



British Hip Society Guidelines for Prioritisation in Hip Surgery

Vikas Khanduja, Nicholas Darby, Jonathan Howell & BHS Expert Panel*

***BHS Expert Panel:** Andrew Manktelow, Andrew Hamer, Alun John, Anil Gambhir, Ajay Malviya, Ben Bolland, Dominic Meek, Tim Board, David Beverland, Fares Haddad, Graeme Holt, Henry Wynn Jones, Johan Witt, John Skinner, Marcus J K Bankes, Matt Moran, Matthew Wilson, Michael Whitehouse, Paul Partington, Richard Field, Steve Jones, Sion Glyn-Jones, Steve Young, Tim Briggs, Tim Petheram & Tony Andrade.

Introduction

Surgeons working within the NHS are familiar with the need to prioritise patients on their waiting lists, balancing the requirement to treat patients equitably, in the order of their presentation, with the needs of some patients who present with conditions that require more urgent action and who may therefore need to take precedence. This process requires experience and judgement and during the first surge of the COVID-19 pandemic these clinical attributes were put to the test further as elective surgical services were suspended. During the recovery phase many elective services continue to face significant constraints and surgical prioritisation remains an important aspect of our work.

The Federation of Surgical Specialty Associations and the Surgical Royal Colleges have published several iterations of a Clinical Guide to Surgical Prioritisation that has been a useful framework for prioritising conditions and procedures across the broad scope of surgical specialties. Priority is defined according to the maximum time that each condition can wait before surgical intervention and is divided into the following categories:

- Priority level 1a Emergency - operation needed within 24 hours
- Priority level 1b Urgent - operation needed within 72 hours
- Priority level 2 Surgery that can be deferred for up to 4 weeks
- Priority level 3 Surgery that can be delayed for up to 3 months
- Priority level 4 Surgery that can be delayed for more than 3 months

Although these clinical guides have proven to be helpful during the recent pandemic, the Executive Committee of the British Hip Society believed that there were two main opportunities for the BHS to improve their functionality for hip surgeons. Firstly, the Executive felt that there was a need to add detail and granularity to the range of conditions considered, so that a more comprehensive guide may be created, covering a wider range of procedures carried out by hip surgeons. Secondly, the time intervals of the clinical guidelines were broad in some of the categories and the Executive felt that there was an opportunity to add further nuance to those timescales, through a modified clinical guide for hip surgery.

The BHS has therefore led a process to develop comprehensive guidelines to prioritising surgical procedures around the hip, dividing these into primary arthroplasty, revision arthroplasty and non- arthroplasty

interventions. Finessing the time intervals of the various priority levels was achieved by adding a “*” to each category, which was used to indicate when an intervention could or should be considered towards the earlier end of a time interval. For instance, a P2* procedure is one that could wait longer than 72 hours (P1b) but where it is felt that it should be done early within the four weeks’ period covered by the P2 category.

We have sought to develop this guidance using the Delphi method of consensus building, as the most scientifically robust method for creating the advice. The Delphi technique was first designed by the RAND Corporation in the 1950’s and since conception the general principles that define this methodology remain unchanged. The core features of a Delphi study are as follows: experts answer a questionnaire anonymously, the answers are collected by the study facilitators, the aggregated results are fed back to the experts in a standardised format and then the entire process is repeated for multiple iterations. When compared with the alternative approaches for achieving a group consensus, Delphi methodology boasts a number of advantages and has been suggested to outperform face-to-face meetings. The anonymity that underlies a Delphi study removes the notion of direct challenge between individuals. This reduces the tendency to mount a rigid defence of one’s original stance and prevents dominant personalities from exerting a disproportionate influence over the group. Eliminating a face-to-face meeting is logistically convenient and affords experts the time and privacy to consider the aggregated feedback before answering the next questionnaire. The main disadvantages of Delphi studies include expert panel drop out (especially with increasing iterations) and the introduction of facilitator bias. Delphi study methodology has extensive examples of field applications throughout industry, academia and medicine, including orthopaedics.

It has been previously been suggested that a minimum of 12 experts are required for a study such as this one. In our study the expert panel was comprised 28 experts who met the inclusion criteria for the study of the 35 who were invited. For the purpose of the study, an expert was defined as:

Primary Expert

1. 5 years or more of experience as a Consultant
2. 5 or more peer reviewed publications in the last 5 years on Hips (ideally on primary hips)
3. Performs 75 or more primary THRs per annum

Revision Expert

1. 5 years or more of experience as a Consultant
2. 5 or more peer reviewed publications in the last 5 years on Hips (ideally on hip revision)
3. Performs 20 or more revision hips per annum

Non Arthroplasty Expert

1. 5 years or more of experience as a Consultant
2. 5 or more peer reviewed publications in the last 5 years on Hips (ideally on non-arthroplasty)
3. Performs 75 or more non-arthroplasty procedures per annum

The BHS executive and a few experts reviewed the literature and formulated a list of hip conditions suggested to be relevant for prioritisation. The study then consisted of three rounds of questionnaires based on these conditions distributed over a period of 5 weeks using the online survey platform *Survey Monkey*, with the consensus rating set at 70% *a priori*. In between each round the facilitators collected and presented the answers within a summary document, which was circulated to the experts for review prior to the next round.

The results of this Delphi process are outlined below, and we hope that hip surgeons in the United Kingdom, and even internationally, will find them to be useful. When we first embarked on the Delphi process there was some debate as to whether or not this was a worthwhile exercise, or whether the BHS Executive should simply compile the list of priorities themselves. In fact, the Delphi process that ensued demonstrated surprisingly high levels of initial disagreement among the field of experts and the difficulties experienced in reaching this list of consensus decisions demonstrate the value of the process.

Despite best efforts, there remain some conditions and procedures for which the panel failed to reach a 70% consensus, and these are also included in the results below, marked as n/a. It's important to note that for 70% consensus to be reached, experts had to agree upon the basic surgical prioritisation category, but variance in the application of the "*" was accepted, and included in achieving consensus. Thus, for example, 70% agreement across the ratings 2 and 2* would satisfy the conditions set, but 70% agreement across 1b and 2* would not, even though these are also, in effect, adjacent ratings and the difference between 1b and 2* might be interpreted as relatively small. Furthermore, where consensus was deemed not to have been reached, we have included in the results the priority categories across which there was a combined 70% agreement by the experts and we hope that this allows the reader to understand where the breadth of opinion lay. In clinical practice this group of conditions, for which it was difficult to achieve consensus, perhaps most clearly highlight the benefits of MDT working, and in sharing these prioritisation decisions through a team approach.

The BHS does not intend for this document to contradict in any way the advice produced for the profession by the British Orthopaedic Association, NHSE, Public Health England or the Surgical Royal Colleges. On the contrary, we hope that this Clinical Guide is complimentary to the advice issued by those professional bodies.

The BHS hope that these guidelines, based as they are on scientifically robust methodology, will provide surgeons with a standard method for prioritising patients, both during the COVID-19 pandemic and afterwards. The function of the multidisciplinary team meeting is fundamental to safe surgical practice and we hope that this document will prove to be a useful resource for MDT's in helping to standardise priority for different conditions and procedures. We also hope that surgeons will find it useful for their discussions with their work colleagues, as surgeons seek to secure the resources they need for the valuable services that they provide to their patients.

Results

This **Delphi consensus study** comprised of **three rounds** of questionnaires completed by **28 experts**.

The major priority levels are shown below:

1a (Emergency operation within 24 hours)

1b (Urgent operation within 72 hours)

2 (Operation within 4 weeks)

3 (Operation within 3 months)

4 (Operation may be deferred more than 3 months)

*** to denote high priority within the major priority level**

n/a (70% consensus amongst experts could not be reached)

Prioritisation of Key Indications

Indication	70% consensus level
Treatment of newly admitted patient with native septic arthritis of the hip who is deteriorating (hypotension not responding to fluid resuscitation)	1a
Treatment of native septic arthritis of the hip in a deteriorating patient (increasing pain and rising CRP)	1a
Intracapsular fracture of the neck of femur	1b*/1b

Prioritisation of Indications for a Primary THR

Indication	70% consensus level
Acute THR associated with pelvic trauma +/- fixation of pelvic trauma (fix and replace)	1b
Fracture / major bone destruction around the hip joint due to metastasis	1b
Bone tumour associated with a fracture	1b
Malignant bone tumour associated with impending fracture	2*/2
Subacute failure of DHS, proximal femoral fracture or hemiarthroplasty	2*/2
Severe pain/disability where loss of independent living is imminent or has occurred	2
Primary benign tumour without impending fracture	3*/3
Collapse of the femoral head secondary to AVN	3*/3
THR where delay will prejudice outcome (function and/or increasing risk of complications)	3*/3
Significant deterioration in pain / function now requiring opiates	3
Primary osteoarthritis	4
Secondary osteoarthritis (secondary to DDH, SCFE, Perthes)	4
Inflammatory arthritis of the hip with significant loss of joint space	n/a – 3 & 4*
Catastrophic failure (or failure with an associated infection) of a DHS, proximal femoral fixation or hemiarthroplasty and inability to weight bear	n/a – 1b & 2*
CUMARS or Antibiotic loaded primary for treatment of acute infection of the native hip in a stable patient	n/a – 1b & 2*

Prioritisation of Indications for Revision Hip Surgery

Indication	70% consensus level
Dislocation with paraesthesia in nerve distribution (sciatic or femoral) or uncontrolled pain	1a
Acute periprosthetic joint infection in a septic or deteriorating patient	1a
Periprosthetic fracture with neurovascular compromise, open fracture, skin at risk or haemodynamically unstable patient	1a
Acute dislocation with no neurovascular compromise	1b*/1b
Acute periprosthetic joint infection in a stable patient requiring DAIR or other procedure	1b
Closed periprosthetic fracture with no neurovascular compromise in a haemodynamically stable patient	1b
Grossly unstable hip replacement with rapid sequence of recurrent dislocations	2*/2
Implant failure in a coping patient with e.g. stem shaft fracture or 'Spun Cup'	2*/2
Destructive bone lesion around existing THR with impending risk of fracture	2
Revision surgery for progressive loosening / osteolysis, with impending failure of fixation, implant or surrounding bone	3*
Second stage revision after periprosthetic joint infection for patient not coping	3*/3
Recurrent intermittent dislocation (e.g. once every 4 to 6 months)	3*/3
Revision for ARMD with significant soft tissue destruction but no dislocation	3*/3
Second stage revision after periprosthetic joint infection in a stable, coping patient who is weightbearing with a stable spacer in situ	4*/4
Slowly progressive osteolysis with low risk of rapid deterioration or construct failure	4
Takedown of arthrodesis and conversion to a THR	4
Revision for any other reasons	4
Acute and catastrophic implant failure (neurovascularly intact) e.g. ceramic failure, stem neck fracture	n/a – 1b & 2*
Subacute / chronic periprosthetic joint infection requiring 1 or 2 stage revision	n/a – 2, 3 & 3*

Prioritisation of Indications for Non-arthroplasty Hip Surgery

Indication	70% consensus level
Arthroscopy of an infected joint in a stable patient	1b*/1b
Open surgical dislocation for slipped capital femoral epiphysis	1b
Open repair of hamstring tendon (acute)	2*/2
Endoscopic repair of abductors (acute)	2*/2
Open repair of abductors (acute)	2*/2
Endoscopic repair of hamstring tendon (acute)	2
Core decompression for AVN	3
Arthroscopy for femoroacetabular impingement with associated lesions	4
Arthroscopy for periarticular pathologies (IT band snapping, Gluteus medius repair, Psoas tenotomy)	4
Arthroscopy for undiagnosed hip pain	4
Arthroscopy for Perthes disease	4
Pelvic osteotomy for: hip dysplasia, acetabular retroversion or Perthes	4
Femoral osteotomy for: high femoral anteversion/retroversion or Perthes	4
Open surgical dislocation for femoroacetabular impingement or Perthes	4
Arthroscopy for internal snapping hip	4
Arthroscopy for external snapping hip	4
Arthroscopy for iliopsoas impingement in a THR	4
Open TFL Decompression	4
Endoscopy for lateral or posterior hip pain	4
Open Sciatic nerve decompression	4
Endoscopic hamstring repair (chronic)	4
Open hamstring repair (chronic)	4
Open repair of the abductors (chronic)	4
Endoscopic repair of the abductors (chronic)	4
Arthroscopy for loose bodies/ synovial chondromatosis with symptoms of pain and locking	n/a- 3 & 4

Additional considerations affecting priority

Consideration	70% consensus
Patient has significant co-morbidities.	AFFECTS PRIORITY
The patient is healthy, and the operation is simple and could be done as a day case without exposing the patient to additional risks.	AFFECTS PRIORITY
The patient is suffering from increasing pain.	AFFECTS PRIORITY
Should a threat to employment/career, or capacity to compete at elite level sport, be considered when prioritising surgery?	AFFECTS PRIORITY
Would the prioritisation be altered if recommendations were made on intervals and/or triggers for review for patients in Categories 3 and 4?	AFFECTS PRIORITY
Would the prioritisation be altered by the results of research on the safety of orthopaedic surgery in the Covid-19 era?	AFFECTS PRIORITY
The patient is enrolled in a clinical trial.	NOT RELEVANT
The procedure is complex/high risk.	n/a
The patient has waited for longer than a usual (pre-COVID) waiting time for their procedure type.	n/a

Summary of important comments made by the experts

- This prioritisation should be limited to the “COVID era” – For Discussion
- As more information is gathered on the effect of coronavirus on orthopaedic patients’ recommendations may need to change
- An MDT approach may be warranted to prioritise some patients
- It is important to ask patients when they would ideally like their surgery as some patients may wish to delay during “COVID era”
- Patients clinical needs may change while waiting, clinicians may need to be flexible and adjust priority accordingly
- Any prioritisation system must be transparent and fairly applied to all patients
- Concern that subjective assessments such as “increasing pain” may be susceptible to unfair practice and abuse of the system
- Will the creation of this list incur any medicolegal consequences for trusts/clinicians who operate on alternative time scales?