# BOA Review of Hip Fracture Care – University Hospitals Bristol NHS Foundation Trust; 10th and 11th May 2016

## Reviewers

- Mr Paul Dixon FRCS (Tr & Orth). Consultant Orthopaedic and Trauma Surgeon, City Hospitals Sunderland NHS Trust, representing British Orthopaedic Association
- Dr Tarun Solanki FRCP. Consultant Orthogeriatrician, Taunton and Somerset NHS Trust, representing British Geriatric Society
- Dr Ian Shaw FRCA. Consultant Anaesthetist, Sheffield Teaching Hospitals NHS Trust, representing Royal College of Anaesthetists
- Mr Martin Morris, Advanced Nurse Practitioner, University Hospitals of North Midlands NHS Trust, representing Society of Orthopaedic and Trauma Nursing
- Mrs Alison Ryan MA, MCIM. Non-Executive Director, University Hospitals NHS Foundation Trust
- Dr Stuart Smith FRCA. Consultant Anaesthetist, Sheffield Teaching Hospitals NHS Trust, observing the review

## Aims of the Review

- To review the hip fracture care at Bristol Royal Infirmary, Bristol (BRI).
- To assess the service delivered by University Hospitals Bristol NHS Foundation Trust (UHB) against current BOAST (British Orthopaedic Association Standards for Trauma) and Best Practice Tariff (BPT) requirements.
- To appraise the service in light of recent NICE hip fracture clinical guidance.

## Background

This review was requested by the Trust's Medical Director following publication of the National Hip Fracture Database (NHFD) - An analysis of 30-day mortality in 2014 report. This identified that the adjusted mortality rate for BRI was above the 95% confidence limit in comparison to other trusts submitting data to the NHFD.

The Trust has already reviewed the care of hip fracture patients internally and changes have been made to the pathway. A multidisciplinary working group has been established, multiple audits of practice undertaken and a list of challenges produced in order to develop an ongoing action plan. It was felt at a senior clinical and management level that an external review would be of benefit to supplement the action plan in order to focus and prioritise service improvement.

Senior management and clinicians are keen to further improve service provision and recognise the need to optimise resource allocation and team working to achieve this. The review team were grateful for the engagement shown from all personnel and the comprehensive information provided pre visit.

**Overview of Data from NHFD 2015 Report**

- 306 cases submitted, 81.6% ascertainment
- 30-day mortality – 37 deaths, crude rate 12.1%, risk adjusted 11.7%, national average 7.5%

**Ward Management**

- Admitted to orthopaedic ward within 4 hours – 23.3% (4th quartile when compared nationally), up from 18.2% in 2014 report
- Perioperative medical assessment – 94.1% (2nd quartile), up from 71.4%
- Mobilised out of bed on the day after surgery – 80.6% (2nd quartile)
- Met all the criteria for best practice tariff – 71.3% (2nd quartile), up from 50.3%

**Surgery**

- Surgery on day of, or day after, admission – 73.5% (3rd quartile), up from 71.9%
- Very high rate of perioperative nerve blocks noted, much improved from previous year
- Eligible displaced intracapsular fractures treated with THR – 49% (1st quartile), up from 40.9%
- Intertrochanteric fractures treated with SHS – 68% (4th quartile), down from 81%
- Subtrochanteric fractures treated with IM nail – 92.9% (1st quartile), down from 100%

**Outcomes**

- Overall hospital LOS – 25.5 days (4th quartile), down from 28.2 days
- Return to original residence within 30 days – 48.1% (3rd quartile), down from 57.2%
- Reoperation within 30 days – 4.9%, national average 1.1%
- Developed a pressure ulcer after presenting with hip fracture – 2.6%, down from 4.9%, national average 2.8%
- Hip fractures which were sustained as an inpatient – 6.5%, national average 4.3%

**Review of updated NHFD Run Charts to February 2016**

- Steady compliance with Best Practice Criteria largely dictated by time to surgery and OG assessment
- Gradual reduction in use of SHS for intertrochanteric fracture to approximately 30%
- Slight reduction in use of nail for subtrochanteric fractures
- Gradual reduction in use of THR when eligible to approximately 33% from peak in 2014
- Further reduction in pressure ulcer rate to below national average
- Reduction in inpatient falls resulting in hip fracture
- Reduction in reoperation rate

**Trauma Services at University Hospitals Bristol NHS Foundation Trust**

The Trust has nine sites in Bristol offering over 100 different clinical services. Trauma services are based at Bristol Royal Infirmary which is the acute services hub for the Trust. Other services on site include acute medicine, surgery, emergency medicine and critical care. There are two laminar flow operating theatres, one of which is dedicated to trauma 7 days a week. Elective orthopaedic surgery principally takes place at Southmead hospital as part of a partnership with North Bristol NHS Trust but limb reconstruction work is carried out at BRI with provision for 5 lists per week.

BRI has two dedicated orthopaedic wards with 40 beds in total. There is also a 23 bedded STAU (Surgical and Trauma Assessment Unit) which acts as a short stay admissions unit for both surgical and trauma patients. The Trust has limited access to rehabilitation beds for trauma patients at South Bristol Community Hospital and Clevedon Hospital. Further rehabilitation beds have recently become available in collaboration with care homes in north and south Bristol.

The visiting team met with:

- **Dr S O'Kelly** Medical Director
- **Mr J Livingstone** Clinical Director, Consultant Trauma and Orthopaedic Surgeon
- **Mr S Mehendale** Hip Fracture Lead, Consultant Trauma and Orthopaedic Surgeon
- **Dr R Bradley** Orthogeriatric lead, NHFD lead clinician, Consultant COTE
- **Ms G Baber** Matron, Division of Surgery, Head and Neck
- **Dr E Reed** Consultant COTE
- **Ms B Kerr** Trauma Coordinator
- **Ms S Dennis** Clinical Nurse Specialist for hip fracture and elderly trauma
- **Ms K Turkentine** Trauma and Orthopaedic Audit/Surgical Site Surveillance Nurse
- **Ms S Brown** Therapist
- **Ms V Nickless** Therapist (on behalf of Celia Wogan)
- **Ms A Parker** Ward Manager
- **Ms R Walters** Ward Manager
- **Dr S Vasey** Consultant Emergency Medicine
- **Dr F Forrest** Consultant Anaesthetist
- **Ms J Whitton** Deputy Divisional Director, Surgery, Head and Neck
- **Mr P Kiely** Divisional Director, Surgery, Head and Neck

**Current Pathway**

The majority of the 300+ hip fracture patients treated by UHB present to the ED at BRI. From here they will usually be transferred to one of the orthopaedic wards bed status permitting and optimised for surgery by the admitting surgical team. Patients are admitted to STAU on occasion but this is not deemed an orthopaedic ward for purposes of NHFD data.

Consultant COTE input to review new patients Monday to Friday is provided and efforts are made to see patients preoperatively where possible. There is a trauma list every day and strategies are in place to prioritise patients with hip fracture so that surgery is undertaken in a timely manner.
Rehabilitation continues on the orthopaedic wards provided by a team of therapists supported by nursing staff. Discharge planning is undertaken 5 days a week by means of a multidisciplinary "board round" although only limited rehabilitation beds are available.

Data entry to the NHFD is undertaken by 2 members of the nursing team and is felt to be accurate and complete.

**Emergency Department**

Patients presenting at the ED of BRI are triaged by senior nursing staff. When a hip fracture is suspected an ED protocol is followed, this prioritises appropriate analgesia and early X-ray unless the medical condition requires emergency intervention. Analgesia protocols are not standardised at present but IV Paracetamol is widely used and can be prescribed by some senior nursing staff. Once a hip fracture is confirmed it is standard practice for a nerve block to be performed by ED staff using which ever technique they are comfortable with. Ultrasound machines to facilitate this are readily available.

Appropriate bloods are taken and IV fluids commenced in the ED but only urgent medical intervention will be undertaken. The Clinical Site Manager (CSM) is made aware of the need for admission and will arrange a destination. Where possible this is directly to one of the orthopaedic wards but may be to STAU as an interim solution. Only rarely are patients now admitted to non-specialist trauma wards, when this does happen it is often due to concurrent medical conditions which are deemed to take priority in terms of urgency of management. In these cases, senior ED medical staff tended to take the lead on coordinating care and no significant concerns were voiced. The aim is for patients to be "fast tracked" to the ward after nerve block where possible, but it is not unusual for patients to remain in the ED for a period while a bed is being located and for the surgical clerking to take place here.

In general patients with suspected but unconfirmed hip fracture on X-ray or with other injuries rendering them unable to weight-bear are admitted to STAU under the care of the orthopaedic team on call. There is a stated aim to perform MRI or CT within 24 hours of admission for all patients where initial hip fracture diagnosis is equivocal and it was felt that the service offered by radiology in this regard was good. Patients with confirmed isolated pubic rami fractures may be able to go home from the ED depending on circumstances; this is facilitated by a rapid assessment and support team that can be accessed by ED staff.

ED documentation is separate from the hip fracture admission pro forma and gets attached to the medical notes on admission. The ED section in the admission document is largely duplicated and it was felt by staff to be suboptimal and worthy of improvement.

The overall impression of the review team was that the ED team offered an excellent service to patients presenting with a hip fracture and that in particular the priority given to analgesia and the routine use of nerve blocks should be commended.

**Trauma and Orthopaedics**

There are 10 Consultant Trauma and Orthopaedic Surgeons providing adult trauma care at BRI. A separate paediatric trauma rota is provided by specialist surgeons in addition, but operating occurs at the adjoining Children's Hospital. The adult team work in teams of two to three, with an individual from each team covering on call commitments for 24 hours Monday to Thursday. The weekend is covered by an individual consultant being on call for 72 hours from Friday to Monday.

The on call handover occurs at 18:00, the consultants informally handover and the incoming consultant takes clinical responsibility for every patient admitted after this point. The following morning the on call consultant will lead a trauma meeting followed by a ward round to see patients admitted overnight and then a "hot" clinic to see ambulatory trauma cases referred from the ED and other assessment units. That afternoon the on call consultant will undertake the trauma list, perform a ward round and then handover.

The morning trauma lists are allocated to named consultants; these tend to have a bias towards specialty, especially on a Tuesday and Friday morning when hand cases take priority. On other days hip fractures may be given priority depending on case mix and other logistics. Some flexibility is offered in the form of other orthopaedic lists which take place on 3 days a week in the other laminar flow theatre. These are principally limb reconstruction lists but space is generally left available to accommodate urgent trauma cases, especially on a Tuesday and Friday when hand cases are being undertaken in the trauma theatre.

Patients remain under the care of the admitting consultant throughout their hospital stay whether or not they have undertaken any surgical intervention. On rare occasions care may transfer if the treatment plan is altered by the operating surgeon or they have a particular interest in the case. There is no facility to transfer trauma patients onto elective operating lists performed at North Bristol NHS Trust by the same surgeons as the two Trusts operate completely independently, but on rare occasions for patients requiring complex or specialist procedures exceptions can be negotiated.

The consultant teams are supported by middle grade and SHO grade doctors. These doctors are team rather than ward based, the middle grades work an on call rota (separate from the consultant rota) and the SHO grades work a full shift system. Recruitment of SHO grade doctors has proved an issue since a reduction of Deanery funded posts and at the time of the visit only half the available SHO posts were filled. A recent initiative is for "hot" clinic to be limited to 15 patients so the clinic can be run single handed by a consultant, allowing the middle grade to be free to support the SHO grade with any management decisions or problems identified on the wards. At present not all consultants have a formal non on call ward round within their job plans, and it was generally accepted that greater consultant input or presence on the wards would be beneficial to patients and staff alike.

The role of the trauma coordinator is undertaken by a senior nurse from the directorate, at present three band six nursing staff rotate the role on a fortnightly basis. It was the impression of the review team that the major part of this role was aimed at trying to facilitate the trauma lists and that often this depended on secondary information from the medical team rather than any direct communication. There is also a hip fracture and elderly trauma specialist nurse in post who works primarily with the COTE team providing clinical input on weekdays for relevant patients. Due to high

staff turnover her role has had an increased focus on training more recently, this is achieved through bedside teaching and 30-minute bi-weekly sessions (Tuesday and Thursday).

It was noted that in accordance with NICE guidelines 100% hemiarthroplasties were cemented and no uncemented option was available. It was felt that with careful anaesthetic and cementing technique there was no increased risk of mortality from bone cement implantation syndrome, and no deaths had been attributed to this in mortality reviews. In only very rare cases are patients treated non-operatively and when this occurred it would only be after a multidisciplinary discussion. Total hip replacement is performed at a rate higher than the national average in eligible patients and the majority of surgeons on the on call rota are happy to undertake this procedure when deemed appropriate. Of note the rate of use of the sliding hip screw for intertrochanteric fractures was seen to be well below the national average and has reduced further since 2014. This goes against current NICE guidance, but it was understood by the review team that BRI is involved in a trial of intramedullary devices for this fracture which may partially explain the practice observed.

The high reoperation rate within 30 days for hip fracture patients was discussed. Audits undertaken showed the principle problem to be a high rate of wound complications requiring further intervention. The trust implemented a number of interventions to improve wound management in 2014 and reoperation rates have improved as a result although they remain at over 2% according to the most recent data available.

It is clear from the data provided that the orthopaedic trauma team is involved in ongoing service evaluation and development. Recently a multidisciplinary mortality review group has been established to look at all patient deaths after hip fracture in addition to quarterly service review meetings and weekly email updates. Further audits shared with the review team demonstrated engagement with trying to improve both adherence with best practice parameters and general improvements in the hip fracture pathway.

**Preoperative assessment**

An integrated hip fracture admission pro forma has been developed; this is updated on an annual basis and is used routinely on the wards for hip fracture patients although not always from the ED which has separate documentation. This was felt universally to be an excellent document and should be commended. It lays out the pathway that patients with hip fracture are expected to follow and gives advice on optimisation for medical conditions so that delays to surgery can be avoided.

Clerking of hip fracture patients is undertaken by SHO grade orthopaedic medical staff either on the ward or in the ED. It is their responsibility to initiate any medical management needed to optimise the patient for theatre and there is guidance provided in the pro forma as above. Support from the on call medical registrar is available when required and this tends to be the route used for advice rather than contacting the COTE consultant even in normal working hours.

The concept of the “golden” patient has been incorporated in routine practice principally to facilitate a timely start to theatre lists. Posters promoting this initiative were noted and, in general, reaction was positive notwithstanding the unplanned nature of trauma admissions.

The trauma meeting is attended only by orthopaedic staff routinely, although one of the COTE consultants will attend when available. The format of the meeting is that paediatric cases will be

presented first, followed by general trauma cases. Cases are presented by junior medical staff and in general it appeared the orthopaedic management had already been decided prior to the meeting, although often the consultant who made the decision would not be present due to other commitments. In addition, the consultant operating that morning would not be present at the meeting as they are required in theatre at the same time to lead the team brief. On observation of the meeting, the review team felt that the meeting had little structure, was not patient centred, and failed to fulfil the stated purpose of deciding and communicating treatment plans for every patient discussed. It was also noted that further discussion of patient management in terms of procedure, allocated surgeon, and location of surgery was discussed subsequently to the meeting and not obviously communicated to the wider team.

The database used for tracking trauma patients seemed relatively straightforward to use and the live updating screen in theatre was thought to be a positive initiative. It wasn't however entirely clear to the review team which members of the multidisciplinary team utilised the database, who had responsibility for updating and editing, and whether integration with other hospital systems was possible.

It was acknowledged that there was no formal arrangement for a multidisciplinary meeting of responsible consultants to discuss individual patients and make key decisions. However, there was a feeling that on the occasions when discussions did take place due to the complexity of the case this was very positive and of benefit to all parties.

The COTE consultants will endeavour to see hip fracture patients preoperatively but acknowledge that on occasion they will miss the first patient on the list as they will have already gone to theatre when they become aware of the admission. It is now a rare event for a patient to be delayed going to theatre as a result of awaiting investigations.

**Anaesthetics and Theatres**

The provision of Consultant Anaesthetists for the trauma lists was acknowledged to be somewhat variable and often a senior trainee would be allocated to the list in order to free up consultants for other surgical specialties. There is always a duty consultant available in theatre during the working week to support the anaesthetist doing the trauma list and often they will be able to assess patients or relieve the trainee to go and do the same if needed. There is no cohort of trauma interested Consultant Anaesthetists and this was acknowledged to be a problem, although the anaesthetic lead for hip fractures has developed some anaesthetic "recipe" protocols to try and develop a degree of standardisation. More recently, weekend trauma lists are allocated a Consultant Anaesthetist, either a senior consultant who has come off the general on call rota or a locum who is awaiting a substantive post.

The anaesthetist does not routinely attend the morning trauma meeting and on the day of the visit it was noted that a very junior anaesthetist (SHO grade) was allocated to the trauma list. It became apparent to the review team that no finalised anaesthetic plan had been made for the first patient on the trauma list prior to the team brief although the patient had been assessed by the duty anaesthetist previously. This appeared to be because the assessing anaesthetist was not actually undertaking the procedure and therefore didn't want to commit to a particular technique on behalf of a colleague.

Since the start of the "golden" patient initiative, theatre start times were thought to have become more prompt and utilisation of available theatre time to have improved. There was still the perception that the lists were somewhat chaotic however, and that at times communication between teams could be improved. One observation was that lists can be changed without discussion and the perception was that the reasons for this were not always patient centred. It was also alluded to that, should problems arise with theatre staffing or availability of recovery beds then it was accepted practice for the trauma list to be then halted, leading to cancellation of cases, although no evidence to support this was produced.

Theatre staff were generally regularly deployed in the trauma theatres rather than being continually moved around and felt comfortable with the equipment levels and turnaround times. Non-invasive cardiac monitoring is not used commonly and it would be the exception for a hip fracture patient to be nursed in a level 2 bed. Occasionally patients are kept in recovery for an extended period if ongoing continuous monitoring is required.

Mortality reviews are undertaken in the department but this does not involve any other specialities and conclusions are not routinely shared across directorates, although this may change as part of the monthly multidisciplinary meetings.

**Orthogeriatrics**

At present two COTE Consultants provide Orthogeriatric cover to the trauma patients in BRI. Another colleague is on long term sick leave and no middle grade is in post. In addition, the consultants have responsibility for their own patients in the trust and take part in the acute medical on call rota.

One of the consultants will be on the trauma wards every weekday morning when available but there is no cross cover at present. The priority will be to see new patients, sick patients, and those about to be discharged. This practice is supported by F1 doctors and the hip fracture specialist nurse. Daily multidisciplinary "board" rounds are undertaken to try and identify problems, and facilitate patient flow. This process was observed by the review team and seemed to be a very productive exercise.

The general care of the patients on the trauma wards is the responsibility of the orthopaedic SHO grade doctors and they don't accompany the COTE Consultant on the ward round. Communication between the two is generally undertaken either by writing in the medical notes or through the F1 doctor, which can be a little haphazard. Often it is unclear which orthopaedic doctor is responsible for each patient as they work in teams rather than being ward based but this situation has improved recently with the orthopaedic middle grade spending some time on the ward.

There was general agreement from all staff that when a COTE middle grade was available to be part of the orthogeriatric service, as had been the case fairly recently, then the quality of care for patients was much improved. The COTE consultants at present will endeavour to see all patients admitted who are aged over 50 and also provide a fracture liaison service, and by their own admission with the current manpower this means the service is very stretched. It was suggested that the level of care provided to patients admitted with similar medical conditions (but without a fracture) to the acute medical wards was more thorough due to the time available to the senior clinicians to consider all aspects of the patient's management plan.

Out of hours and at weekends there is no formal service and the on call Medical Registrar is the point of contact for any acute problems. When either of the orthogeriatricians is on call they will try to see new hip fracture patients at a weekend but this does depend on the overall workload. Cover for leave and on bank holidays is difficult and the service tends to fall down at these times.

One of the COTE Consultants is the lead physician for the NHFD and has been proactive in trying to improve the service provided for hip fracture patients. She has initiated the elderly trauma steering group (ETSG) in 2007. In addition, there is a drive to undertake more formalised review of hip fracture mortality and from January 2016 this is being achieved with a detailed pro forma and multidisciplinary approach. Evidence of other audits and positive changes of practice over the last few years were also made available to the review team, the majority of these appeared to be driven by the work of the ETSG, chaired by the COTE team.

**Wards and Therapy**

The trauma unit at BRI consists of two adjoining mixed wards with a total of 40 beds. The two wards are generally staffed and managed independently but there is a lot of cross over and flexibility between the two. In addition, patients can be admitted to STAU in the short term but are then usually transferred onto one of the other wards if a more prolonged inpatient stay is required. The goal for hip fracture patients is that they are admitted directly to one of the wards rather than STAU, however at times of bed pressures, which have become the norm, it would not be unusual for patients to be admitted there. The concept of a protected bed for new hip fracture patients has been introduced but has proved impossible to maintain due to bed pressures. Admission from the ED is arranged through a Clinical Site Manager rather than a member of the orthopaedic team, and it was felt that maybe this was not always undertaken in a way that worked best for the patient or the unit.

In general, it was felt that staff numbers were reasonable but there was a reliance on bank staff due to trouble recruiting and a relatively high staff turnover. The nursing team was also felt to be relatively junior as a result of the turnover, meaning that experience was at a premium resulting in the hip fracture specialist nurse taking on more of an educator role, though continuing to provide direct patient care on a daily basis during the working week.

The therapy team offer a six day service, with emergency cover for chest problems only on Sundays. All therapists work as part of the same team and try to prioritise patients appropriately. This is facilitated by attendance at the daily board round and communication between the orthogeriatric team, the nursing team and therapies staff was felt to be very good. On Sundays the onus to mobilise patients is on the nursing staff which can be difficult due to the workload. It was observed by staff from all groups that on occasion the communication of plans from the orthopaedic medical team could be difficult to clarify due to senior staff not being available on the ward.

The high length of stay noted in the NHFD was thought to be due to the lack of rehabilitation beds available in Bristol. Initiatives are in place to try and improve this situation and greater interaction with community services has commenced to try and address this situation further.

**Observations**

The review team were impressed by the engagement of staff and the preparation that had taken place prior to the visit. The information provided to the team was thorough, illustrating that the trust has been trying to improve the care for hip fracture patients over a number of years.

The ED pathway for patients with suspected or confirmed hip fracture appeared to work well and the review team were impressed with the facility to offer nerve blocks in the ED as a routine.

Documentation in the ED is separate to the excellent hip fracture admission pro forma and completing both appeared to duplicate information.

The direct admission of patients with a hip fracture to an orthopaedic ward appeared to be problematic at times due to bed pressures. The review team felt that the STAU didn't offer a reasonable and safe alternative for this vulnerable group of patients. Admissions being arranged through a generic bed manager appeared to not always be planned around the individual patient or communicated appropriately.

Although a daily trauma meeting takes place, this is not multidisciplinary, as orthogeriatricians and anaesthetists don't routinely attend. It appeared that the majority of orthopaedic management decisions were made prior to the meeting and those making the decisions often were unable to attend due to other commitments. The meeting appeared to lack structure and as an observer it was difficult to ascertain what its objectives and outcomes were.

There was some concern regarding the responsibility for care of hip fracture patients, as the patient remained under the care of the admitting rather than the operating consultant. This means that potentially any problems arising during surgery or special instructions will not be known to the responsible consultant even with a robust handover system. In addition, some consultants did not have time for formal ward rounds within their job plans and it is unclear at what point patients are reviewed by the responsible consultant during their inpatient stay.

Theatre capacity appears reasonable for the number of cases seen per annum. The ability to utilise space on the limb reconstruction lists is useful and allows a degree of flexibility especially at times when there is a high volume of cases. There was the impression however that the organisation of lists and the coordination of surgeons' timetables or sub-speciality interests does not always lend itself to prioritising patients on clinical need alone.

The orthogeriatric service is very stretched and is struggling to provide a comprehensive service. This is partly due to the long term sickness of a senior member of staff and a lack of middle grade support but the design of the service does not appear to optimise the resources available. In particular the demands in seeing all patients admitted over the age of 50 and trying to combine a full fracture liaison service with the current resources is proving difficult.

There was concern from the review team that the anaesthetic input to the trauma service is lacking, and to date it seems to have been solely the responsibility of one individual working with little support from colleagues. There does not appear to be any routine allocation of trauma lists to specific individuals in order for them to develop expertise or interest, and it was of particular concern that a very junior anaesthetist could be allocated to the trauma list without any direct one to one supervision.

Nursing staff with extended roles are employed within the directorate and are a definite asset. The review team were especially impressed by the impact on reoperation rates demonstrated since the appointment of a dedicated surgical site surveillance nurse. The role of the hip fracture and elderly trauma specialist nurse has changed over time so that although it remains largely "hands on" clinical there is more of a nurse educator element which, the review team felt, may detract from time spent directly on patient care. As the job of trauma coordinator is held on a rotated basis through senior ward staff it was not felt to empower the person in post to develop the role and build relationships with other members of the team in order to facilitate patient flow.

The nursing team is motivated and enthusiastic on both orthopaedic wards. They appear engaged in service development and keen to embrace change if this is seen to be of benefit to the patients. The therapist team work well together and as part of the whole ward team, but acknowledge that the change to six rather than seven day working has had an impact on the ability to mobilise all patients appropriately.

Length of inpatient stay remains high for patients admitted with hip fracture and this is recognised by the staff. The daily "board rounds" appear well run and focussed with good attendance from relevant personnel. Rehabilitation beds are at a premium in the local area but are utilised when available and in addition initiatives with community services may improve things in the future.

Although multiple audits of service relating to best practice tariff and NICE guidance along with action plans were presented to the review team it was unclear who had been involved in the process, how results or plans were disseminated to the wider team and how progress is being monitored. The quarterly ETSG meeting is a very positive feature which indicates the desire to improve services, as is the newly instigated regular update bulletin.

The database used to follow trauma admissions through their perioperative period and the live screen in theatre was considered to be a positive initiative. It was unclear however how often this is updated and how widely it is utilised by the wider multidisciplinary team or whether there is any facility either now or with development to integrate with other hospital IT systems.

**Recommendations**

Consideration should be given to developing a dedicated hip fracture ward. This would have multiple advantages for both patients and staff alike and should be relatively easy to achieve within the current infrastructure.

- Patients diagnosed with a hip fracture would by default be admitted to the hip fracture ward and only in exceptional circumstances be admitted elsewhere. This could be more readily coordinated by a senior nurse on the unit 24 hours a day, as a single point of contact, who is aware of the patients on the unit and is able to allocate or move patients appropriately.

- The capacity to develop true multidisciplinary working would be enhanced as the ward would bring together all relevant health care professionals together in the same place and therefore facilitate communication and combined plans of management.

- Training of medical, nursing, and therapy staff on the specific needs and complexities of caring for this group of patients would be facilitated. The skill mix and staffing levels on the ward may have to be altered but this should be achievable with the present staffing numbers across the unit as the actual number of patients will be the same.

A daily multidisciplinary meeting involving the trauma list anaesthetist, the duty orthogeriatrician and the responsible orthopaedic surgeon should be commenced as part of the established trauma meeting or separate to it. The clinicians involved should have personally seen the patients prior to this meeting and working practices may have to change to achieve this. The purpose of this meeting initially should be to discuss individual management plans for all patients admitted with a hip fracture including optimisation, surgical procedure and ongoing care. Considerations may include resuscitation status, ceilings of care and potential aims of treatment for each patient in addition to discussion of individualised specific issues. The outcomes of this meeting should be documented and communicated to the wider team.

Consideration should be given to expanding the number of nurses with extended roles in the department. In particular, the role of trauma coordinator should be reassessed as potentially this could be a key role for the whole of the service and in its current form this is not optimised. It is recommended that the role is permanent rather than rotated and ideally this would involve more than one individual to facilitate a seven day service. The person on duty could attend the multidisciplinary meeting, communicate outcomes and responsibilities to the wider team, and be proactive in sorting out glitches in the initial plan. In addition, when on duty the role could include being point of contact to coordinate admissions and ensure the most appropriate use of beds. Expansion in this area could also be of benefit in supporting the junior doctors on the ward and supporting the existing staff in an ongoing education programme.

The responsibilities of the junior medical staff working on the orthopaedic wards should be reassessed. It appears the orthogeriatricians work largely in isolation only supported by F1 doctors, while the SHO grade doctors are largely treating patients with medical comorbidities and relying on the acute medical team for advice and support. Communication between the two groups does not appear to be optimal and there is concern that patient care suffers as a result. Consideration should be given to trying to integrate these assets and therefore provide a more functional, efficient and proactive care environment. This may include clinical responsibility for some of the junior doctors

moving to the COTE team or just allocating ward doctors to work with the orthogeriatricians on a daily basis.

Concerns regarding senior medical input into patients care after the perioperative period should be addressed. If patients are to remain under the care of orthopaedics then each consultant involved in trauma care should have a job planned ward round session to support this, alternatively care could be transferred to the COTE team but this would necessitate a major change in job planning for the orthogeriatricians. In order to promote transparency and continuity of care it is recommended that consideration is given to a review of the way in which orthopaedic surgeons take responsibility for care. It may be appropriate for the operating surgeon to become responsible for ongoing care and a change in the way the on call commitments of surgeons and allocation of trauma lists are arranged could facilitate this.

Although the number of theatre sessions available for trauma cases is adequate, consideration should be given to altering the timetable for specialty trauma lists in order to try and ensure inpatient trauma cases are allocated to morning lists. This would allow priority patients such as those with a hip fracture to get to theatre in a timely manner, not to be cancelled due to lack of time at the end of the day and to have access to a prolonged stay in recovery if deemed necessary.

The orthogeriatric service would benefit from greater support even allowing for the long term sickness leave currently being experienced. The time within job planning should allow for regular review of all relevant inpatients rather than having to concentrate just on new admissions, this is likely to improve patient care and possibly reduce length of stay. In the short term, consideration should be given to changing the parameters for routine assessment of patients so that the emphasis is moved to older patients. The development of permanent middle grade support to the service would be a very positive step as demonstrated by the feedback received when an individual recently took on this role for a short term secondment.

The anaesthetic department should be supported to develop a cohort of trauma interested consultants. These individuals should be allocated to regular trauma lists and encouraged to become actively involved in all aspects of the MDT care of trauma patients. It should be the exception that junior trainees are expected to undertake these lists solo, they should only undertake the lists under the direct supervision of a consultant and indeed this would potentially represent an ideal training opportunity. Senior anaesthetic trainees i.e. post FRCA and nearing CCT may undertake the lists without direct assistance.

The hip fracture admission document, although excellent, should be reviewed to prevent duplication of ED information. Consideration should be given to developing the trauma database used by the orthopaedic surgeons so that it can follow a patient through their whole inpatient stay from the ED to the community. Ideally this would integrate with other hospital IT services and would be the common reference for all members of the MDT.

The quarterly ETSG meeting should be promoted, continued and developed. The focus of this meeting should be to optimise the care pathway of hip fracture patients from point of entry to discharge and beyond in an integrated fashion. This forum has delivered some documented service improvement over a number of years and consideration should be given to making the meetings monthly rather than quarterly so that the positive changes can be delivered more rapidly and any concerns responded to in a more proactive manner.

Possibly in tandem with the above, regular multidisciplinary mortality and morbidity review meetings should be commenced and aimed at trying to identify common themes and potential problems within the service.

Therapy services should be reviewed so that a true seven day service can be delivered without any drop off on a Sunday. The default mobilisation plan for patients after surgery for a hip fracture, unless explicitly stated in the postoperative instructions, should be that they are mobilised on the first postoperative day and weight bearing is not restricted.