

Learning from minor injury care restructure during the COVID-19 pandemic: a phenomenological study of orthopaedic clinical leaders

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ABSTRACT

Background During peaks of the COVID-19 pandemic, trauma and orthopaedic departments in England have been asked to support emergency departments by providing first contact care for minor injuries. The subsequent requirement for departmental restructure has resulted in a variety of service pathways across the country. This study aimed to explore the experiences of different clinical teams and identify any consistent themes or reflections, which could be applied to continuous improvement of minor injury care.

Methods Using a phenomenological approach, nine semistructured interviews were conducted with trauma and orthopaedic clinical leads across England whose departments provided support to minor injuries service. Detailed transcripts were then analysed to identify themes for discussion. Interviews were conducted via video conferencing in November 2020 at the end of England's second national lockdown.

Results Each of the nine orthopaedic departments provided support for minor injuries, six of which involved creating a new unit. Themes included the value of collaborative working between the emergency department and orthopaedic staff across multiple professions and the benefit to patients of early definitive decision making. A common theme was reduced barriers to change during the pandemic. Examples of long-term service improvements triggered by the pandemic focus on pathways to enable consultant to provide early opinions for injured patients.

Conclusions A range of experiences have demonstrated themes in reflection from service leaders. Departments across the country should be encouraged to consider what improvements to their own service may be applied long term. Resource limitations, staff well-being and education must all be considered.

INTRODUCTION

The COVID-19 pandemic has seen a large-scale restructuring of many National Health Service (NHS) services.¹ In the early stages, hospital specialities were asked to increase engagement with emergency departments (EDs) to assist with the expected surge in demand. On 22 March 2020, the British Orthopaedic Association (BOA) published guidance on the management of orthopaedic conditions during the pandemic.² This was revised on 20 April 2020 and again on 8 January 2021 in response to significant pressure on the health service across the country.

As part of this national guidance, trauma and orthopaedic (T&O) departments were advised to

deliver an emergency trauma clinic for patients attending with a minor injury. All patients requiring immediate attention (eg, joint relocations) should remain in the ED but be managed by the T&O team. All locations treating minor injuries including EDs, minor injury units (MIUs) and urgent treatment centres had to review how best to continue to provide their services in an environment of persistent uncertainty. This reconfiguration was also happening in tandem with ED reorganisation to manage COVID-19 patients, minimise risk to COVID-19-negative patients, ensure staff safety and maintain departmental flow.³

The national advice published in March 2020 was accompanied by a nationwide cessation in non-urgent care amidst preparation for an anticipated surge of hospital and intensive care admissions. Despite the resulting availability of staff, complex system reconfiguration still posed a significant challenge and was executed differently across the country.

We found no reports in the literature demonstrating multicentre analysis of minor injury care following the publication of BOA guidance. However, individual UK centres have published details of their orthopaedic service reconfiguration including details of support for minor injuries.⁴⁻⁹ Consistent themes are noted including the importance of good departmental leadership, communication throughout a team and strong consultant presence. The NHS Change Challenge website¹⁰ has also provided a platform for individuals to publish details of their own innovations specifically in providing urgent and emergency care to allow other units to learn from their experiences. Users may comment and subscribe in an innovative platform that encourages rapid information sharing without the lengthy process of journal publication.

This study sought to explore the experiences of orthopaedic department leadership in the management of service reconfiguration to support minor injuries. We hoped to explore the reflections of the experience of rapid policy changes, impacts on the service delivered and any long-term improvements that have been sustained with the gradual efforts to return to routine working.

METHODS

We aimed to design a qualitative study to explore the experiences and reflections of orthopaedic clinical leaders and opted for a phenomenological approach as used by Walton *et al* in their study of ED restructure.³



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We undertook semistructured interviews with T&O department leads across England between 23 November and 3 December 2020. Purposeful sampling was used to identify participants with publicisation to members of the British Orthopaedic Directors Society. Prior to commencing interview, participants provided verbal confirmation that they were happy for information discussed to be used for publication. Nine interviews were conducted providing range in geographical location, impact from COVID-19 and departmental structure. Due to evolution of the ongoing pandemic, the study period was kept short to retain consistency, and participant availability during this period was prioritised. All interviewees were part of orthopaedic departmental leadership although with different job titles consistent with local norms. Most were either clinical director or clinical lead for trauma or orthopaedic care.

Each unit's approximate size was also recorded from publicly available data, to give context to individual circumstances. Measures included catchment population, typical emergency presentations, number of peripheral MIU associations and number of orthopaedic consultants. The impact of the COVID-19 pandemic was also approximated by observing minor injury presentations during the period of support.

Interviews were conducted one-to-one by one author (SG) and followed a semistructured format, based on a template agreed by all authors prior to commencing the study. All interviews took place in one sitting over either telephone or video conferencing given social distancing restrictions. Each interview included three parts:

- ▶ Part 1: Description of structure of orthopaedics and minor injuries services prior to the pandemic including referral pathways for minor injuries.
- ▶ Part 2: Details and duration of support for minor injuries provided by the orthopaedic department.
- ▶ Part 3: Reflections on the experience and any longer-term measures in the context of ongoing pandemic.

Summarised interview transcripts were noted and subsequently reviewed by three authors (SG, DY and HW) to agree on key themes. None of these authors had any prior association with participants or their organisations and have not held departmental leadership positions allowing for an inductive approach to thematic analysis. Following familiarisation with discussion points from each interview, authors were able to agree on themes for presentation of results. Thematic redundancy was reached by interview five, but nine interviews were conducted in

total to ensure good geographical spread. No verified methods for either patient or staff feedback were used to allow wider unit participation, but anecdotal reports are included.

RESULTS

Table 1 shows a summary of included hospital trusts with additional data on catchment population and ED attendances from the Office for National Statistics⁴ and NHS England.⁵ All departments were involved in support for minor injuries in some form, and this was varied in nature. Table 2 demonstrates broad groupings in type of reconfiguration. Services provided support from multiple staff groups, including consultants and allied health professionals. In some cases, junior medical staff were also involved. However, this has not been the focus of this paper due to many being redeployed to whole hospital rotas outside the jurisdiction of orthopaedic clinical leads. The operating hours varied from 9:00–16:00 weekday clinic to 24 hours and 7 days a week injury unit staffed by orthopaedics.

Duration of redeployment also varied. All support services were set up on or around the week of the first English national lockdown—22 March 2020, the shortest ending by the end of May and the longest continuing until September. In the two cases, plastic surgery staff also participated in similar support services, but no other specialties were mentioned.

Following collation of part 3 of the interviews, several key themes emerged.

Crisis was a catalyst for change

Although none of the interviewed T&O departments were still maintaining the level of support offered in March, most reported significant changes in practice that will likely provide improvements for long term. The atmosphere across the health service during spring was one of energy and action. As a result, clinical leads reported feeling empowered to drive and support changes (see box 1). These included review of job plans, introduction of a virtual fracture clinic or creation of an ambulatory trauma assessment unit. One clinical lead reported introducing change 'overnight that had been years in the pipeline'.

None of the substantial service reconfigurations described had been reintroduced at the time of interview during the second wave of infections of autumn of 2020. However, the creativity that was borne from teams that were not pushed to their limit should be highlighted. Several departments spent time creating

Table 1 Hospital demographics* subdivided data on minors not available

Region	Trust catchment population ²² (rounded to nearest 100 000)	Type of ED	Number of peripheral MIUs	Number of T&O consultants	ED presentations April 2019 (minors) ²³ (rounded to nearest 1000)	ED presentations April 2020 (minors) ²³ (rounded to nearest 1000)	ED attendances Nov 2019 (minors) ²³ (rounded to nearest 1000)	ED attendances Nov 2020 (minors) ²³ (rounded to nearest 1000)
South West	600 000	Trauma unit	10	23	19 000 (12 000)	7 000 (4000)	16 000 (10 000)	10 000 (6000)
South East/London	400 000	Trauma unit	3	29	26 000 (5000)	10 000 (3000)	23 000 (9000)	17 000 (6000)
South East/London	1 000 000	Trauma unit	1	46	27 000 (8000)	10 000*	20 000*	17 000*
North East	300 000	Trauma unit	0	9	9000*	4000*	9000*	6000*
South West	1 000 000	Major trauma centre	2	34	11 000 (3000)	5000 (1000)	11 000 (3000)	8000 (2000)
North West	400 000	Trauma unit	0	13	7000 (500)	4000 (200)	7000 (700)	6000 (500)
North East	300 000	Trauma unit	1	21	14 000 (10 000)	6000 (4000)	15 000 (11 000)	10 000 (7000)
South West	200 000	Trauma unit	4	18	11 000 (5000)	4000 (500)	11 000 (4000)	7000 (2000)
North West	1 000 000	Major trauma centre	0	41	9000*	5000 (200)	14 000 (4000)	7000 (500)

*s in the table where no bracketed number is available.

ED, emergency department; MIUs, minor injury units; T&O, trauma and orthopaedic.

Table 2 Types of minor injury support provided by orthopaedic teams

	Minor injury pathway	Staffing	Triage	Number
1	Minor injury unit set up in redundant orthopaedic space, for example, outpatient clinic or day case surgery unit	Staffed by orthopaedic outpatient staff±ED staff	ED front desk redirection or ED triage first	4
2	Use of redundant elective hospital to take all injured patients	Staffed by elective orthopaedic staff±supporting trauma staff	Triage by ambulance service or 111	1
3	T&O consultant with juniors or allied health professionals allocated to be present in ED	Direct contact/collaboration with ED staff	ED triage	2
4	Additional nominated consultant based in outpatient clinic for urgent injuries	Outpatient nursing staff	ED triage	2

ED, emergency department; T&O, trauma and orthopaedic.

support materials and protocols for ongoing use in MIUs. Others spent additional time with their colleagues to share skills and knowledge. One junior doctor created an app to enable more efficient access to senior decision making.

Box 1 outlines some of the interventions introduced by these departments, directly associated with their pandemic experiences.

Service reconfiguration is easy to start and difficult to stop

In all cases, planning and setting up of the reconfiguration were rapid. Some departments underwent substantial changes over a matter of days. Six of the nine interviewees were involved in the creation of a new minor injuries department that was separate from its prior location. This immense task included considerations of COVID-19 screening, personal protective equipment, staffing and skill mix, opening hours, triage, documentation systems and access to results. Facilities available needed to include relevant medication, wound management, facilities for minor surgery and manipulation, X-ray (with appropriate safety considerations) and plastering. Protocols needed to be agreed for pathways for patients entering and leaving the department and governance processes considered. All appeared to have achieved this by the end of March 2020.

A need for urgency meant that many of these considerations were overcome by using a location with many of the practical facilities already available including orthopaedic outpatients or operating theatre suite. This, by definition, required cessation for the normal services in these locations to resume. A clinical lead reflected that ‘trying to get things back to normal was the real battle’. All six relocated MIUs had returned to their original location and staffing at the time of interview in order for elective activity to restart. There was discrepancy in how easy department leads found the process in stepping down their support. Some reported the need to restart elective service was well supported by hospital management. However, others felt significant pressure to continue to the detriment of non-urgent care.

Box 1 Examples of long-term innovation

- ▶ Introduction of a virtual fracture clinic.
- ▶ Consultants released from other daytime activities when on call.
- ▶ Nominated clinic consultant for acute discussion of all cases during working hours.
- ▶ Development of app to enable consultant opinion for minor injury units and urgent treatment centres.
- ▶ Cross-specialty teaching with emergency department.
- ▶ Increase in on call team size to include allied health professionals and reduce time to review acute patients.

Multiprofessional cross-pollination occurs with collaborative working

Use and type of clinical practitioners are varied but, in most cases, a service reconfiguration resulted in closer working relationships between orthopaedic surgeons and ED practitioners. Leads reported a ‘cross-pollination’ of skills. Practitioners were able to develop improved knowledge of referral thresholds while building skills in fracture manipulation and suturing. Physiotherapists were able to expand their skills to include wound management. Surgeons were able to refresh skills in first contact assessment including safeguarding thresholds and provide early physiotherapy advice to reduce the need for recurrent hospital visits. One clinical lead commented, ‘we won’t ever go back from working alongside physios in fracture clinic—they are fantastic’.

Working closely with experienced outpatient plaster technicians was also reported to improve quality of primary plastering. Many centres reported that the experience was educational for junior doctors and practitioners of both orthopaedic and ED origins. Two departments have since set up cross-specialty teaching programmes to cover relevant conditions for both teams.

The benefit to patients of early senior decision making was unanimous

All clinical leads recognised the benefit to patients of immediate definitive management with subsequent reduction in hospital visits with or without pandemic. One summarised by stating the following: ‘We needed to try and keep patients out of hospital, and getting an early decision was the only way’. This was one area that featured most consistently in long-term service improvements (**box 1**).

However, most emphasised their own views (shared with their wider departments) that, although a good service was provided, this was not sustainable in long term. Many of the most effective interventions made use of staff and facilities that would not be available when normal service was resumed. Several departments made use of shielding staff by completing early telephone consultations at home or to act as an urgent helpline for peripheral MIUs. One clinical lead commented, ‘maintaining an unfiltered service was an inefficient use of resource long term’.

It is rewarding to provide quality service

Clinical leads reported high levels of staff morale towards the beginning of redeployment. One clinical lead reflected the following: ‘It really was an excellent service. Patients loved it. Staff loved it. Management loved it’. Orthopaedic staff were anxious to be useful, and minor injuries provided an application for a relevant skill set. In all cases, this early consultant involvement in care was well received by patients and this was associated with a sense of gratification felt at providing a quality

service. Many noted the reduced demand that is reflected in the statistics in [table 1](#). This reduction in service pressure was reported to improve the ability of team members to provide safe and effective care.

High levels of team buy-in appeared to be consistent across all types of support. However, over time, enthusiasm reportedly waned with eight out of nine departments reporting that teams would be reluctant to restart support at the same level if asked. Reasons for this included boredom with minor pathology; a feeling of wasted resource; and, most commonly, an anxiety to return to 'business as usual'. Ensuring an agreement on the finite nature of service reconfiguration appeared to result in sustained enthusiasm.

A good relationship with ED yielded smoother transitions

A consistent theme in relation to ease of starting or stopping a service was interdepartmental communications. Those clinical leads that worked closely or were part of the ED leadership team found fewer barriers to change. Emphasis on clear and open communication channels was made, in favour of success.

In addition, those teams where ED staff and T&O staff worked collaboratively reported improvements to the working relationship moving forward. Successful cross-specialty working included support for patients with medical problems in addition to an injury and use of unfamiliar computer systems. Those teams who were able to maintain a triage system by experienced ED staff also reported few unnecessary referrals.

DISCUSSION

Both the BOA and the NHS produced guidance^{2 11} at the start of the pandemic to aid orthopaedic surgeons to direct their skills most effectively. More recently, the BOA has updated and reiterated their advice (January 2021) to provide ongoing support in response to the pressure of the third wave. National guidance¹² and literature foci published during summer of 2020 surround the restart of elective activity and advances in video consultation. However, no formal advice is yet in place to demonstrate thresholds for sustaining formal orthopaedic support of minor injuries as peaks of infection wax and wane. In the examples described in this paper, local leadership has responded with step-downs of support in order to respond to the ongoing developments. Differences in department size and structure, number of sites and overall pressure of admissions have meant that experiences for orthopaedic clinical leads have varied across the country. This will continue to be the case as the pandemic progresses, and individual trusts will continue to have to rearrange their services to support the needs of their population at a given time.

Orthopaedic clinicians have been redeployed to a variety of settings during 2020 including critical care units and general medicine.^{13 14} The impact of this pandemic on training along with possible solutions will continue to be debated for years to come. Working in acute injury care provided orthopaedic surgeons with an opportunity to use and develop their skills in a relevant environment. Several of the key themes focus on the high quality of care that was provided during the redeployment phase. Clinical leads reported high levels of enthusiasm among orthopaedic staff working in MIU with rewarding satisfaction of providing quality of service for patients. If further redeployment is required, leaders could consider this along with the associated educational value identified from collaborative working with emergency practitioners.

A continuous theme among guidance and reconfiguration was provision of early definitive decision making. Not a novel concept during the pandemic, the benefits of senior input in acute trauma were advocated in the Getting it Right

in Emergency Care report from August 2018.¹⁵ However, the release of consultants from elective duties provided a platform to rapidly introduce this into patient pathways demonstrated in all nine featured departments. Pandemic literature demonstrating a reduction in referrals and fracture clinic appointments⁶ should be interpreted with caution given the extent of confounding factors. However, early senior decision making has been shown to significantly reduce admission rates by up to 30% prior to the pandemic.¹⁵ The crisis has provided many departments with the opportunity to progress in this direction, and consultant presence in acute care will likely continue beyond the lifetime of COVID-19.

Other key themes describe how the sense of crisis provided an environment where broad configuration could occur without difficulty. It is notable that the magnitude of reconfiguration during wave one has not been replicated in wave two. [Table 1](#) demonstrates that patient load during autumn of 2020 was greater for some of the departments, but none had restarted their full reconfiguration. This is likely multifactorial. The impacts of ever-growing elective waiting lists have given orthopaedic surgeons cause to advocate to maintain these services for their patients. Maintaining 'business as usual' with regard to elective activity prevents both staff and available facilities from being used for patients with minor injury. A sense of overpreparedness and underutilisation of service has also resulted in reduced enthusiasm to restart. Finally, EDs have used experience from wave one to build departmental resilience during wave two. This meant that none of the interviewees were experiencing pressure to restart support services at the time of interview.

The reduced barriers to change and rapidity of innovation described are mirrored in national-scale research. NHS Confederation research recognised strong innovation and reduced bureaucracy as two of the major lessons across the health service.¹⁶ Healthcare leadership has been pushed to its limits during the pandemic, but the potential of local teams to adapt and change in the face of crisis is evident in the descriptions given by participants. Full analysis of national data and trends in orthopaedic care will likely follow in the coming years. However, local leaders should be empowered to resume services while maximising the positive impacts from temporary reconfiguration.

The advent of nurse-led MIUs and 'see and treat' triage services combined with an increase of complexity in medical cases has led to a reduced proportion of minor injuries presenting to ED.¹⁷ It has been suggested that as a result, the next generation of emergency medicine doctors will feel less confident in providing definitive management to a spectrum of minor injuries.¹⁸ This could result in a higher rate of referral to T&O clinics. The positive effect on patient experience and potential educational value of cross-specialty collaboration demonstrated in this study suggests that early orthopaedic engagement could counter this effect.

Health leaders in all specialties and settings will be considering the aspects of their response that they are most proud of and those they will develop as the pandemic progresses. Reflective literature on leadership during the COVID-19 pandemic more generally highlights similar themes to those identified during this study. A sense of collective identity has been shown to lead to the constructive multidisciplinary working,¹⁹ also recognised in our findings. In addition, active communication is critical for achieving service alignment.^{20 21} Our participants highlighted the need for clear interdepartmental communication, as well as between clinicians and management. It is clear that good clinical leadership was integral to the success of all of the redeployments described by participants of this study and will continue to be

paramount during the continuance of the pandemic response and subsequent recovery.

A qualitative approach was used for this study to provide contextualisation and understanding of participants' experiences. Authors contributing have backgrounds in T&O or emergency medicine. While senior authors hold formal departmental leadership roles, the authors conducting interviews and thematic analysis do not. This phenomenological study used purposeful sampling with priority given to the availability of participants in a small study period. This was to provide consistency across multiple sites. The relatively small sample size is countered by the fact that thematic redundancy was obtained after five interviews. Using one interviewer provides consistency across all participant interviews but does introduce a risk of bias. Readers can review the similarities in these experiences regardless of location, department size or pandemic impact. We acknowledge that the voluntary nature of participation may have excluded some clinical leads with experiences that were less positive or less successful and this sampling methodology may lead to limited generalisability.

CONCLUSION

The extent to which T&O departments across the country have rapidly redesigned their services has led to a flurry of publications from individual units. Team members and leadership are rightly proud of their significant achievements. This paper aimed to draw out the reflections of such leadership during the chronic phase of this pandemic, to identify what learning may be taken from these experiences. The most consistent theme is the active consultant presence in minor injury care with associated early definitive plans. This was well received by patients and staff. Collaboration with EDs at a 'shop floor' and management level was associated with successful transition of service and created educational opportunities. The pandemic reduced barriers to change that have enabled local innovation. We would invite trauma departments across the country to consider what can be taken forward from their own experiences to develop the future minor injury care. Based on the experiences of our participants, this may include an orthopaedic-supported service with early decision making and an integrated governance structure between orthopaedic and EDs that supports multiprofessional working.

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