS 1

CFS: Clinical Frailty Score[11] is a well-validated, 9-point scale (ranging from a score of 1 meaning very fit, to 9 meaning terminally ill) that provides a summary tool for clinicians to assess frailty and fitness based on their clinical judgment and evaluation of a patient.

Table 2: Themes, subthemes and codes

Theme	Subtheme	Codes
1. The ED experience	1.1 Helplessness in the ED	Waiting in the ED
		Communication in the ED
	1.2 Making sense of the injury	Understanding the injury
		Understanding the advice received
		Chest X-ray and injury validation
	1.3 Patient care in the ED	Pain management in the ED
		ED management long-term conditions

		ED management advice sheet
2. Recovery once home	2.1 Pain experience	Pain associated with respiratory actions
		Pain associated with movement
		Pain and managing sleep
	2.2 Pain and higher level activity	Returning to driving
		Hobbies and interests
	2.3 Pain relief	Analgesia following ED discharge
	2.4 Impact on family	The value of help at home
		Caring responsibilities
	2.5 Employment	Returning to work
		Letting other people down at work
	2.6 Managing expectation	Acceptance of the injury and necessary recovery process