British Orthopaedic Association

Caring for Patients; Supporting Surgeons

Consultant Advisory Book

Helping Consultants get things right

The BOA Advisory Book

British Orthopaedic Association

Compiled by the BOA Professional Practice Committee 2013/2014

Contents

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Preface

Since the initial publication of the Advisory Book on Consultant Trauma and Orthopaedic Services, the National Health Service has continued to go through unprecedented change and evolution as we all strive to deliver high quality services with stretched resources. The NHS continues to struggle to keep pace with the increased demand for orthopaedic and trauma services, and the 18 week referral to treatment standard has proved very difficult to attain and maintain for our specialty.

There is an increasing realisation that active mobile people make fewer demands of the health care system and have better control of their co-morbidities and so keeping people mobile reduces the burden on the entire NHS. There is an increasing demand for and expectation of musculoskeletal services by an increasingly fit and ageing population. In spite of this the orthopaedic workforce is changing and the numbers we are training are decreasing.

The Government has recognised rising demand and the capacity gap and in 2013 appointed Orthopaedic National Clinical Directors to focus on trauma, musculoskeletal disorders and spines. In 2013/14 Professor Briggs undertook a 'Getting it Right First Time' project, funded by the Department of Health, defining the optimal provision of orthopaedic services in England.

The change in commissioning implemented in 2013/2014 identified the need to develop pathways of care for common disorders, and there has been a push for greater transparency for arthroplasty outcomes through the publication of individual surgeon outcomes in England based on NJR data.

Many well-meaning initiatives have been introduced, each increasing the burden placed on consultants. The role of the consultant is constantly evolving and there is an urgent need to nurture clinical leadership so that consultants can ensure that the quality of care remains paramount. The consultant contract is under active review. The purpose of the hand book is to act as a resource for:

- new consultants to help them know the standards expected
- all consultants on the national peer reviewed standards of facilities, staff and other resources required to help them deliver a quality service covering all professional aspects including education, audit, research and management
- those managing our services providing peer reviewed standards
- commissioners specifying services

This Consultant Advisory Book will help all involved in developing, specifying, commissioning and delivering high quality trauma and orthopaedic surgery in the United Kingdom.

Joe Dias Tim Wilton Tim Briggs

Acknowledgements

This fourth edition of the Advisory Book on Consultant Trauma and Orthopaedic Services reflects the many changes that have occurred in the National Health Service since the last revision in 2007.

The Professional Practice Committee is grateful to the many past and present members of Council and the Fellows of the BOA for their advice, much of which we have been able to include. We wish to thank the Orthopaedic Subcommittee of the BMA Central Consultants and Specialists Committee and the many other individuals and organisations who have contributed. These are listed:

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Alison Armstrong shared the responsibility of getting the text contributions for this revision on behalf of the PPC and also helped ensure that there was consistency between sections. I am grateful for her help and support.

The BOA's Patient Liaison Group is at the heart of the Association's patient focused approach. The Lay Chair attends Council as an ex-officio member and the clinical Vice-chair is a member of Council. PLG advises the PPC, and various members have contributed to the development of various BOA guidelines. In line with this patient centred policy I am very grateful to Nick Welch, the current PLG Lay chair, who has written the section on what our patients expect from us.

Tom McNally helped Joe Dias prepare the materials for this document. Rosanna Raison and Julia Trusler provided project management support to the PPC and helped edit this document.

Pip Divall, Clinical Librarian at the University Hospitals of Leicester NHS Trust, provided invaluable assistance by performing a systematic search of published literature for these guidelines. The Clinical Librarian service also retrieved publications necessary for the compilation of this advisory book.

Joe Dias

Chairman, Professional Practice Committee 2012/13

British Orthopaedic Association

Introduction

Delivering Quality Trauma and Orthopaedic Care

This book sets standards to help Orthopaedic Surgeons deliver a quality of service that is up-to-date, safe, efficient, and in the best interest of patients. This means that diagnosis and treatment is carried out in a reasonable time by surgeons trained to a standard acceptable to the Royal Colleges of Surgeons.

Where the standards of care fall below recommended levels this document should help aid resolution. Responsible clinical governance will protect Orthopaedic Surgeons against complaints and litigation and it is essential that service inadequacies are identified and dealt with properly [1]. If discussions at local level fail to correct significant deficiencies and patients are being put at risk, the matter should be reported to the Regional Specialty Professional Adviser in Orthopaedic surgery (or the equivalent in Wales/Scotland/Northern Ireland) and to the British Orthopaedic Association.

Background

The first Advisory Booklet on Consultant Trauma and Orthopaedic Services was published in 1990. It was revised in 1998, 1999 and 2007. This revision responds to the developments outlined in the Preface. Throughout this book the term Orthopaedic Surgeon refers to a Consultant both in Trauma and Orthopaedic surgery. *In addition, terms importing the masculine gender include the feminine.*

Orthopaedic surgical practice continues to evolve. We have moved from a Consultant-led to a Consultant-delivered service. All patients admitted to hospital for a surgical procedure need to be registered under the care of a named consultant.

Orthopaedic trainees and Trust doctors in training grades need supervision, teaching and support. Those Staff and Associate Specialist doctors who are not practicing independently also need the same support. Time must be set aside for their education, assessment and for audit and research. Non-medically qualified assistants are necessary to allow the consultant to fulfil the required duties without junior staff and these assistants also need training and close supervision. The Royal College of Surgeons of England has developed a curriculum for their training.

Developments in orthopaedic surgery over the last thirty years have radically changed practice. As the life expectancy of the population increases there is a growing number of patients requiring treatment for fractures and orthopaedic surgery, including joint replacement. At present more than 1.5 million procedures are now carried out for musculoskeletal disorders each year in the United Kingdom.

The introduction of techniques such as arthroscopy, minimally-invasive surgery and enhanced recovery now allows many procedures that previously required an inpatient stay to be done as a day-case or short-stay. Developments in sophisticated high-cost investigations and surgical technology have led to great advances in the treatment of spinal deformities, tumours, complex fractures and neuromuscular disorders, with consequent increased demand for surgical facilities and staff.

Orthopaedic procedures of varying complexity can be very appropriately managed in a well-staffed and resourced District General Hospital Trauma and Orthopaedic service. However patients with more complex orthopaedic and especially uncommon disorders require the greater concentration of expertise and resources available in specialised units. The management of trauma has been reshaped with the establishment of major trauma centres.

The quality expected of our clinical work is underpinned by commissioning pathways and Guides to Good Practice developed by the BOA in collaboration with our Specialist Societies and our wider musculoskeletal community. These are available on the BOA website and are listed in Appendix 1.

Helping Consultants get things right - the BOA Advisory Book

The book has two sections:

Section 1 considers the expectation of an Orthopaedic Surgeon, the essential support needed for the effective delivery of an orthopaedic service and the networks required to deal with complex needs.

Section 2 addresses the work of a Consultant Orthopaedic Surgeon.

The Appendices give links to additional resources and documents available on the BOA website:

- Clinical Commissioning Guidance
- BOA strategies
- Getting it Right First Time
- BOASTs
- Blue Books
- BOA Position statements
- The Attendance of Company Representatives in the Operating Theatre
- Sterile Procedures in Operating Theatres
- Sterilisation and Decontamination

1 REQUIREMENTS FOR TRAUMA AND ORTHOPAEDIC SERVICES IN NATIONAL HEALTH SERVICE HOSPITALS

The details set out in this section are intended to set a standard below which a service will become unsafe and patients will be put at risk.

Where a consultant is appointed with a defined "special interest", the staff, facilities and time appropriate for the practice of that "special interest" must be made available.

1.1 What is expected of a Consultant in Trauma and Orthopaedic Surgery

1.1.1 Leadership in clinical practice

The General Medical Council (GMC), in its document "Good Medical Practice,"[2] explains the individual responsibility of doctors in their professional work. It provides a framework for high standards in the patient-doctor relationship and is an important part of the appraisal and revalidation process.

Healthcare is provided by multi-disciplinary teams and it is important that Orthopaedic Surgeons fully understand their roles and responsibilities. Consultants must be involved in providing Clinical Leadership at different levels. The consultant retains the responsibility of ensuring that the patient under their care gets safe and effective treatment. Clinical leadership starts with each individual practice and is not confined to designated leadership roles of Trauma or Elective Clinical Leads, Clinical Director or Medical Director in their respective Trusts or increasingly at a National level.

We expect all providers of care for musculoskeletal disorders to meet the BOA's Six Guiding Principles for Trauma and Orthopaedic Surgery[3]:

- The right patient should receive the right treatment at the right time
- Investigations should only be undertaken if needed. They should be based on good evidence and should not replace a considered and informed clinical assessment
- The choice of surgical intervention should be appropriate to the condition of the patient and to its severity
- Patients, rather than clinicians or commissioners, should be able to choose their treatment for a non-urgent disorder, having been provided with information on a variety of alternatives from multiple sources
- Each treatment must be accompanied by:
    a) A good evidence base
    b) An assessment of its expected duration and magnitude of benefit
    c) A risk assessment
    d) A clear definition of the required inpatient and outpatient care
- Any changes, including those in service delivery, must:
    e) Improve the quality of care

f) Be effective
g) Be capable of independent assessment

The current Good Medical Practice[2] defines this and states that we must all

"Make the care of your patient your first concern"

and also advises medical staff how to address any deficiencies in the following paragraphs from Domain 2:

"You must take prompt action if you think that patient safety, dignity or comfort is or may be seriously compromised.

a) If a patient is not receiving basic care to meet their needs, you must immediately tell someone who is in a position to act straight away.

b) If patients are at risk because of inadequate premises, equipment or other resources, policies or systems, you should put the matter right if that is possible. You must raise your concern in line with our guidance and your workplace policy. You should also make a record of the steps you have taken.

c) If you have concerns that a colleague may not be fit to practise and may be putting patients at risk, you must ask for advice from a colleague, your defence body or us. If you are still concerned you must report this, in line with our guidance and your workplace policy, and make a record of the steps you have taken.[4]"

It is a matter of course that problems do occur in the practice of Orthopaedics and Trauma; these may be highlighted by clinical audit, MDT meetings, a critical incident report, complaints or litigation. Constructive mechanisms based on Education and Training with appropriate Continuing Professional Development and Personal Development Plans, formed during Appraisal, will resolve most concerns. All surgeons have a duty to ensure the safety of patients and to report unsafe systems, infrastructure or staff.

All Orthopaedic Surgeons must fully understand their accountability in these matters within their Trust. They should also be fully aware of the Trust's clinical governance and disciplinary procedures, and the roles of Case Investigator and Mediator. Trusts do have local Policies and Procedures for dealing with most issues and Orthopaedic Surgeons should make themselves aware of these Standards of Practice.

If these systems are insufficient you must bring your concerns to the attention of the British Orthopaedic Association or the Royal College of Surgeons.

The Health Service Ombudsman will deal with complaints unresolved at Trust level.

However, external input may be requested in exceptional circumstances and, acting in support of The Royal College of Surgeons of England's 'Invited Review' mechanism, the BOA has committed itself to providing advice to Trusts in such a situation. Assessors assisting Trusts in resolving issues under local procedures are Consultant colleagues who act as 'honest brokers'. The Trust should have an indemnity policy to cover the assessors acting in such a role.

The recently renamed National Clinical Assessment Service (NCAS) should continue to minimise the unnecessary suspension of doctors[5]. At present, those referred to the NCAS may be allowed to continue to practise unsupervised, while avoiding the area of concern, or, alternatively, practise under supervision. The subsequent review process is

rigorous and involves psychometric testing and scenario evaluation. The NCAS Chairman should continue to ensure that their recommendations will be binding on Trusts, as are, at present, those of the Care Quality Commission. The NCAS was aligned with the NHS Litigation Authority in 2013.

1.1.2 Clinical Commissioning Guidance and pathways of care for common disorders

In partnership with the Royal College of Surgeons, the British Orthopaedic Association has developed a series of Clinical Commissioning Guidance documents for elective orthopaedic services. These Guidance documents have been developed to assist commissioners, clinicians and managers in delivering high quality and evidence based care for musculoskeletal disorders in England. The Guidance documents have received funding from DH-RightCare, and have used a defined process accredited by NICE.

Within each commissioning guide is a high value care pathway which aims to provide patients, the public, health and social care professionals, commissioners and service providers with a clear description of what constitutes a high quality service. This pathway is evidence based, agreed by a wide multidisciplinary development group, spans primary, secondary and specialist care and is supported by a high quality and regularly updated dashboard.

Each guide has been put together by a dedicated guidance development group, which has representatives from Specialist Societies, primary care, physicians, commissioners and patient groups as well as all clinicians involved in the delivery of the service. As a result, the development process is intended to produce a consensus statement from different stakeholders to define optimal commissioning of services for these conditions. Each group has been led by a clinician commonly dealing with the disorder under consideration.

The guidance has been developed on a range of topics, including:

- Foot & Ankle — Painful deformed great toe in adults[6]
- Hands — Painful tingling fingers[7]
- Hips — Painful osteoarthritis of the hip[8]
- Spines — Low back pain with[9] and without radicular pain
- Knees — Painful osteoarthritis of the knee[10]
- Shoulders — Subacromial pain

The documents are available on the BOA website and practices should be assessed against the pathways described so patients get optimal care at the right time by the correct team. This will ensure consistent good outcomes and this is discussed next.

1.1.3 Orthopaedic Outcomes

Since EA Codman[11] introduced the end result concept, Orthopaedics has led the way measuring outcomes and setting standards. Recently there has been much work on "**P**atient **R**eported **O**utcome **M**easure**s**" as if this were something new. It is certainly important that we produce evidence of our success to promote and support our practice locally and nationally. Time and again orthopaedic procedures prove more successful and reliable than many other treatments in other specialties.

We regard it as essential that patients are followed up in order that the outcome of their treatment can be properly ascertained. See revalidation (1.1.5) for further details.

The routine recording and monitoring of adverse events (e.g. infection, dislocation, fixation failure, DVT and death) should be in place in all departments. Attendance records and meaningful discussions at regular departmental Mortality and Morbidity meetings are now included for our appraisal standards as part of national patient safety improvement programmes. National programmes such as the **Co**nfidential **E**nquiry into **P**atient **O**utcome and **D**eath[12] and **Co**nfidential **Re**porting **S**ystem for **S**urgery[13] are to be encouraged for independent feedback in difficult circumstances.

Orthopaedics is very successful with few such adverse events in all specialisms. Further detail beyond any basic adverse event data is necessary to describe and detail our success and support our continued practice. There are a multitude of specific scoring systems, of increasing complexity, currently in use.

A "PROM" is any measure of outcome reported by the patient. In general, a joint specific score which has been validated gives a good specific indicator of success.

If publication is considered, more detail will be required on top of that from the PROMs scores alone (range of movement, angle of correction, etc.). Again there are a multitude of well-tried systems available; however, their increasing complexity makes it difficult to record detail reliably. Your association and specialist society will have a view as to the most appropriate scores to use for practice monitoring and for publication. For general use a joint specific score (e.g. any Oxford score) would be sufficient, many national registry projects include these as routine. Submitting data to the National Joint Registry is now considered mandatory.

We operate on a wide variety of patients so, if we wish to compare our effectiveness and population against others, we also require a general health measure such as the EQ5D or SF12. These will be insufficiently specific to detect differences between treatments but would allow evidence of healthcare benefit from your treatment, for general use. Again, these are probably unnecessary as a routine unless specifically intended for a project.

Patients' experience[14] of healthcare delivery is increasingly important (**P**atient **R**eported **E**xperience **M**easures). You are expected to have some measure of individual experience in outpatients as part of your GMC revalidation portfolio. However, we encourage a more general assessment of any hospital episode to try to identify common themes in your department.

A recent government initiative has promoted the friends and family test[15], a form of promoter score used in industry, which produces a single figure that expresses a collective patient opinion as to whether they would recommend your treatment to others. It is an amalgam of expectation fulfilment, technical success and the patient's experience of healthcare delivery. Perhaps the latter is more variable and the major cause for concern following recent events. To understand your score against others you will need at least a PROMs score and some sort of measure of patient experience. The routine collection of a basic dataset before and after treatment is to be encouraged.

In regard to registries, the orthopaedic profession has a justifiable reputation for being very forward thinking. The largest registry is the National Joint Registry (NJR) and was set up to collect information on all hip, knee, ankle, elbow and shoulder replacement operations in England and Wales, latterly Northern Ireland has become involved. In Scotland the Scottish Arthroplasty Project is in place. In 2013, surgeon level outcomes data for hip and knee replacement were published for the first time as part of an NHS England initiative using NJR data, and this initiative is expected to expand in future years. There are a range of other registers and audits already established (including the National Hip Fracture Database (NHFD) and Trauma Audit Research Network (TARN)). The BOA is also aware that there is a strong desire among Specialist Societies to create further new registries, and is engaging in a project to support the development of these and encourage its members to contribute to them.

Surgeons should comply with the Data Protection Act[16] and, if considering publication, any local ethics committee requirements to store and report on data. Permission for an ethics committee is not required for service evaluation as part of routine care.

Your management team have a duty to support your endeavours in regular quality initiatives and the routine gathering of a basic dataset is easier to implement and more meaningful than intermittent short term audits.

> *Good doctors are those who know and act on their own results.*

We recommend: -

- A comprehensive system to record adverse events (M&M meetings)- To include participation in CEPOD and CORESS
- Participation in national registries (e.g. NJR, NHFD)
- Participation in your specialty specific registry programme
- A measure of patient experience for both outpatient and in-patient episodes

We have to put our outcomes in the context of patient expectations and this is considered next.

1.1.4 The Patient Perspective: What patients expect of their consultant

The BOA's six guiding principles of Trauma & Orthopaedic Surgery[3] are the foundations from which all treatment pathways should be built.

As part of these principles the Consultant, as leader of the Multi Disciplinary clinical Team (MDT), must put the patient at the centre of all decisions about their current or planned treatments, rehabilitation and discharge plans, and ensure that they understand the aftercare processes and are in full agreement[17].

When a patient is not able or capable of participating in these discussions then it is incumbent on the Consultant and the clinical MDT to engage fully with the patient's family or carer[17].

It is also necessary, when appropriate, that the Consultant ensures that the MDT liaises with Community Services, Social Services and Primary Care Services so they are fully aware and prepared to manage the patient's continuing rehabilitation and integration back into the community. This should happen with the patient's and/or their family/carer's support and agreement[17].

When a patient is referred to an orthopaedic unit they have the right to expect that the surgeon who first sees them in the out patients' department is the same clinician who provides and manages their treatment through to discharge[18]. Patients do not consider it acceptable that having agreed a treatment plan with one surgeon, they are then confronted by a different surgeon at the time of signing the consent form. In such circumstances it may not be possible to obtain 'informed consent'. On occasion patients may be offered the choice of a joining a pooled waiting list, please see appendix 7 for the BOA's position on pooled waiting lists.

In the case of a patient being admitted to an Emergency Department or Major Trauma Centre an orthopaedic surgical procedure may not be the most critical and life-saving initial intervention. But when a trauma and orthopaedic surgeon is involved, the patient has the right to expect the same surgeon will be involved, as part of the MDT in discussions about rehabilitation and discharge, and if appropriate with the unit to which they are being repatriated[19].

The BOA's Patient Liaison Group has published a series of "Patient Expectation" papers[17-20] (accessible on the PLG web pages on the BOA website at http://www.boa.ac.uk/patient-information/patient-standards/). These outline the minimum standards of care from admission to discharge that a patient should receive[17]. Children and their parents have special expectations and the consultant should be aware of these[20]. These papers have been approved by the BOA Council and should be the keystone to every Consultant's approach to their patient. While consultants should understand, clarify and meet patient expectations, patients themselves have responsibilities[21] to help obtain good outcomes. Such mature partnership between the consultant, the clinical MDT and the patient will protect patients and help deliver high quality care.

1.1.5 Revalidation

The White Paper "Trust, Assurance and Safety. The Regulation of the Health Professionals in the 21st century" was published in 2007[22]. This paved the way for the introduction of revalidation in December 2012.

The stated purpose of revalidation is to assure patients, the public, employers and other healthcare professionals that licensed doctors are up to date and fit to practice.

Every doctor with a license to practice is linked to a responsible officer[23]. The officer will make a recommendation to the GMC every 5 years as to whether the doctor should have their license to practice renewed. Doctors already on the specialist register, or on training programmes at the introduction of revalidation, will have been allocated revalidation dates. For others, from 2013 onwards, revalidation will occur 5 years after entry onto the medical register and every 5 years thereafter.

Evaluation of fitness to practice will be based on local systems of clinical governance including a mandatory annual appraisal process. At appraisal, you should expect to

discuss your practice and performance with your appraiser and should use supporting information to demonstrate that you continue to meet the standards for competent practice[24 25] set out in *Good Medical Practice (2013)*[2].

In preparation for the appraisal you will be expected to gather supporting information[26] about your practice throughout the year. Specialty guidance on supporting information can be found on the BOA[27] and Surgical College websites. For orthopaedic surgeons, the supporting information to be collected includes –

- Information about the way you work and scope of practice
- Outcomes of surgery
- Feedback on your practice (both from colleagues and from patients)
- Evidence of review of your work and quality improvement.

For detailed information see the BOA pages on revalidation[27].

For surgeons carrying out joint replacements that are eligible for inclusion, participation in the National Joint Registry is mandatory.

Feedback from colleagues (360 degree feedback) and from patients (patient feedback) must be obtained using a questionnaire compliant with GMC standards[28]. Feedback should be elicited early in the 5 year revalidation cycle so that if areas for improvement are identified, there is time to implement change and repeat the exercise before the responsible officer has to make a revalidation recommendation.

Outcomes for all surgeons are to be measured using routinely collected data (HES in England, HAS in Scotland and PEDW in Wales), which provides rough indicators on day-case rates, readmission rates, mortality etc. Trusts should make this data available to surgeons they employ. Surgeons without an employer will need to make arrangements to collect this data themselves.

There is no compulsion from the GMC to collect data for appraisal in any particular format, but the E-logbook and Surgeons' Portfolio can be used to collate data over the year. Many Trusts, however, will have commissioned their own electronic appraisal systems into which data can be uploaded either directly or from the surgeon's portfolio.

It is not possible to stay on the specialist register without participating in annual appraisal and revalidation.

After retirement from NHS practice, surgeons will have to decide whether they need to retain specialist registration. If they do, arrangements must be made to remain linked to a responsible officer, collect data relevant to their practice and to undergo annual appraisal.

Supporting Professional Activity (SPA) time is required in order to undertake the training needed for revalidation, please see section 1.2.16.

The CPD requirements amount to less than 1 hour per week on average, and a proportion of this will actually be obtained in study leave time.

However it is envisaged that, in order to participate fully in CPD, 1 SPA will be required in the job plan to allow maintenance of knowledge and skill, quality improvement

activities, mandatory learning and the appraisal process. All other activity should have additional SPA time allocated.

1.1.5.1 Continuing Professional Development

The right of all grades to study leave, with financial support, is defined in the Terms and Conditions of Service.

CPD is now established and participation is a statutory requirement. CPD now forms part of the clinical governance structure within each hospital and, since December 2012, is a requirement for revalidation.

CPD should be broad-based and assist consultants in achieving personal and professional growth while updating them in their fields of responsibility as well as enabling them to acquire the skills needed for new roles and responsibilities[22].

A commitment to lifelong learning is one of the keystones of the Government's paper "A First Class Service"[1]. It is a key principle of revalidation that CPD covers the entirety of a doctor's practice, not just the areas in which they have a personal interest. It may cover clinical, academic and managerial aspects of a surgeon's practice, as appropriate. Reviewing the previous year's CPD and sketching a plan for the coming year should ideally be discussed at the annual appraisal.

CPD can be obtained in external (courses and meetings), internal (locally organised interest groups, invited experts etc.) and self-directed (journals, e-learning etc.) environments. The BOA or a surgical college may accredit courses as being suitable for a specified target audience. Self-accreditation is permitted for education identified as relevant and appropriate but that has not been externally accredited. Indeed, self - accreditation will be the norm for most internal and self-directed learning. It is appropriate, when documenting self-accredited CPD in one's appraisal portfolio, to make a reflective note of what was learned and how this might impact on the surgeon's practice.

The GMC refers doctors to their own specialty standards with regard to the quantification of CPD. For surgeons, 50 hours (points) of CPD should be accrued each year. Since this covers clinical, managerial and academic arenas at external, internal and self-accredited events, it should not be onerous to meet this requirement, which is the same for full or part-time workers.

For example, attending one's main specialist society annual meeting, and the BOA congress for other areas of practice and general professional matters, will more than fulfil the 'external' requirement for the majority of surgeons.

Support for CPD should be provided in the form of time and resources by the Trust Hospital and discussed at the annual job plan review.

An average of ten days' study leave a year should be allowed with both pay and reasonable expenses. In smaller units, appropriate arrangements should be made to cover the consultant's absence.

The quality of service in any hospital depends on the quality of the consultants appointed and their continued education, energy and initiative. To maintain enthusiasm and commitment, encouragement should be given and time provided for

training in new operative techniques as well as education, research and clinical management.

1.1.6 Research responsibilities of a Consultant

The NHS in England has a statutory responsibility to promote health and social care research funded by both commercial and non-commercial organisations (NHS Constitution 2013[29], Health and Social Care Act 2012[30]). The Department of Health mandate to NHS England (Department of Health 2012[31]) requires them to:

> *"…ensure that the new commissioning system promotes and supports participation by NHS organisations and NHS patients in research funded by both commercial and non-commercial organisations."*

'Putting Patients First', the NHS England business plan for 2013/14 – 2015/16[32], stated its intention to develop a research and development strategy and its consultation document indicates a drive to create a culture in NHS England where research is everybody's business[33]. This requires clinicians to actively contribute to research and helps remove barriers to research participation. Research is vital in providing the new knowledge needed to improve health outcomes and reduce inequalities. The Government believes that outcomes will improve most rapidly when clinicians are engaged, and creativity, research participation and professionalism are allowed to flourish [34]. It is crucial for orthopaedic surgeons to make a substantial contribution to clinical research in view of the burden that musculoskeletal disease imposes on the community at large and the NHS[35].

Consultants should keep up to date with any mandatory training that their employing Trust's R&D Department requires of them for participating in clinical research (e.g.: GCP in research training[36]). They should actively engage with ongoing nationally registered portfolio clinical studies or trials in Trauma & Orthopaedic Surgery. Consultants have a duty to engage locally, and where possible regionally and nationally with such studies within the NHS. They should help promote such studies amongst their patients and local communities where required. The time spent by consultants on this activity should be recognised within their annual job plan and appraisal. The Local Clinical Research Network (LCRN) [37] can provide research nurses to help with screening and consenting eligible and willing patients to participate in portfolio studies, thus helping with study recruitment.

More information about the BOA's work in research and further resources are available on the BOA website at http://www.boa.ac.uk/research/

1.1.7 Consultants as teachers

Training surgeons of the future has always been a central role for consultants, although it has not always been an explicit role. Consultants have not been required to undergo formal training as a trainer and their job plans have rarely reflected all the time and effort spent on providing crucial education, supervision and assessment. However, to

maintain high quality training in a service environment, engagement of the highest calibre trainers is fundamental.

The Gold Guide 2010[38] specifies the structure and arrangements for postgraduate specialty training in the UK. The Trauma and Orthopaedics (T&O)curriculum[39] specifies what competencies trainees have to acquire at various levels of their training and the requirements for award of a certificate of completion of training (CCT). The curriculum is available as an app at https://itunes.apple.com/gb/app/t-o-curriculum/id704574097?mt=8

Consultants in T&O may be required to act as trainers[40], clinical supervisors or educational supervisors. The roles are not mutually exclusive. A trainer is someone whose practice contributes to teaching, training or supervision of trainees. It is good practice for a trainer to be a member of their national professional body, not least because the BOA produces the curriculum for approval by the GMC. The clinical supervisor is a trainer who is responsible for overseeing a specified trainee's clinical work and providing feedback during a placement. The educational supervisor is a trainer who is responsible for the overall supervision and management of a specified trainee's educational progress during a placement or a series of placements.

Some consultants may also have additional educational roles such as Training Programme Director, Head of School or positions of responsibility within the Local Education and Training Board (LETB which replaced deaneries in April 2013).

Trainers are required to train, assess and provide feedback to trainees throughout a placement. Trainees are required to complete learning agreements with their educational supervisors for each training placement. Instruments of assessment include Clinical Evaluation Exercise (CEX), Case Based Discussion (CBD), Direct Observation of Surgical Procedures (DOPS) and Procedure Based Assessment (PBA). Trainees' portfolios are held electronically at the Intercollegiate Surgical Curriculum Project website - www.iscp.ac.uk. Logbooks are held at www.elogbook.org. Trainers should familiarise themselves with both websites.

The GMC has published a guide for recognition of clinical and educational supervisors[41] [42]. Unlike in general practice, the GMC is only able to 'recognise' rather than 'approve' trainers in T&O. The document outlines the standards expected for trainers in order to be recognised. Trainers must be adequately trained in teaching and assessment techniques.

Most consultants who train find it a highly stimulating and satisfying experience. As consultants retire, newly trained surgeons are required to take their place. Without consultants who are engaged in training, it would be impossible to keep up the supply of new surgeons who are educated in a robust and safe environment. It therefore behoves consultants to actively engage in training surgeons of the future.

1.2 What do we need to do our job well

1.2.1 The Organisation of a Trauma and Orthopaedic Department

A well-organised and led department is essential for the safe and effective delivery of care for trauma and planned orthopaedic surgery. The size of orthopaedic departments has increased in recent years, which has made their leadership and management requirements more complex.

Each department must have a clear management framework. The primary focus of a well-led department must be to facilitate the delivery of best care to each patient. This means that everything possible is done to facilitate rather than hinder the interaction of the clinician with the patient and the clinicians' endeavours to deliver good care and a satisfactory outcome. This also means that unnecessary bureaucracy that decreases the available clinical time should be kept under control.

1.2.1.1 Lead clinician

In many cases the orthopaedic department will be part of a Surgical Directorate and have a Lead Consultant, but in some instances it may be large enough to be designated a Directorate with its own Clinical Director (See also 2.1.12.6 and 2.1.12.7). The Clinical Director/ Lead is responsible to the Medical Director for the clinical services provided by the department.

The Lead Consultant or Clinical Director is usually appointed by the Trust following agreement with Consultant colleagues. The post is a demanding one.

The Clinical Director should be a unifying force within the department, supporting colleagues' efforts to maintain the highest professional standards in dealing with the health requirements of the local population. They should facilitate the two-way flow of information between clinicians and management so as to foster a sound, supportive and constructive working relationship. The Clinical Directorship is, therefore, an appointment that should be based on management, leadership and communications skills.

The Clinical Director or Lead Clinician should be given adequate time and secretarial support for this work. The BOA recommends that Clinical Directors join the British Orthopaedic Directors Society (BODS), which has an important role in communication between Directors and provides peer discussions and support.

1.2.1.2 Teamwork

Although the Clinical Director/Lead Consultant is likely to take on much of the managerial work of the department, there is too much to be done by one individual.

Other consultants in the department are likely to take on the organisation of or lead for: - clinical governance, audit, appraisal, and/or trauma as well as other official and unofficial posts such as BOA Regional Advisers and RCS England Regional Specialty Professional Advisors.

Management should be made aware that some of these duties can be just as onerous as those of the Clinical Director and such commitments must be taken into account

when considering the staffing requirements of the department. These roles would usually be remunerated through additional SPA time.

1.2.1.3 Meetings

Collaboration between consultants is fundamental to a smooth-running department and so regular meetings are very important. Time should be set aside from clinical activity for all the consultants to take part in the business meeting. Additionally, staff at all levels should be involved to discuss general department issues and time should be set aside for this at least on a monthly basis. All meetings should have a formal agenda and minutes to function efficiently.

1.2.1.4 Training and Education

The department should appoint individuals who are responsible for the organisation of medical education and training at all levels (medical students, junior doctors and StR's, non-medical staff). The education and training lead should be responsible to the Trust's Director of Education or Training for the provision of education and training in the Directorate. This is time-consuming and they should be given time and secretarial support for this work. These individuals should be members of the local Training Committees in Orthopaedic Surgery, School of Surgery and Local Education and Training Board.

1.2.2 Trauma and Orthopaedic Beds and facilities

There have been major changes in hospital infrastructure and in clinical areas over the past two decades along with changes in ways of working[43]. Much of this has been driven to maximise the use of beds (reducing bed numbers) and minimising the patient's time in hospital[43]. Patients appreciate this. We realise that patients can be rehabilitated faster with remarkable reductions in the length of stay[44] and increase in the use of day care and ambulatory care.

Trauma and orthopaedic units across the country differ in their mix of trauma[45] and planned work, so there is no absolute ratio of bed numbers to patients treated nor to consultant numbers. However there are guiding principles, which can be applied to decide the number of beds appropriate for the efficient running of a given clinical service.

1.2.2.1 Drivers

The following drivers have improved the throughput and reduced overall beds needed:

For elective care

- Pre-admission clinics[46]
- MRSA screening prior to admission[47]
- High risk anaesthetic clinics[46]
- Day care
- Ambulatory care

- Same day admission
- Early discharge schemes with care at home[48 49]
- Rehabilitation in community hospitals

For trauma care

- MRSA screen and treat[47]
- MDT pathways for fractured neck of femur patients[50]
- Day care facilities for planned admissions (acute fractures in the upper limb)
- Hand trauma lists
- Care at home
- Planned admissions for trauma

1.2.2.2 Elective beds and facilities

To make efficient use of the beds and run a safe service, the elective unit needs enough beds to manage its patients through the week without cancellations. Principles that help are:

- Spreading specialties who have a heavy use of inpatient beds across the week (e.g. joint revision surgery)
- Ensuring enough side rooms to manage MRSA and MRSA carrier patients and those being treated for infection[43 47]
- Ensuring that HDU beds are available for the management of high-risk patients and that if appropriate there is a post-op area that can look after the patients with increased needs in a PACU.

1.2.2.3 Pre assessment clinics[46].

These:

- allow same day admission for all patients
- should eliminate same day cancellations for medical reasons
- can reduce stay by preparing the patients for discharge and sorting out social issues
- allow for MRSA screening[47]

Pre-assessment clinics should take place at least 2-4 weeks before operation. They should be multidisciplinary[46]. They can be used to assess if the patient is medically fit for surgery, and that they still both want and need their operation. The nursing staff can assess nursing needs and discharge requirements. Physiotherapy and OT planning can make for a smoother discharge. Some pathways of care include education classes before surgery, which have been effective (e.g. for TJR).

Anaesthetic assessment in a pre-assessment clinic is ideal but if this is not possible a high risk anaesthetic clinic can ensure that patients with significant co-morbidity are fully assessed and optimised before surgery and carefully counselled on the anaesthetic risks[46]. There should be a clear referral protocol to such anaesthetic

assessment. Practices with short waiting lists (6-8 weeks) can do pre-assessment in the out-patient clinic reducing visits to hospital.

Beds

For efficiency, orthopaedic wards[43] should be close together and near the theatre. With the advent of same day admission, an admission ward where all patients come to before their operation can improve efficiency in getting patients ready for theatre.

Early discharge schemes/discharge to community hospitals[49] can be successful if carefully set up[51] and properly funded. These need mechanisms to permit early return to the main hospital or OPD clinic in case of any difficulty. Clear lines of communication between the hospital and early discharge/community scheme must be established[49 51].

Ambulatory care/day care

These methods have reduced the bed base and given an improved experience for patients. Their success is dependent on careful pre-operative screening for surgical fitness and assessment of home circumstances. In some units nurses have been appointed to telephone the patient the day following surgery. This has enhanced the service and led to an increase in the types of patient that can be treated in this manner.

Avoiding infection

Orthopaedic surgery outcomes plummet and costs escalate to astronomical levels when implants get infected. All measures must be introduced to keep the risk of infection as low as possible. The screening and/ or treatment of patients before admission for MRSA has reduced infections[47]. The only patients on an orthopaedic ward must be those screened and treated to minimise the infection risk[43]. Patients with infection must be managed so they do not pose a risk to neighbouring patients[47].

Adequate and trained Staff

Successful outcomes of operations need patients to be nursed[43] by orthopaedic nurses and to have physiotherapists and occupational therapists familiar with orthopaedic procedures. The level of care should not deteriorate over the weekend[52]. Outlying patients in wards without skilled nurses and therapists is poor practice, which puts patients at risk.

1.2.2.4 Trauma beds and facilities

Patients are most effectively managed if they are treated by orthopaedic staff who are familiar with their injury and its management[43 45] and the same level of care is provided seven days a week[45 52]. For example this will ensure that vulnerable trauma patients are kept as mobile as possible and do not acquire pressure ulcers[53 54]. There need to be enough beds to cope with the ebb and flow of trauma without the need to put patients in outlying wards. Such patients are put at risk because outlying:

- creates a poorer experience for patients
- can increase the risk of infection
- results in poorer access to trained medical and clinical staff to care for patients
- can lengthen inpatient stay

Patients should be MRSA screened and treated to reduce the risk of infection[47]. There should be enough side rooms to isolate those with infections (MRSA, C Diff and other)

A multidisciplinary approach to elderly patients with fractures (principally hip fractures[50]) – with orthogeriatric services/ physiotherapy and OT input[50] can reduce the length of stay in hospital. It is preferable to have such patients on a specified ward so that the whole team can focus on rehabilitation and safe discharge[49] of this vulnerable group[45]. Schemes to prevent falls[55] and improve bone health should be implemented.

Some care in the community schemes[48] can promote early discharge[49] from the main hospital by providing rehabilitation or a bed while the patient is on bed-rest. Such schemes must have good inter-site communication and have the ability to return patients rapidly for assessment or treatment if there are problems. All involved in such schemes must be clear on the management plan[49].

Day care can reduce length of stay for patients with many acute fractures admitted in a scheduled "planned' manner for fracture reduction and/or fixation. This must not delay treatment.

1.2.2.5 Combined orthopaedic and trauma units or Separate sites.

This is usually governed by local hospital facilities.

All-on-one-site is efficient for medical services, cuts down on travel, and improves continuity of care for the patients as seeing patients is easier and it is easier to review patients with junior staff. The greatest risk is from insufficient beds in the hospital particularly in the winter months when the beds are taken over by medical patients or elective beds are taken over by trauma cases, leading to cancellation of elective work.

A two-site model with screening ensures that patients in the elective bed base are protected and there is more visibility to ensure enough trauma beds. However, a two-site model needs careful setting up to ensure adequate patient review after trauma takes. Clinical time may be wasted in cross-site travel. Cover arrangements for the consultant, when not on site, are needed. A two-site model might also require inefficient and potentially unnecessary duplication of facilities, such as implants, prostheses and sterilization services, when similar instruments and components are needed both for trauma and elective surgery.

Some screened patients can be transferred across site when the demand for beds is high, and this can ease the pressure on trauma bed numbers without halting elective work.

1.2.3 Nursing Staff [56]

A high quality nursing service is essential in meeting the needs of the orthopaedic patient. All orthopaedic patients should receive safe, effective and efficient nursing care by a nurse with a recognised orthopaedic qualification or equivalent experience and training.

Both Orthopaedic and Trauma wards and outpatient clinics should have a funded establishment which reflects the orthopaedic patients' needs and provides agreed levels of nursing staff with the appropriate skill-mix. This should be determined by an

accepted and valid assessment, based on the professional judgement of the senior nurse and consultant to ensure that:

- all registered nurses receive post-qualification orthopaedic training
- skill mix is appropriate to the patients' needs and workload
- each orthopaedic patient receives competent and individualised nursing care, to help them move from dependence to optimum independence as soon as possible
- remedial action is taken when numbers of staff have fallen below pre-determined levels or when the demands for nursing skills increase

Further information/advice on competencies and benchmarks in orthopaedic nursing can be found in the following Royal College of Nursing (RCN) publications:

Benchmarks for Children's Orthopaedic Care (2007)[57]

A Competence Framework for Orthopaedic and Trauma Practitioners (2012)[58].

Experienced qualified orthopaedic nurses can provide high quality pre-admission assessment in dedicated clinics. This service will start the discharge planning process before admission, which not only saves many inpatient hours but also contributes to safe, effective discharge from hospital. The service also provides essential patient education and allows the management of patient expectations. If patients have pre-admission assessment within a hospital-wide/general clinic where nursing staff have no orthopaedic experience/qualification, then a separate information session should be provided by a suitably qualified/trained/experienced orthopaedic nurse.

Where nurses are required to take on procedures previously undertaken by junior doctors, the effects of the increased workload should be assessed and the nursing establishment/ skill mix increased or amended accordingly.

Extended Scope Practitioners (ESP) or Advanced Nurse Practitioners (ANP) work as part of the orthopaedic team and the consultant orthopaedic surgeon retains overall responsibility for patient care. All nurses undertaking these roles must undertake the appropriate training which should include theoretical and practical aspects of the role together with study of legal aspects and ethics[58]. Nurses performing extended roles must adhere to the NMC Code of Professional Conduct[59]. Patients must be made aware of the qualifications and status of those who treat them.

Extended scope nursing posts must be developed with the cooperation and collaboration of senior nursing and medical staff to clarify areas of responsibility and the extent of the role. Parameters of practice will be identified and provision made for the continuing professional development and supervision of the nurse, together with an annual review of the work done. Delegation of care to non-medically qualified staff remains the responsibility of medical staff and is governed by the GMC Good Medical Practice document[2].

The following sections (see 1.2.4- 1.2.6) relate to the important contribution of allied health professionals to the work of orthopaedic surgeons; the professions listed are not inclusive and are regulated by the Health Professions Council[(29)]

Surgeons are reminded that:

"Usually you will refer to another doctor or healthcare professional registered with a statutory regulatory body[60]. When you do not provide your patients' care yourself, for example when you are off duty, or you delegate the care of a patient to a colleague, you must be satisfied that the person providing care has the appropriate qualifications, skills and experience to provide safe care for the patient[2]"

1.2.4 Physiotherapy

Inpatient, outpatient and primary care physiotherapy services are necessary to support an orthopaedic and trauma service. The Chartered Society of Physiotherapy defines standards of physiotherapy practice.[31]

Physiotherapists and physiotherapy assistants are required to keep their skills up to date.[32] Time and resources must therefore be available for post-qualification education both in-service and externally. The size of a physiotherapist's caseload and the number of therapists required to provide the service will depend on many factors including the type of patients/case mix; experience of managing a specific condition; and other non-clinical responsibilities such as staff supervision, teaching and research, plus skill mix of the team, expertise and use of a wide variety of grades including support workers. (For therapists extending their role, the same applies as for nurses – see 1.3)

1.2.4.1 Inpatients

To provide adequate therapy cover for general inpatient services with a non-specialised acute and elective surgical caseload, the following factors must be taken into account:

- a specialised orthopaedic physiotherapist is essential to lead the physiotherapy inpatient service
- staff numbers and type – clinical specialist/assistant/consultant Allied Health Professional (AHP) – are dependent on the clinical caseload, length of stay, bed occupancy rate and the availability of step down rehabilitation beds. A ward containing some of the following types of cases who require more intensive physiotherapy input would demand a higher therapist/patient ratio. Examples of cases where patients require increased input are major trauma including pelvic fractures, specialised spinal surgery, major hand cases and complex revision of joint replacements
- access to outpatient and primary care physiotherapy services are essential for the continuous management of patients discharged from hospital. An early supported discharge scheme is recommended for elderly trauma patients.
- physiotherapists or ESPs/consultant AHPs may be involved in pre-operative assessment clinics
- a seven-day service should be available if an increased throughput of patients is to be achieved. Further reduction of inpatient length of stay can only be achieved with a significant increase in the levels of physiotherapy and assistant staffing
- 24-hour/seven days a week respiratory on-call and emergency service should be available

- appropriate equipment to facilitate effective clinical practice, such as CPM, Tilt table, Cryocuff and specialised walking aids should be available. Equipment must comply with and be maintained to Health and Safety regulations

1.2.4.2 Outpatients

The organisation and staffing structure of an outpatient physiotherapy service should include senior staff with a high level of expertise and specialisation in the assessment and management of musculoskeletal disorders. Prompt access to the service should be available for those patients discharged from hospital and for those managed on an outpatient basis.

Physiotherapists are choosing to extend their scope beyond the traditional field of physiotherapy. For example, there is a growing body of physiotherapists who have received training in injection therapy of common peripheral musculoskeletal disorders.

A growing number of Physiotherapists are becoming Extended Scope Practitioners.[33] Highly trained physiotherapy practitioners working with Consultants are able to offer a triage service to selected patients. It is important to note that a triage service will usually result in a greater number of patients being listed for surgery from any consultant orthopaedic surgeon's clinic. This will have a significant effect on the workload of a Consultant who supervises such a service. Adequate time will need to be set aside to train, to discuss the problems that arise and to monitor this activity.

All extended scope practitioners should have formal, recognised, adequate and structured training to ensure competence in their new roles. The quality of their work should be assured by certification with continuing medical/surgical education, clinical governance, annual appraisal and revalidation.

1.2.4.3 General therapy services

- hydrotherapy should be available for appropriate patients
- specialist knowledge and expertise in the areas of hand surgery and management of patients with neurological, respiratory and paediatric disorders, should be available
- a wide range of walking appliances, splints, collars, supports (e.g. wrist supports) should be available, with access to expertise and facilities for the making of custom splints
- liaison should be established with a Community Physiotherapy Service to ensure ongoing domiciliary management where appropriate
- encouragement and support should be given to undertaking research, the development of innovative practice and the evaluation of projects, which enhance physiotherapy practice and the quality of patient care

1.2.5 Occupational Therapy[61]

Occupational therapy enables people to achieve health, well being and life satisfaction through participation in the meaningful activities of life (occupation)[61].

Inpatient and community based occupational therapy services are required to support an orthopaedic and trauma service. Standards of practice are defined by the College of Occupational Therapists [62], and specific practice guidelines are available.

The occupational therapist works within the multi disciplinary team (MDT) context in orthopaedics and trauma to:

- maximise the patient's functional independence
- set individualised goals at pre-operative assessment
- assist the return to usual activity after planned and emergency admission
- support speedy reintegration of the patient into the community [63]
- decrease readmission rates through assessment and advice on post discharge activity and positioning, including comprehensive falls assessment if relevant[48]

Occupational therapy is key in pre-operative assessment, rehabilitation, provision of equipment to enable occupation, assessment and manufacture of appropriate splints/braces, pre-discharge assessment, including home visits where necessary, and return to work and/or resettlement of patients at home with involvement of carers and/or establishment of community care.

The early and successful discharge home of patients after either elective or trauma orthopaedic surgery is strongly dependent on adequate levels of occupational therapy provision, without which rapid liberation of beds cannot be achieved. Good inter-agency arrangements are also needed for the timely provision of housing adaptations where required.

The level of occupational therapy input in terms of numbers and grades of staff will be dependent on the size of the unit, the nature and complexity of the orthopaedic rehabilitation required and the length of time service users might have to wait for intermediate care beds of places in specialist rehabilitation units. Senior clinical expertise will be required to lead the occupational therapy team, and also for specialist splinting and bracing, spinal, limb reconstruction and complex trauma services.

The orthopaedic surgeon's support is important so that provision may be made for student and postgraduate training and in order that the service is sufficiently well resourced to deliver agreed protocols and standards of care, including targets, on throughput and discharge.

1.2.6 Hand Therapy [64]

The assessment and restoration of function after hand trauma, disorders and surgery are critical to ensure good outcomes for patients. This is provided by hand therapists who may be either physiotherapists or occupational therapists.

They should have a minimum of 2 years dedicated hand therapy experience and be working towards Accredited Hand Therapist (BAHT) status[65 66]. Resources for post-registration education, research and Continuing Professional Development must also be made available.

Hand therapists restore hand function using exercise therapy, manual therapy, electrotherapy, orthotics and functional activity[67 68].

The hand therapist will agree goals with the patient and surgeons, draw up a treatment plan and will report progress of treatment and outcome.

There should be a designated hand therapist, senior physiotherapist or occupational therapist specializing in Hand Therapy to support each hand trauma and elective service.

A total of 1 WTE (Whole Time Equivalent) Band 6/7 Therapist and 0.5 WTE Band 5 or assistant per hand consultant are required[69]. This allocation of time allows therapists' attendance at the hand clinics to implement early treatment, prioritise referrals and assess before and after intervention[70].

Provision of resources, such as appropriate space, equipment and consumables, such as materials for orthoses, is essential to allow the hand therapists to practice effectively.

Hand therapists should be able to refer patients to other services such as counselling, clinical psychology and pain management.

1.2.7 Operating Theatre Facilities

Theatre allocations specifically dedicated to both elective and trauma orthopaedic surgery are essential. One reason for the cancellation[71] of elective operations continues to be the inadequate provision of theatres and staff during the day for emergency cases. Separate dedicated theatre allocation is necessary for musculoskeletal trauma, in which regular scheduled trauma operating time is available every day of the week and for emergency treatment throughout a 24-hour period, with adequate staff as specified[72 73] below in 1.7.1. Dedicated trauma lists, in which there is no competition for space from other surgical disciplines, should be available 7 days a week and be allocated senior surgeons and anaesthetists. Careful consideration must be given to separation (within or preferably between) theatre lists of patients who have been screened and are clean, from those who are infected or have not been screened (usually due to their treatment in an emergency.)

Once a decision has been made to operate on a long bone fracture, the facility should be available within 24 hours. There must be immediate access to the operating theatre for the patient with multiple injuries, dislocated hips, supracondylar elbow fractures, compartment syndrome, Cauda Equina compression and any fracture with vascular or skin compromise.

The former advice that an open fracture should be taken to theatre within 6 hours of injury is no longer considered to be essential, except in cases of gross contamination, such as from an agricultural source. Whilst open fractures should be debrided and

stabilised as early as possible, it is now recognised that it is more important to ensure that the patient will receive the skills of an appropriately skilled surgical team, with all necessary facilities available, to perform a definitive debridement and stabilisation, even if that results in surgery being performed the morning after injury. For this reason, all significant open fractures, particularly those of the tibia, should be discussed with the regional Major Trauma Centre, as should all those patients with multiple long bone or multiple system injuries.

Operations performed after 10pm should be confined to emergency cases, which cannot wait until the following day[45]. A "coding of urgency" [74] should be applied to such cases to allow for appropriate access to the operating theatre. This is only possible if there are enough adequately staffed daily trauma lists[75] both during the week and at weekends, which are supervised by Consultant Orthopaedic Surgeons and Consultant or senior Anaesthetists. With such a system, 80% of all emergencies can be dealt with during the normal working day[76].

With the introduction of digital radiographs, all theatres must have facilities for viewing current radiographs for the duration of the operation. The Association of Anaesthetist's publication "Theatre Efficiency, Safety, Quality of Care and Optimal Use of Resources" is a useful document[77].

Access to current information on surgical techniques must be available within the orthopaedic department. Trusts must facilitate the storage and access of user manuals for the equipment used**.** Operating personnel must have access to this information at all times.

Increasing day-case activity requires enhanced pre-admission clinics and, if the demand exists, separate day surgery facilities. The increasing complexity of procedures undertaken as day-case surgery means that consultants need to provide a substantial part of this service.

Adequate IT systems need to be in place to meet National Joint Registry requirements, enable satisfactory unit audit and provide a source of professional information for surgeons and nurses.

Guidance on the attendance of company representatives in the operating theatre is given in Appendix 6d.

The BOA's recommendations on sterile procedures in operating theatres are given in Appendix 6e.

1.2.7.1 Theatre Staffing

Theatre staff specifically trained in orthopaedic surgery are essential. The minimum support staff, which may include nurses, Operating Department Practitioners and porters, should number five per theatre, in addition to a senior appropriately qualified person in charge. Surgeons must have dedicated skilled assistance. It is the BOA view that a DGH Trauma Service cannot function effectively without at least one orthopaedic trained member of the theatre staff available at all times.

Theatre Managers should ensure that Operating Department Practitioners, Operating Theatre Personnel and/or Orthopaedic Theatre Nursing Staff have reached competency

levels to enable them to assist the Orthopaedic Surgeon. This includes the positioning of the patient, the application of tourniquets and the position of operating lights as well as in the maintenance and use of the plaster trolley to facilitate the smooth running of trauma and orthopaedic lists and emergencies[78].

Orthopaedic and Trauma equipment has become increasingly complex and it is essential that there is stability of the Orthopaedic and Trauma theatre team who are familiar with the equipment. The scrub person is a vital member of the operative team[71], and the efficiency, speed and safety of the operation are as much dependent on a knowledgeable scrub individual as on the surgeon[78].

Teams work most efficiently and safely when acting as a regular team. As often as possible a limited number of people should be involved in one team, especially when conducting complex surgery

1.2.7.2 Clean Air and Ventilation Systems[81]

Ultraclean air (UCA) vertical laminar flow systems or equivalent are mandatory for joint replacements and major orthopaedic implant surgery[82 83].

They should conform to the draft specifications laid down by the Department of Health[47]. We strongly recommend that instrument trays should be prepared in an UCA environment. Equipment should only be uncovered in an UCA system after skin preparation and draping[84].

1.2.7.3 Surgical Equipment

A surgeon's primary duty is to provide the best possible care for his / her patients, but they must do so while making the best use of limited NHS resources. Responsible implant selection and procurement processes are a key part of this. Surgeons should therefore plan their practice to ensure that their Trust is able to obtain the best value possible for the implants used, particularly for high-volume procedures, such as Total Hip or Knee Arthroplasty.

Strategies for efficient procurement[85] should include:

- Selection of proven implants with established clinical results, such as those of ODEP 10A rating[86], unless used as part of research or other formal evaluation programs
- Agreement with colleagues to limit the numbers of hip or knee arthroplasty systems in use in the same organisation in order to avoid duplication of instrumentation and implants, as well as reducing inefficiencies in stock control, ordering and staff training
- Recognition that seemingly attractive offers of consignment stock might actually represent poor value for the NHS; acceptance of consignment systems often results in a duplication of implants and can be associated with high rates of wastage of out-sized and out-of-date stock, the costs of which will be recovered by the relevant company elsewhere from the Trust and the NHS, thereby inflatingthe prices charged for the implants actually used
- Facilitation of effective stock management by appropriate advance planning of lists, especially where additional or unusual implants might be required

- Consideration of whether complex revision procedures done in small numbers at one institution, with consequent high implant-hire costs, might be better referred to another higher-volume centre at which a full range of appropriate implants will be available at lower cost[87]
- Ensuring that relations with implant companies conform to the current Eucomed guidelines[88 89] and that any potential conflicts of interests, as well as hospitality received, are declared to their Trusts, particularly when involved in a tendering process for implants

1.2.7.4 Financial Framework

Surgeons who work in the NHS must be mindful of the financial framework within which they work. They should be aware of the National Tariff and the system of Payment by Results, as well as the existence of the various Best Practice Tariffs[90], which have been introduced in order to incentivise efficient, high-quality care and with which they should aim to comply. They should assist their Trusts in ensuring that appropriate clinical and operative data is available to allow accurate coding in order to allow their Trusts to claim appropriate remuneration for the procedures that they perform.

1.2.7.5 Imaging Facilities

The practice of modern orthopaedic surgery and trauma is impossible without adequate x-ray imaging in theatre. This includes image intensification with memory and the ability to produce a permanent image. Adequate back-up facilities must be available. Surgeons must be familiar with the Ionising Radiation (Medical Exposures) Regulations (2000) (IRMER)[91 92]. Those using mini C-arms[93 94] or fluoroscopy equipment are required to attend a course on ionising radiation that is acceptable to the Radiation Protection Officer of their Trust so that they can be designated as 'practitioners'. Steps should be taken to reduce operators' exposure to radiation, especially the use of mini C-arms for small bone procedures. The reader should also refer to the Public Health England guidelines.

1.2.7.6 Theatre Infection Prevention

The consequences of deep infection following orthopaedic operations can be catastrophic. Infection may lead to loss of the prosthesis, failure of internal fixation or spinal fusion, depending on the type of surgery, and in such cases cause prolonged disability.

Revision surgery following deep infection is technically difficult. Both the operating time and duration of hospital admission may be 2-3 times longer than for primary joint replacement. In summary, revision surgery for infection is time-consuming, very costly and erodes resources available for primary joint replacement.

A low incidence of infection depends upon a number of variables, most importantly operating theatre design, meticulous surgical technique and rigid aseptic discipline within the operating theatre suite.

In recent years the high standards maintained by orthopaedic surgeons have been questioned by some outside the specialty including managers, microbiologists, nurses

and operating department assistants. Some of these individuals have refused to adhere to the exacting standards required for joint replacement.

The early infection rate following total hip replacement in standard operating theatres without modern aseptic precautions was as high as 11%[95], but a combination of prophylactic antibiotics and clean air can reduce the infection rate to 0.3%[82 83]. An infection rate of 0.38% has been reported for uncomplicated primary THR[96], although an infection rate of 1-2% may be more common[97-103].

Based on an analysis of the number of revisions for infected joint replacements and the number of primary joint replacements the percentage infection rate in England and Wales is probably around 1.5%. Data from the Scottish Arthroplasty Project probably show a similar infection rate[104 105]. There is some evidence in the literature that, far from improving, the problem of deep infection is actually getting worse[106].

Papers which show that omitting the use of face masks[107 108] in general surgery, where there is an infection rate approaching 5%, have no relevance to orthopaedic surgery. There is no published evidence to support a relaxation of sterile procedures for orthopaedic surgery. There is reasonable evidence that patient factors are important in infection prevention. Patients with diabetes[100], rheumatoid arthritis and similar conditions are at increased risk of infection. The optimisation of patients prior to surgery makes a significant contribution to reducing infection rates. This optimisation is achieved by such practices as improved nutrition, improved diabetic control, reduction of obesity and stopping smoking[109-111]. Prior to undertaking major implant surgery it is safe for the patient to have a shower. The use of a standard body lotion following the shower has been shown to reduce the dispersal of infected skin scales[112].

The use of ultra clean air theatres, installed, maintained and checked according to HTM 03-01 (2007)[113], is considered essential for any clean orthopaedic surgery involving major implants.

Older operating theatres may have been constructed according to older standards such as HTA 2025 (1994) or an even older Department of Health specification, DV 4 for example. The ventilation frequency of operating theatres deteriorates with time. For all these reasons any older operating theatre should be regularly maintained and tested, with the involvement of the orthopaedic department.

The British Orthopaedic Association holds the following views on operating theatre practice:

- The level of sterile precautions required to perform orthopaedic surgery safely is higher than that for surgery involving the bowel, infected body cavities, contaminated wounds and other soft tissue surgery
- All staff in the operating theatre suite, including the anaesthetic room and corridor, must adhere to existing high standards of theatre discipline and follow established procedures that include:
    a. All staff in the operating theatre should wear theatre clothing, with tops tucked into the trousers
    b. All hair to be kept covered at all times
    c. Masks, which cover both the nose and mouth, to be worn at all times within the operating theatre and any lay-up room

d. Street clothes and clothes worn outside the operating theatre suite, including shoes, must not be worn in proximity to theatres
e. Staff may only enter or leave the operating theatre through clearly identified doors so that air within the operating theatre is not disturbed needlessly
f. The number of people within the operating theatre must be kept to the minimum required to function safely
g. Traffic from dirty areas and within the lay-up room must be rigidly controlled
h. Drapes and gowns must be made of impervious material. Thin cotton drapes and gowns have no place in orthopaedic surgery
i. For joint replacement surgery a well fitting disposable hood, with a well fitting mask and good quality disposable gown or well maintained Ventile type gown should be used
j. There is evidence that body exhaust systems reduce the risk of deep infections

Advice on action to be taken when sterile precautions become dangerously lax:

- Ensure that the operational policies of the local Trust and any policies from the purchaser are being observed
- Draw attention to this publication, the AfPP guidelines and the recommendations of the Healthcare Infection Society
- Draw attention to paragraphs in this statement and ask for scientific evidence expressing a contrary view
- Those suggesting that existing sterile precautions are redundant should conduct a controlled trial comparing deep infection rates following joint replacement using existing precautions with their own reduced precautions. Invite those suggesting a relaxation of sterile precautions to complete a controlled trial approved by the Trust's ethical committee before implementing change
- Conduct your own microbiological testing of theatre air and the environment using settle plates and swabs.
- In extreme situations consider reporting issues to the Care Quality Commission

The BOA will support any member of the Association who is unwilling to operate when patient safety is compromised.

1.2.7.7 Surgical Instrument Decontamination

The effective provision of sterile surgical instruments is self-evidently vital for safe orthopaedic surgical practice. In a traditional orthopaedic operating theatre suite the instruments were washed and sterilised within the theatre department.

As a result of the BSE crisis in the late 1990s there was an urgent requirement to improve standards of instrument decontamination. The approach taken by government at the time was to move to large, central and offsite units funded by contracts with the private sector. Many orthopaedic departments found that these new arrangements caused multiple difficulties, dangers and inefficiencies.

As a result, a less didactic and centralised approach is now taken and there is no reason why hospitals should not provide decontamination near to the orthopaedic operating department, provided that the unit meets modern standards[114 115].

A Department of Health document is available that indicates how decisions on decontamination should be made at local level, entitled:

> *Choice framework for local policy and procedures 01-01 management and decontamination of surgical instruments (medical devices) used in acute care. Part A: the formulation of local policy and choices manual.*
>
> *Department of Health Best practice guidance Gateway reference 17177*

It is common practice that major implants such as joint replacements and intra-medullary nails are provided in sealed individual packs with full traceability.

The provision of small items such as screws in single sterile packs is expensive in terms of time and theatre storage space, it is liable to increase the infection risk to the patient and the practice carries few discernible benefits to the patient (Appendix 7: Smaller items as Single-Sealed items).

The view of the British Orthopaedic Association is that, taking into account all factors, it is better to provide bone screws on a rack, sterilised with the instruments, rather than as single use items in individual blister packs.

The views of the British Orthopaedic Association on instrument decontamination, summed up in a position statement, are very similar to that of the Royal College of Surgeons of England. The position statement is as follows:

- Modern orthopaedic surgery requires complex surgical instrumentation. An efficient decontamination service must ensure that fully decontaminated and functioning instrumentation is immediately available to the surgeon. The service must provide sufficient instrumentation for both planned and emergency procedures and those unexpected or untoward events that may occur during surgery
- If an onsite decontamination facility is not available, anaesthesia for an orthopaedic operation should not commence unless there are two sets of instruments for the procedure present in the department. The only exception to this should be for rarely performed procedures that may require loan equipment or highly specialised equipment which cannot be duplicated
- An orthopaedic surgeon should not commence any surgical procedure without the facility to re-sterilise dropped instruments using a steriliser which is available immediately. The facility may rarely be used, but it must be available
- Orthopaedic surgeons need to work together as a team with nurses, anaesthetists, ODPs and the staff who decontaminate and pack surgical instruments
- The location of the decontamination facility should be as near as possible to the theatre suite to minimise the risks of sub-optimal surgical outcomes or excessive delays due to equipment deficiencies

1.2.7.8 Blood Transfusion and Allograft Tissue Banks

In view of the potential risks and reduced availability of autologous blood transfusion, the principles of blood conservation outlined in 'Blood Conservation in Elective Orthopaedic Surgery'[116] should be followed.

These principles include: regular review of Maximum Blood Ordering Schedules, knowledge of transfusion thresholds, and the appropriate use of peri-operative red cell conservation techniques.

Units undertaking reconstructive work require access to a Bone Bank[117]

All Bone and Tissue Banks must have received accreditation from the Medicines and Healthcare Products Regulatory Agency (MHRA).[118]

Advice on all aspects of Bone and Tissue Banking can be obtained from the British Association of Tissue Banking. [119]

1.2.7.9 Theatre Provision Against Risk of Infection with Blood-Borne Viruses

All orthopaedic surgeons and other personnel in orthopaedic units should undergo immunisation against Hepatitis B virus and may need to have their antibody status checked at intervals. Vaccination is not available for Hepatitis C or HIV at present[120].

Over and above the risks inherent in surgery in general, there is a known higher risk of viral infection to orthopaedic surgeons and associated theatre personnel from the use of power tools, irrigation systems and sharp bone spicules. These may not only produce blood splashes but also generate aerosols that may contain active HIV or HBV and lead to airborne infection[121-125].

It is accepted that all patients should be considered to be at risk with respect to infection with HIV. It is, however important to establish pre-operatively, in so far as this is possible, the extent to which the patient is actually at particular risk of being infected with the virus.

The UK Health Department's Guidance for Clinical Health Care Workers on protection against infection with blood-borne viruses during surgery emphasises the need to protect the mucous membranes of the mouth, eyes and nose from blood splashes. No surgery must be undertaken without splashguard masks or their equivalent. The document further states that those involved in performing, or assisting, major surgical procedures should wear a full range of protective clothing.

Surgeons exposed to material known, or strongly suspected, to be infected with HIV should obtain expert advice on whether post-exposure prophylaxis is required and should refer to the Public Health England guidelines[126].

Orthopaedic surgeons who become infected with Hepatitis B should be aware that treatment might affect their ability to resume exposure prone procedures[127] and should refer to the Public Health England Guidelines and obtain expert advice[120 125 128].

> *"All surgeons with HIV who wish to perform procedures must:*
>
> *Be on effective combination antiretroviral drug therapy (cART) and*
>
> *Have a plasma viral load <200 copies/ml, and*

Be subject to plasma viral load monitoring every 12 weeks and

Be under joint supervision of a consultant occupational physician and their treating physician and

be registered on a confidential national register[129], the UKAP-OHR (UK Advisory Panel for Healthcare Workers Infected with Blood-borne Viruses – Occupational Health Monitoring Register for BBV Infected HCWs)." [127]

1.2.7.10 MRSA

Every Trust should have a local policy on MRSA management to address identification, management and treatment. Surgeons are reminded[126] of the necessity for all healthcare workers for hand-washing between every episode of patient contact[130-133].

1.2.8 Anaesthetic Facilities

A number of reports[45 77 134-136] have emphasised the importance of the availability of a skilled anaesthetist of appropriate seniority, properly equipped and supported, for the surgical task in hand whether it is for elective or emergency operations. Patients with major trauma or with ASA grade III or higher[45] must have a senior anaesthetist, either a consultant or a senior trainee under the direct supervision of a consultant anaesthetist. This underlines the need for an anaesthetic department adequately staffed at all times[77], including weekends. Adequate capacity in the ICU for the injured patient requiring ventilation must also be available.

1.2.9 Outpatient and Fracture Clinic Facilities and Staff

The heavy outpatient caseload in orthopaedic and fracture clinics makes it essential to have purpose-designed and built outpatient accommodation. This must be conveniently sited in relation to the Radiology Department and Plaster Room.

There should be sufficient consulting rooms for the departmental staff to work effectively; the exact number depends on the size of the department.

Individual examination rooms should be sufficiently large for teaching demonstrations to take place.

Separation of rooms by curtains rather than walls is unacceptable when confidential issues are being discussed with the patients.

In addition to examination rooms, areas specifically dedicated to dressings, both clean and contaminated, are required.

The clinics should have adequate staff to allow satisfactory patient flow and to provide a chaperone when necessary.

Consideration should also be given to the particular requirements of special clinics, which may require the presence of other professions allied to medicine such as therapists and orthotists.

All fracture clinics should allow individual assessment of both falls risk and bone health to identify those at risk.

It is essential that patients' medical notes and radiographs are available when required. The absence of this information may adversely affect safe patient care. Managers must ensure that medical record departments are adequately staffed to provide this service.

The BOA recommends that all notes and letters should be transcribed and despatched to the GP within three working days. For medico-legal purposes they should be dated and signed to indicate the notes are contemporary.

The GMC guidance, *Good Medical Practice,* requires doctors to ensure that everything they sign is factual and verifiable. This applies to letters with the doctor's name and those signed by another party on their behalf.

The key principle is that the reader of the letter must not be misled into thinking that the doctor has seen and signed the correspondence.

Some secretaries include a statement on correspondence indicating that the signatory has not seen the final letter e.g. "dictated by Mr/Mrs X and signed in his/her absence: the GMC considers this might be appropriate. (Letter GMC to BOA. 5th June 2007).

Fracture clinic and service guidelines have been published as a BOAST 7[137].

1.2.10 Plaster Room Facilities and Staff

The fracture clinic, outpatient department and Accident & Emergency department all require access to plaster room facilities that are appropriately sited and equipped. The casting room must meet the standards set out in the RCN's competence framework document[58].

At least two, preferably four, fully trained Orthopaedic technicians or nurses with equivalent skills and training are needed in an average DGH.

It is essential that training includes the syllabus for the British Casting Certificate in Casting Techniques validated by the BOA/ the Association of Orthopaedic Practitioners and Glasgow Caledonian University and supported by the RCN [Society of Orthopaedic & Trauma Nurses][138].

The SAC in Trauma and Orthopaedic Surgery requires that, in a centre teaching SpRs, each plaster room should have at least one member of staff who holds this Certificate. Remaining staff should be working towards the qualification.

The BOA recommend that all Casting Room staff undertaking unsupervised application of casts must have a qualification equivalent to the British Certificate in Casting Techniques. *This would include agency Staff on temporary contracts.*

Orthopaedic Surgeons should bring this recommendation to the attention of the Clinical Governance Chairman within their Trust. 24-hour a day access to casting room facilities must be available.

Furthermore, the Patient Liaison Group in their patient standards state that, should an adult or child following injury or operation require a cast, it is expected that it is put on either by, or under the direct supervision of, a member of staff who holds a current British Casting Certificate.

1.2.11 Children's Orthopaedic Surgery

A BOA "Blue Book" on Children's Orthopaedic Services[139] was published in 2006. The following is a summary representing the views of the British Orthopaedic Association:

- District General Hospital Trusts and Tertiary Centres should establish a 'hub and spoke' arrangement appropriate for local needs
- Tertiary Centres must be adequately funded and staffed to provide full provision for increased workload. This is for both incoming secondary work and work as a result of a 'hub and spoke' arrangement with the DGH
- Trusts with Emergency departments receiving children should provide appropriate anaesthetic and orthopaedic cover so that healthy children with straight forward problems can be treated locally
- They should ensure that anaesthetists with appropriate recent training are available to provide a 24-hour anaesthetic service for fit children who have suffered trauma[140]
- General orthopaedic surgeons with trauma responsibilities should continue to treat children with common fractures
- Each District General Hospital should have an orthopaedic surgeon with an interest in children's orthopaedic surgery
- District General Hospital Trusts and Tertiary Centres should ensure that orthopaedic surgeons are encouraged to develop an interest in children's orthopaedics by providing an attractive environment as a result of local arrangements
- Good quality training must be provided in children's orthopaedics to make the specialty attractive and to encourage recruitment

1.2.12 Office Accommodation

Each consultant needs their own adequately equipped office accommodation which should have an external line telephone, internet access and IT facilities to enable them to access patient information[141] on the Trust PAS and PACS system. The consultant should have the ability to discuss cases by phone in privacy with patients, trainees and colleagues. They require a desk to work at where they can leave work and then return. There must be locked storage for files[142], laptops camera and other valuables.

They require sufficient space to be able to discuss matters in privacy with patients, colleagues, trainees and other staff and to be able to dictate letters/reports in privacy

to maintain patient and colleague confidentiality[142]. All orthopaedic offices should be in reasonable proximity to each other and close to offices in which the orthopaedic secretary and other administration staff who manage their practice (clinics/waiting lists) are based.

Consultant staff will be expected to require 1 to 1.5 DCC (Direct Clinical Care) sessions for patient related administration. Some consultants may undertake SPA (Supporting Professional Activity[143], see also 1.2.16) on site. Each consultant therefore, needs an office for between 3-4 PAs per week, and more if they undertake a leadership or management roles. Although there may be pressure to share offices, and this may be appropriate particularly if they work a split site job, the consultant should expect to have sole occupancy of the office when there. Therefore offices shared by more than 3 surgeons for a single site consultant is impractical. Those sharing an office should still expect to have sole use of a desk and storage area. Hot-desking though possible is likely to lead to inefficiencies[144], difficulty in storing documents in progress and increased chances of security breaches for confidential information[16], and is discouraged.

Junior medical staff must have adequate office space with IT facilities in which to perform administrative tasks, audit and research work and meet all the requirements of data protection.

1.2.13 Medical Records

Good organisation of medical records, whether electronic or handwritten, is essential for effective provision of services in orthopaedics and trauma. The principal reason for maintaining medical records is to ensure continuity of care for the patient. However, good medical records are also essential in managing complaints and in defending medical negligence claims.

Records can be considered in three areas: -

- Inpatient records
- Operation notes
- Outpatient records

1.2.13.1 Inpatient Records

Inpatient records should be timed, dated and annotated with the details of the health professional making the entry.

As far as possible inpatient records should be typed; particularly records of decisions/recommendations made on ward rounds.

If the records are handwritten, they should be clear and legible.

The significant details of every contact with the patient should be recorded to include:

- relevant clinical findings
- decision made/actions agreed (together with who has made these decisions)
- the information provided to the patient

Most hospitals have PACS (Picture Archiving Computer System) to manipulate images.

Similarly patient administration systems may be used to store letters, discharge summaries and pathology reports while also containing PACS systems within them.

These systems usually work alongside conventional clinical records i.e. the set of hospital notes.

1.2.13.2 Outpatient Records/Letters

There should be a communication between the Orthopaedic Department and the patient's General Practitioner following every outpatient attendance or inpatient stay.

Many NHS Trusts now copy outpatient letters to patients so that they are able to reflect on the record of the consultation after the event, and, if necessary, discuss any proposed investigations or interventions with their family or GP; this is good practice.

It is particularly useful in surgical practice if a letter from the outpatient clinic contains:

- A clear indication of the diagnosis
- A clear outline of the proposed investigation or treatment
- A clear outline of the potential risks or benefits of any proposed treatments

A review of the letter should give any clinician at a later stage an understanding of the thought processes that have gone into making the decision for that investigation or treatment. There should also be a clear outline of how the risks/benefit analysis has been conducted and concluded.

Ideally, the letter should be received by or available to the GP within 48 – 72 hours of the appointment.

1.2.13.3 Discharge Summary

Following an inpatient stay in hospital the GP should expect to receive a clear letter indicating diagnosis, investigations, treatment, future plans and follow up arrangements.

The GP should be in receipt of that letter within three days of the patient's discharge from hospital.

A barely legible or carbonated sheet of paper with illegible details are not an acceptable means of conveying the details of the hospital admission to the GP and put patients at risk.

1.2.13.4 Operation Notes

There should be legible operation notes (typed if possible) for every operative procedure. The notes should accompany patients into recovery and to the ward and should be in sufficient detail to enable continuity of care by another Doctor. The operation note should include: -

- The name of the following staff should be documented
    a) Consultant responsible for the patient
    b) operating surgeon and assistant

- Anaesthetist,type of anaesthetic used and procedure done
- Date and time
- Operation details

  c) Type of incision
  d) Whether the procedure is elective or emergency
  e) Safety check-list of preparation and precautions i.e. WHO safety checks, VTE prophylaxis, antibiotics, warming etc.
  f) Tourniquet use and its duration
  g) Operative diagnosis
  h) Operative findings
  i) Identification of any implants used including serial numbers
  j) Any problems or complications encountered during the procedure
  k) Any extra procedures performed and the reasons why such procedure was performed
  l) Details of closure technique and whether or not a drain has been inserted

- Clear post-operative instructions including weight bearing status where appropriate and details of post-operative follow up arrangements
- Signature of operating surgeon

The operation notes should be sufficiently detailed to allow another Doctor to assess the care of the patient at any time.

1.2.14 Secretarial & Clerical Facilities and Administrative Workforce

At least one trained WTE (Whole Time Equivalent) medical secretary, with the appropriate range of skills to support the varied activities of each consultant, is essential. High quality secretarial cover must be regarded as crucial for safe and effective service in trauma and orthopaedic surgery.

The secretaries' important role in communicating with GPs must be recognised as well as providing the essential link between the surgical team and the patients seen in clinic, or those on the waiting list. To recruit and retain suitable personnel, they must be appropriately remunerated.

The medical secretary is a vital part of the clinical team and provides support for every patient. They are the first point of contact for the patient with regard to coordinating an admission, surgery, pre-op assessment and outpatient visits. The medical secretary provides the link between the consultant team and the patient.

The consultant relies on the medical secretary for the safe communication of clinical information with GPs and the departments within the hospital in order to deliver safe management of care in both clinic and inpatient settings.

A named medical secretary plays a key role in ensuring a consultant can work at maximum efficiency in all aspects of their work as well as in the management of trauma patients where prompt communication with the GP is vital.

Following attendance at fracture clinic or trauma surgery, it is important that GPs are aware of the nature of the injuries, type of surgery undertaken and the future plans for the patient.

When secretaries are on leave, trained cover must be available.

Clerical support must be available for the purposes of transferring Minimum Data Sets electronically to the National Joint Registry Centre. Support must also be provided to permit participation in other national registries. The relevant clerical/IT support should be made available for clinical director and those with management roles within an orthopaedic department.

It is important that adequate facilities are in place for meaningful audit in the department. A whole time equivalent audit clerk would be required for ten whole time equivalent consultants.

1.2.15 Teaching and Library Facilities

A multi-functional teaching room dedicated to the Trauma and Orthopaedic Directorate, preferably sited within the department, is essential. The room may be used for activities such as trauma handover each morning and must be available for MDT meetings and small session teaching. There should be adequate high quality computing equipment available, which must include access to hospital patient management systems (PACs, etc.).

Simulation is an increasingly important part of Trauma and Orthopaedic training and helps keep patients safe. Therefore each hospital should have a room suitable for simulation events, and all Trauma and Orthopaedic trainees must have access to these facilities.

The Trauma and Orthopaedic Directorate must have up-to-date computing equipment available for both Consultants and trainees. Most Consultants and trainees will access journals and books via the internet. Therefore, provision must be sufficient to facilitate these requirements. Each trust must have appropriate arrangements in place to allow free access to journals and other on-line resources.

In addition, the Trauma and Orthopaedic Directorate should have standard books and operative manuals available for trainees in the teaching room, with 24-hour access.

1.2.16 Supporting Professional Activity

The Consultant Contract 2003 (http://www.nhsemployers.org/~/media/Employers/Documents/Pay%20and%20reward/Consultant_Contract_V9_Revised_Terms_and_Conditions_300813_bt.pdf) clearly states that the role of a consultant is much more than providing direct clinical care. Duties will change throughout a consultants' career but may include:

- Direct Clinical Care
- Supporting Professional Activities
- Additional NHS Responsibilities

- External Duties

The contract clearly recognises the importance of such duties for the benefit of patients' and the greater good of society. There may be conflict with an individual's employer as not all such duties have a direct tangible benefit for the Trust.

National terms and conditions of service clearly state that consultants may expect "typically and on average" a 7.5 DCC to 2.5 SPA split based upon a 10 programmed activity contract.

There is overwhelming evidence that SPA time is an important part of a doctors' professional development.

SPA time is to ensure the Trust and society has a competent, highly skilled, enthusiastic workforce to lead with quality improvement, patient safety and service development. Therefore any such activity which promotes this should be encouraged by the employer.

Recent reports of poor practice (for example Francis report) highlight the importance of SPA time to maintain patient safety and quality.

A guide to job planning produced by NHS Employers and the British Medical Association (BMA) highlights the benefits of effective preparation for both managers and consultants and covers objective setting, information gathering, supporting resources which may be required and some of the contractual provisions relevant to component parts of the job plan (available at: http://www.nhsemployers.org/Aboutus/Publications/Pages/AGuideToConsultantJobPlanning.aspx)

Colleges often produce guidelines relating to SPA activity. The Academy of Medical Royal Colleges expects that a typical consultant will require 1 to 1.5 SPA's per week for revalidation purposes. The BOA would recommend a minimal of 1.5 SPA for core "everything needed to be a consultant".

Many organisations have split SPA time into "core" and "employer directed" SPA time.

The following list will act as a guide to such duties (this list should act as a guide and local agreements may be in place)

The "Core" duties should encompass all duties to ensure that an individual is able to be revalidated and includes activities to ensure a consultant remains up to date. Such duties include:

- Continued Professional Development (requirement as set out by each respective college)
- General reading and keeping "up to date" to maintain excellence and promote patient safety
- Appraisal and revalidation documentation and reports
- Statutory training requirements
- Clinical supervision additional activities (reports / assessments etc)

"Employer directed" activities include:

- Trust mandatory training (discrete from statutory training)

- Audit
- Research projects
- Job planning
- Clinical Governance
- Management and departmental duties (discrete from formal clinical management)
- Service development and planning
- Formal teaching and training and requirement to produce assessments and reports

Additionally use of SPA time for external duties or personal development that do not have a direct tangible benefit to the Trust but ensures an individual is a more rounded doctor and benefits the wider NHS and society cannot be underestimated.

Such SPA time includes (but this list is by no means exhaustive):

- College / University examiner
- Royal College duties
- GMC duties
- NICE
- BMA duties
- Self-development (e.g. managerial course)
- Research papers and editing books and journals etc.

An individual may agree to reduce SPA allocation BUT this must only be with a commensurate reduction in "Employer duties" with a guarantee that a lack of Trust roles cannot affect an individual's appraisal and therefore revalidation. Due to such concerns and potentially patient safety issues, an individual and employing organisation should reflect upon these risks before reducing the "typical and on average" allocation of 2.5 SPA's (based upon a 10 PA contract).

1.3 What do we need to treat patients with complex needs

1.3.1 Essential Support Services

These require adequate facilities and staff.

There is considerable variation throughout the country in availability of support services.

All local protocols should be risk-assessed by management and clinical staff with appropriate "signposting" for emergency ambulance services. Medical staff with adequate experience should conduct early triage of cases whose complexity exceeds local capacity to provide safe care. Essential support services include:

- Anaesthesia with Intensive/High Dependency care[135 140 145]
- Imaging Services, including specialist reporting, which should include 24/7 CT scanning for pelvic, spine and head injury; and urgent MRI, ultrasound and nuclear medicine
- Pathology, bacteriology and haematology

- Access to neurological and neurophysiological diagnostic facilities
- Paediatric services (see 1.2.11) including child protection
- Support from co-adjacent specialties including plastic and vascular surgery, neurosurgery and rheumatology.
- Rehabilitation including physiotherapy (1.2.4), occupational therapy (1.2.5) and hand therapy (1.2.6)
- Aftercare including plaster room (1.2.10) and orthotics
- Medical physics (electronics and engineering)
- Care of the elderly support – specifically to optimise fracture neck of femur management pathways
- Adequate support for persons with physical disabilities
- Social services

In most units there will be an appropriate arrangement for the management of trauma on a seven day a week basis[146].

In the NHS Englandguidance of 2013/14[147], one of the five central themes is that *"The NHS will move to routine services being made available seven days a week"*. Surgeons should be aware of the BOA position statement (Appendix 6a) and ensure that all appropriate support services are in place to maintain quality and safety of patient care

1.3.2 Regional Specialised Services

It should be expected that there will be a need to access specialised services in other hospitals in the region or nationally. It is best for the smooth transfer of patients and access to advice if there are agreed pathways for each of the expected specialised services in the receiving hospitals. Each department should have a list of how each of these services is to be contacted if outside their trust.

As part of this each hospital must have access to the image exchange portal (IEP)[148] for the transfer of images, MDT review and to support on-going patient care. The range of specialised services that should be available are outlined below:

1.3.2.1 Trauma Services

The nature of trauma is such that facilities to refer/get an opinion on/transfer patients should be available 24 hours.

a) Trauma Network

Since April 2012, each hospital will have a designated trauma level status and will be part of a hub-and-spoke network led by a regional Major Trauma Centre (MTC). There will be robust protocols for patient referral and transfer. Standard documentation should be used within the Trauma Network. This should include all notes, both handwritten and typed, all operation notes, all images and clear instructions for follow up arrangements to ensure that patient care is not compromised (See section 1.3.3.5 - on trauma centres).

b) Spinal Services

Those patients admitted with an acute spinal condition i.e. infection, trauma, tumour, and a threatened spinal cord should be referred to and transferred to the regional specialised spinal service[149], which may be provided by either or both orthopaedic and neurosurgeons. Rapid transfer is required so as not to compromise the patient's outcome.

c) Spinal injury service

Early contact with a spinal injuries and rehabilitation centre is essential to avoid unnecessary complications when a spinal cord injury patient is admitted as an emergency[150]. This applies to the first acute admission and subsequent admissions following any further trauma to the spine or limbs requiring admission. A list of spinal injury treatment centres should be held in the Emergency Department.

d) Plastic and limb salvage surgery

Open fractures and severely traumatised limbs should be treated as joint orthopaedic/plastic cases according to the BAPRAS guidelines[151]. Centres that cannot provide combined plastic and orthopaedic surgical care for severe limb injuries should have protocols in place for the early transfer of the patient to an appropriate specialist centre.

e) Vascular service

Hospitals admitting trauma should have a vascular service to manage trauma with vascular compromise. Those that do not have this should have a clear and timely pathway of referral to a centre with both facilities. A more complete guide to the standards for the management of vascular injury associated with fractures or dislocations can be found in BOAST 6.

f) Neurosurgery

There should be an established protocol for the management of head injuries, and an online data link. The NICE guidelines recommend that all personnel treating head injuries should have appropriate training and that there should be a dedicated surgeon in the receiving neurosurgery unit who is available to interpret the online data imaging[152].

g) Cardiothoracic/Maxillofacial surgery

A referral pathway needs to exist. Care needs to be taken that for patients under joint care (i.e. with orthopaedic injuries as well) that both sets of injuries are considered and treated.

1.3.2.2 Other services

a) Tumour services/Radiotherapy/Oncology

Each hospital needs a consultant to take an interest in tumours and their management especially for metastatic disease, even if this interest is such that they are the portal for referral to another centre. A close working relationship

needs to exist between on site oncology services, with an outreach service to allow for the proper investigation and timely and combined treatment of surgery, radiotherapy and chemotherapy.

Primary bone and soft tissue tumours need to be referred to the special centres' bone tumour units. It is essential that there are referral pathways back to those centres if the patients subsequently are admitted with an acute problem to the local unit.

b) Burns unit

The burns service in the UK has 4 networks, Northern, Midlands, South West and London and South East[153]. Each has designated Centres for Major Adult and Paediatric burns, with criteria for referral[153]. Early surgical intervention in major burns facilitates improved outcomes. Each trust should know which unit they should refer to.

c) Residential Rehabilitation Unit

Those with long term on-going disability needs – usually connected with a head injury – may need a period in a Young Disabled Unit. Each unit needs a referral pathway into one.

1.3.3 Specialised Orthopaedic Hospitals

There are currently five specialist orthopaedic hospitals:

- The Royal National Orthopaedic Hospital NHS Trust, Stanmore
- The Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham
- Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry
- Wrightington Hospital, part of Wrightington, Wigan and Leigh NHS Foundation Trust, Lancashire
- The Nuffield Orthopaedic Centre, part of Oxford University Hospitals NHS Trust, Oxford

Between them they perform over 56,000 surgical procedures per annum, many of which are complex and rare. Over 90% of bone and soft tissue sarcomas and 50% of scoliosis cases are treated in these centres.

They also provide a comprehensive musculoskeletal service for patients with more mainstream orthopaedic conditions and carry out approximately 50% of revision knee replacement surgery and 20% of revision hip replacement. Furthermore, they are vital centres for tertiary referrals.

Specialised hospitals are vital centres for specialist training and research. They often form the hubs of managed clinical networks – locally, regionally and in some cases nationally – for a range of conditions.

There are, in addition, a significant number of high volume and high complexity orthopaedic centres/units, which deliver similar complex case mix and tertiary referral services.

Over the past 20 years there has been a huge reduction in the number of these specialist orthopaedic hospitals. Their existence has been particularly threatened by the development of the National Tariff based on an average national cost calculated from reference costs. This is problematic for organisations with a significantly more complex case mix – something that is inevitable in these specialist organisations.

It would appear that Monitor are considering instituting additional 'best practice' tariffs for complex care to reward care given in appropriately specialised settings. They are also seeking to develop more subtle ways of identifying and reimbursing rare and complex care; both developments would be welcomed by highly specialised providers.

Furthermore, the new approach to specialised commissioning outlined in the Health and Social Care Act is something that should benefit both patients and specialist providers.

Clinicians from across the country, spanning all the sub-specialties, are serving on a number of Clinical Reference Groups (CRGs) – most notably for Specialised Orthopaedic Services, Specialised Spinal Services and Trauma. The service specifications produced by the CRGs are funded separately from the Clinical Commissioning Groups and are managed directly by NHS England on the basis of one national contract for each specification which is managed by ten specialised commissioning teams.

Providers will be selected on the basis of their ability to demonstrate their compliance with the core requirements of the specification – for example in orthopaedics these will include having ring-fenced orthopaedic beds and demonstrate the use of loan kit on less than ten per cent of occasions.

The new system will also remove the significant regional differences that were in place previously and ensure that specialised commissioners give orthopaedics equal attention to other high profile areas of care.

Another important part of the core requirement aspect of the specification is that all potential providers, whether independent or NHS, must demonstrate the same quality of provision.

1.3.3.1 Established specialised orthopaedic hospitals

These hospitals may form the hub of managed clinical networks in the areas which they serve. The facilities to care for patients must at least match those recommended for all hospitals: theatre, recovery and anaesthetic facilities together with support staff must be appropriate for the complexity of the surgery undertaken. Teaching, library and research opportunities must be of a quality to justify the designation 'specialised'.

1.3.3.2 Treatment Centres

One of the main thrusts of Government policy to facilitate access to orthopaedic care has been the development of Independent Sector Treatment Centres (ISTCs). Thirty-nine of these were planned in two waves. Thus far, surgeons and other staff

(physiotherapists and nurses) who have not trained in the UK or are not working in NHS Trusts have largely staffed these centres.

The ISTCs have not been set-up or staffed to deal with complex cases and so the effect, in some cases, has been to divert relatively straightforward uncomplicated (and, currently, relatively profitable) cases to these ISTCs, thereby concentrating the complex patients with multiple co-morbidities in the existing NHS Trusts. This system of delivering healthcare is undergoing continuing change.

The concept of 'Choice' has been introduced: patients can choose whether they wish to remain under the care of the surgeon with whom they had already made contact or be treated more swiftly in Treatment Centres. While patient satisfaction surveys have been very favourable for a number of ISTCs, there are many BOA concerns:

- Visiting surgeons are recruited by a variety of agencies and quality assurance is not under the aegis of the Royal Colleges or SAC
- Visiting surgeons are often on very short-term contracts
- Patients are often ill-informed of the treatment pathway
- Follow-up care is erratic
- Policy on the treatment of complications is ambiguous and causes problems to NHS hospitals
- There is no comparative audit of the new system
- As the more straightforward cases are transferred, orthopaedic trainees may lose valuable training opportunities
- There is often no collaboration arranged between ISTCs and NHS Trusts
- The ISTCs may be remunerated on contracted rather than completed work
- Destabilisation of the local NHS Hospital Trust may result in a contraction of consultant appointments and compromise the standard of acute trauma care

The BOA has taken a strong stance, demanding an audit of the ISTCs and an enquiry into the complications that have arisen. The BOA has pressed for the evaluation of all applicants for surgical posts. We expect that these ISTCs will become elective treatment centres staffed by UK-trained surgeons.

The expansion of ISTCs carries a particular risk to the delivery of trauma services in the country. To date, in all but the five specialist orthopaedic hospitals, trauma and elective services are closely integrated and the two need to co-exist, not least as the surgical workforce comprises consultants who are accredited as trauma and orthopaedic surgeons. Increasing separation of elective orthopaedic surgery from trauma surgery by the expansion of the ISTC programme will reduce the pool of consultants who are able to provide a trauma service and risks causing a rapid loss in the trauma skills of those consultants who work exclusively in ISTCs. It will also reduce the training opportunities of specialist registrars in both elective orthopaedic surgery and in trauma. Elective orthopaedics has typically been able to cross-subsidise the less predictable and more expensive trauma services that are provided in any one Trust; a reduction in the ratio of elective to trauma cases might threaten the economic viability of some acute NHS Trusts.

1.3.3.3 Care Closer to Home

There is a tension between providing care closer to patients' homes and the expensive duplication of resources. The local health economy must consider and resolve these tensions. Local provision must also promote joined up provision of care so that the quality of services provided and decisions made are the best possible and so that patients are not exposed to poorer oucomes[154].

1.3.3.4 Fragility Fracture Care and Hip Fracture Care

Elderly patients sustaining musculoskeletal trauma require both orthopaedic care and, for prevention of further injury, falls assessment, bone health investigation and treatment. This should be available in both the in and outpatient setting.

Fragility hip fractures (and those of the proximal femur) have been identified as a group requiring focused treatment due to the significant consequences of this devastating injury both to the patient and to the health economy.

NICE guidance was produced in 2011 following a combined BOA / BGS book on fragility fracture care. In England there is an associated Best Practice Tariff to encourage quality and all patients are collected on the National Hip Fracture Database. This allows benchmarking of hospitals and units, helping to identify poor performance and raise standards.

The BOA Trauma Group take the lead in "hip fracture reviews" to Trusts that request these to provide professional multidisciplinary support.

1.3.3.5 Major Trauma Networks

Major Trauma in England is managed by Regional Trauma Networks. The system started in London in 2010. There are four Major Trauma Centres (MTCs) in London which run an exclusive triage system: transfer times are short (average 16 minutes) and so ambulances bypass all hospitals and patients triaged with major trauma are taken directly to an MTC. This means that orthopaedic consultants working within the London trauma network will be managing a wide spectrum of musculoskeletal trauma but will not normally be involved in the resuscitation or definitive management of patients with major trauma.

The Regional Trauma Networks in England commenced in April 2012. Patients within 45 minutes transfer time are taken directly to one of the 18 MTCs and 4 Paediatric MTCs. Patients with longer transfer times are taken to a designated Trauma Unit where they will receive initial resuscitation and then be transferred onto the MTC (if necessary). Orthopaedic Surgeons working within these Trauma Units will need to be involved in decision-making and early management of major trauma patients and must be competent in this. They will also continue to manage the broad spectrum of musculoskeletal trauma that will continue to be treated within local hospitals.

Regional Trauma Networks also have Local Emergency Hospitals where orthopaedic surgeons will continue to treat the vast majority of musculoskeletal trauma. However, these hospitals and emergency departments do not have the facilities to resuscitate patients with major trauma and so will be by-passed by the ambulance service.

Within the Major Trauma Centres, orthopaedic surgeons play a key role and are an integral part of the trauma team. The orthopaedic surgeon must be familiar with trauma team roles and management and must be available to attend within 30 minutes. There are a number of models of care within different MTCs. In some, the orthopaedic surgeon provides specialist treatment confined to musculoskeletal trauma. In others, the orthopaedic surgeon acts as a major trauma consultant providing holistic care while coordinating other specialties for the entire episode of care. Close liaison with rehabilitation medicine and good communication with consultant colleagues in Trauma Units (when reverse transfers take place) is essential.

Major Trauma Networks have not been developed by the health administrations in Scotland, Wales or Northern Ireland but it is hoped that this will occur over the next five years. Thus, there are no formalised networks for trauma care within these countries but traditional care pathways, usually centred around neurosurgical units, remain in place.

1.3.4 Orthopaedic Workforce

1.3.4.1 Workforce

The provision of musculoskeletal care involves providers in primary, intermediate, secondary and specialist facilities. As the provider landscape changes it becomes difficult to estimate the optimum, or even minimum, number of trained orthopaedic surgeons required for a given population in the United Kingdom[3 155].

The current UK numbers of about 2300 consultants and 1400 non-consultant career grade doctors are unable to provide care for the musculoskeletal problems of the UK population and meet the 18 week referral to treatment pathway. This manpower gap will get worse if there is an increase in demand and if the current trained staff are reorganised to provide trauma and 7-day working.

The previous BOA aim was to have 1 orthopaedic consultant per 20,000 population – we are approaching that ratio in some regions of the UK.

There have been significant changes in patterns of service provision over the past decade, which mean that a simple “head count” of NHS consultants and other career grade staff, even corrected for less than full time (LTFT) working, will not provide an accurate picture of the workforce needed.

1.3.4.2 Demand

There is clear evidence to show an increasing demand for trauma and orthopaedic care – MSK conditions are increasing in the ageing but healthier population.

Even in those of working age, there are currently more than 6.5 million cases of MSK disorder and that is predicted to increase to more than 7 million by 2030[156].

If we look just at the provision of hip and knee arthroplasty, we see a year on year increase of more than 5% and 3% respectively, with a revision burden now comprising more than 11% and 6% respectively.

The service provision, with "traditional" NHS appointments is not keeping pace with this, and the capacity gap is increasing. Current estimates put the capacity gap at around 15%[3]. Neither is there any let up in the demands for trauma care. The aging population's risk of hip fractures will continue to put a major demand on resources, with increasing number of cases predicted over the coming decades[157].

The UK has an increasing need for MSK services, and there is currently a major capacity gap. An increase in consultant numbers and new ways of collaborative working across a range of providers is needed.

1.3.4.3 Megatrends

Several megatrends of ageing, migration, obesity[158], changing expectation and longer working all increase the demand for musculoskeletal treatment. The number of patients with fractures of the neck of the femur[157] and osteoarthritis[159 160] is set to increase.

The population of the United Kingdom is ageing. At present there are 10.3 million people over 65 years in the UK and this will increase by 23% by 2035[161].

At the same time, migration changes the disease burden. The workforce is also changing with feminisation, migration and people working beyond current retirement age[162].

All this will increase the burden of musculoskeletal disorders and trauma in the United Kingdom[3 87].

1.3.4.4 Provision

Surgeons

There has, historically, been a focus on the numbers of trained surgeons, the consultants and Staff and Associate Specialist (SAS) surgeons. With the effective dismantling of the old style "firm" working there is less clarity about the requirements for supporting medically qualified staff: this applies particularly to the junior surgeons in specialist, core or foundation training and the service contribution that can be expected from them[163]. Consultant staff cannot function efficiently, provide care safely, or work in a rewarding environment, if there are insufficient supporting staff.

Hospitals

NHS care is distributed over a wider provider network than before with an increasing proportion of planned orthopaedic procedures being performed in facilities other than the secondary sector. There are three major areas of service provision for planned orthopaedic surgery:

- NHS Hospital
- NHS work contracted out to Private Healthcare Providers (Nuffield, Spire, Ramsey, BMI etc.)
- NHS work done in NHS Treatment Centres (NHS TCs), the evolutionary product of the Independent Sector Treatment Centre (ISTCs), run by private companies but providing entirely NHS services

How surgeons work

The provision of NHS elective orthopaedic work is widely distributed, and consultant staff may also have roles which are far more widely spread than was previously the case with a simple NHS: Private Practice split. Subspecialty interests can pose their own unique workforce questions:

> An example from Foot & Ankle (F&A) surgery will illustrate this: a consultant might be on an 11 Professional Activity (PA) contract with his or her primary employing Trust, doing a combination of trauma and elective F&A procedures. Many surgeons will do a specialist clinic, but they might also do an interface or triage clinic paid for by the Primary Care Trust or by another non-hospital NHS entity.
>
> In such a role the orthopaedic consultant may oversee a team, perhaps with a podiatrist and physiotherapist, all of who are providing a service that sits between primary and secondary care.
>
> Simply counting that consultant's role as a foot and ankle specialist, perhaps 60% of their NHS time, misses a lot of additional service provision.

Trauma and specialist services

There is clearly a need for increased provision of trauma and orthopaedic services, but a mismatch exists with appointments to NHS consultant posts. Both these services are housed within the secondary care sector in NHS hospitals and specialist hospitals. As trauma services need appropriate staffing 24 hours a day, they face the manpower challenge of training, attracting and retaining high quality trained medical staff. This may require reorganisation into provider networks[3 87].

The wider musculoskeletal community

The BOA recognises that expenditure runs well below current demand, and that the Commissioners of services face major challenges and will have to work with a range of providers and practitioners to develop the service. We must help evolve innovative ways of working in musculoskeletal networks, which include working closely with the wider musculoskeletal community including trained AHPs.

We need to work collaboratively and to develop clinical partnerships to ensure an increase in safe, sustainable and effective capacity. This would also provide for career planning and development for those who took up posts within the wider provider networks.

1.3.4.5 Predicting workforce requirements

The BOA works with commissioners, service providers and other partners in the musculoskeletal community to improve patient experience and outcomes of treatments, while supporting surgeons who provide that care.

The BOA has a close working relationship with the Centre for Workforce Intelligence (CfWI), and contributes to data gathering, analysis and interpretation to provide the best advice on the size and distribution of the orthopaedic workforce required to meet demand[3 156].

The SAC in Trauma and Orthopaedics has previously tried to avoid an over-production of trained surgeons[163] coming through the training schemes across the UK. The SAC in T&O and the BOA now work in close collaboration to make the evidence-based case for the size of the annual ST3 intake. This acknowledges both the known capacity gap and the predicted acceleration in demand. Precise calculation is notoriously difficult given the inflow of the medical workforce from Europe and further afield. The BOA is keen that the challenges are recognised, that care provision is appropriately integrated, that any changes are effective in improving the quality of care, and that these effects are independently assessed.

2 GUIDELINES FOR ASSESSING THE WORK OF A CONSULTANT ORTHOPAEDIC SURGEON

Introduction

In this section the BOA offers advice on the workload of a consultant orthopaedic surgeon. It is recognised that the amount of work that orthopaedic surgeons can do is heavily dependent on the facilities, working conditions and supporting staff which are available within the orthopaedic unit.

Deficiency in any of these factors will inhibit both the quantity and quality of work.

The work undertaken by most orthopaedic surgeons is in excess of that stipulated by their contract.

The current contract (Terms and conditions of service 2003, applying to all consultants first appointed after 31st October 2003, as well as those who have opted to transfer to it) offers the opportunity for the surgeon to outline the full extent of their work in all its aspects.

This, when agreed through the job planning process, should result in hospital management having a better understanding of the true workload of a consultant orthopaedic surgeon and ensure that any extra work done is appropriately remunerated.

Changes in postgraduate training, combined with limitations on the hours of work of junior medical staff, have added substantially to the responsibilities, and therefore workload, of each consultant.

2.1 Appointment

2.1.1 Advisory Appointments Committees for Consultant Orthopaedic Surgeons

Consultant appointments are governed by the NHS Appointment of Consultants Regulations 1996 and its accompanying guidelines[164].

It is, therefore, a legal requirement that all employing authorities (except Foundation Trusts) in England, Wales and Northern Ireland comply with these regulations.

The minimum composition of the Advisory Appointments Committee (AAC), as governed by the statute, shall comprise a group of the following five core members:

- a lay member (often the chair of the Trust or another non-executive director)
- an external professional assessor, appointed after consultation with the relevant college or Faculty
- the Chief Executive of the appointing body (or a Board level Executive or Associate Director)

- the medical or dental director of the Trust (or person who acts in a similar capacity at that hospital) or the relevant director of public health for public health appointments
- a consultant from the Trust, who, if available, should be from the relevant specialty
- in the case of appointments to posts which have either teaching or research commitments or both, the committee must also include a professional member nominated after consultation with the relevant university

2.1.2 Advisory Appointments Committee Training

Members of the AAC should have had training in non-discriminatory interview and selection techniques. It is the responsibility of Royal Colleges and Faculties, Trusts and Universities to ensure that their representatives on the AAC have received such training. It is also the responsibility of individual potential members of AACs to attend such training as is required.

Employing authorities are free to appoint additional members providing that there remains both a local and medical/dental majority. University representatives are no longer necessarily part of the AAC, except where the appointment is to a post involving either substantial teaching or research commitments or both. Short-listing of applicants should be carried out by all members of the AAC. Neither the Chief Executive nor AAC chairman has the right to exclude from the shortlist the names of applicants selected by the professional members of the committee.

The College Assessor, as the only external member of a Trust's Advisory Appointments Committee, has a key role in maintaining the standard of consultants appointed to practice and train in the NHS.

2.1.3 Foundation Trusts

Since the introduction of Foundation Trusts in England, such organisations have the power to appoint Consultant posts following local procedures. Although the BOA recognises the right that Foundation Trusts have to do this, they also recognise the importance of the additional members of an appointment committee to ensure an open and fair selection process. The BOA expects all employers to appoint Consultant posts following the above guidelines.

2.1.4 Scotland

In Scotland, the assessment panel is convened by the appointing board to conduct the candidate assessment.

This assessment may include profiling, aptitude tests or multi-station interviews.

The panel must include at least one consultant from the specialty who, where possible, should be from the employing board.

Depending on the nature of the post and the extent of any undergraduate teaching or training duties, the board may include university representation on the assessment panel.

While there is no set limit on the size of the panel, under the regulations it must as a minimum include a Chair, with delegated authority from the Board, an External Adviser and one other consultant from the specialty.

The role of the External Adviser is to advise the recruiting board on each stage in the process. This is to include commenting and advising on the job description, the person specification, the selection methodology and participating in the selection process. This External Adviser is identified from the list of External Advisers maintained by the Academy of Royal Colleges and Faculties in Scotland, and must be external i.e. not employed by the recruiting board, and must be in the same specialty as the post being appointed to.

2.1.5 Contract

In 2003, each of the four home nations negotiated separate contracts for consultants.

The most important differences are outlined in this section, but, for a more comprehensive understanding of the different working patterns, consultants should be fully conversant with the relevant contract document.

The basis of the work carried out by a consultant orthopaedic surgeon is embodied in a contract with the NHS, which is responsible for appointing consultants, establishing terms and conditions of service, workforce planning and disciplinary procedures.

Consultants are advised to obtain the advice of the British Medical Association, either through their Local Negotiating Committee (LNC), their Regional Office and/or Industrial Relations Officer (IRO).

Contracts offered may vary significantly from National Terms and Conditions of service[143 164].

Although National Terms and Conditions remain firmly in place, they may be open to local interpretation. Since the introduction of NHS Foundation Trusts in England, such organisations have the power to employ individuals on locally agreed terms and conditions of service. It is therefore imperative to be vigilant and seek advice.

In all four countries the pre-2003 consultant contract is based on notional half days (NHDs); a notional half-day is a period of three and a half hours flexibly worked. NHD's must not be confused with a 'session,' which may be used to describe the time devoted to an operating list or outpatient clinic.

'Sessions' are often more than a notional half-day but may occasionally be less.

The new consultant contract in England[143], Scotland and Northern Ireland is based on units of four hours, or part thereof, described as 'programmed activities' (PA).

In England, Scotland and Northern Ireland the normal working week consists of ten four-hour units of PAs leading to a maximum of 40 hours.

In Wales the ten sessions have a time-tabled value of 3-4 hours, resulting in an average of a 37.5 hour working week; however, this could extend to 41.25 hours without added payments.

2.1.6 The Job Description for New Consultant Posts

This should be based on the Department of Health circular on the National Health Service Appointment of Consultants Regulations Good Practice Guidance[164] and include details of:

- Hospitals and clinics where services are to be provided
- The work of the department, including the number of consultants, the number and location of beds, intensive care facilities, the number and grade of junior staff and their commitment to the new appointee, the diagnostic and other specialties available and the facilities for the consultant, e.g. personal office and secretarial support
- The post itself, with detailed selection criteria highlighting the subspecialty interest, qualifications, specific skills and experience required. The teaching, research and administrative duties involved, including requirements for audit and appraisal sessions, should also be included
- The weekly work program and emergency commitment
- Details of professional leave and opportunities for continuing professional development (study leave)

The Regional Specialty Adviser of the Royal College of Surgeons in England, Wales and Northern Ireland or a National Panellist in Scotland, in conjunction with the appropriate subspecialty adviser, has the responsibility for approving the draft job description and the selection criteria prior to advertisement.

This ensures that the post contains a proper balance of clinical teaching, academic research and managerial activities and that there are sufficient facilities for these activities to be performed.

The selection criteria are of particular importance to ensure that the training and experience expected of the appointee are appropriate for the particular post. Any significant changes to the post following appointment should be discussed with the Adviser or Panellist who approved the job description.

2.1.7 Description of Contracts

In 2003 the BMA negotiated a new consultant contract[143] with the Department of Health. The vast majority of consultants are now on this contract (more than 98%) although a few remain on the pre-2003 contract. All consultants, regardless of their contract, are subject to the job planning process. The 2003 contract applies in England with a slightly varied version in Northern Ireland. More distinct arrangements exist in Wales and Scotland. For those on the 2003 contract, two primary options exist:

- Whole-time (ten programmed activities)
- Part-time, consisting of one to nine PAs with a minimum of six if the consultant wishes to undertake private practice, often worked flexibly.

Consultants whose posts were advertised after 17 October 2003 have been offered only the new contract.

For those consultants on the pre-2003 contract there are three primary options:

- Whole Time (full time)
- Maximum Part Time
- Part Time

The work commitment of a maximum part-time contract holder is defined as a minimum weekly commitment of ten notional half-days (NHDs). A notional half-day is defined as the equivalent of three and a half hours flexibly worked.

Although the work commitment of existing whole-time consultants is not formally defined, they should be regarded as having the same working commitment as maximum part-timers, i.e. a minimum of ten NHDs per week. Subject to their ethical obligation to their patients in emergencies, priority should be given to NHS work over private work by both whole-time and maximum part-time consultants.

Under the 2003/04 contract, consultants are expected to work six, seven, eight, nine or ten programmed activities of four hours or part thereof. Consultants are expected to outline when, where and what they will do in private practice as part of the job planning process.

The 2003 Consultant Contract is currently under review.

2.1.7.1 Difference between the whole-time and maximum part-time contracts

The key difference between the whole-time and maximum part-time contracts relates to the right to undertake private practice. Whole-time contract holders' income from private practice is, under the old contract, limited to 10% of gross NHS earnings. Maximum part-timers are paid ten-elevenths of a whole-timer's salary and are entitled to earn an unlimited amount of income from private work, and have greater flexibility to undertake it.

The other main difference between the two types of contract is the right of a maximum part-timer to incorporate travelling time into an assessment of working time. A maximum part-time consultant can nominate either their place of residence or private consulting room from where they travel to their NHS hospital appointment. The travelling time from either of these can be applied at the beginning and the end of the time spent at their NHS hospital. For example, if a consultant spent the whole day at the NHS hospital, which was counted as two NHDs (2 x 3.5 hours), then the travelling time would be taken off each of these half days so that they would each be three hours working, assuming a travelling time of thirty minutes.

2.1.7.2 Additional Programmed Activity

In the 2003/04 contract consultants in England, Scotland and Northern Ireland are expected to offer at least one additional programmed activity to be allowed to undertake private practice (Schedule 6 of English TCS 2003). They can, however, elect to continue their private practice without offering another PA but forgo pay progression on the new scale. A distinction should be drawn between private practice,

category three (waiting list initiative) work, which does contribute to the ten percent limit, and category two work, which does not. Private practice is the diagnosis or treatment of patients by private arrangement. Category two work, for which charges can be made, includes examinations and reports on NHS patients not under observation or treatment at the hospital, i.e. medical examinations for life assurance purposes, work for coroners, as well as attendance at Coroner's Court as a medical witness or for a third party in connection with legal action.

Except in posts specifically defined as part-time, consultants are appointed on a whole-time basis. Both consultant and employer may ask to increase or reduce the number of PAs to a maximum of twelve or minimum of six. A period of six months is allowed for existing arrangements to be adjusted, or three months, if adjustments are not required.

2.1.7.3 Part-time Contracts

There have been a number of recent developments with the aim of making work more flexible, realistic and attractive in the NHS. The BMA, the Department of Health and the NHS Confederation are keen to encourage flexible ways of working to improve recruitment and retention of consultants in the NHS. As a result of developments in employment legislation, all parents with children under the age of six or disabled children under the age of eighteen have, since 6 April 2003, had the right to request a flexible working pattern and it is the duty of their employer to consider their application seriously. Part-timers are now entitled to the same hourly rate of pay, access to pensions and entitlements to leave on a pro rata basis, in addition to no less favourable treatment in access to training. Trusts can offer part-time consultants' contracts of between one and nine PAs. (DTI website at www.dti.gov.uk/er/workingparents.htm)

For appointments since 1 January 2004, where there is a request to work part-time in order that the consultant may undertake private practice, the part-time contract should normally be for no more than six PAs. Employers, however, do have the flexibility to agree part-time contracts for more than six PAs. If a consultant wishes to work part-time, mainly for reasons other than private practice but still wishes to undertake some private work, they can be appointed on a contract for more than six PAs. If a part-time contract holder wishes to undertake private practice they will have to offer one extra PA to the Trust. The contract allows for flexibility in the timing and location of the consultant's PAs, which allows them to vary the number of sessions worked each week to cover other commitments, i.e. school holidays, research or higher degree courses. Employers will make serious attempts to accommodate these requests and pay can be calculated on an annualised basis. (DTI website at www.dti.gov.uk/er/ptime.htm)

2.1.8 Components of the Consultant's Workload

The workload may vary considerably between consultants depending on many factors. These include their sub-specialty interest, the proportion of clinical activity resulting from emergency admissions, the demography of the population served and also the

contribution of junior and support staff to the overall workload. Each orthopaedic surgeon will be involved to a varying extent in the following four types of activity:

- Direct clinical care, i.e. emergency duties, elective operating, pre- and post-operative care, ward rounds, clinics, multidisciplinary meetings about direct patient care, and the administration directly related to these activities
- Supporting professional activities, i.e. training, education, continuing professional development, audit, job planning, appraisal, research, etc.
- Additional NHS responsibilities including those of Medical Director, Clinical Director, Lead Clinician, Caldicott Guardian, Clinical Audit Lead and Governance Lead (this list is not exhaustive)
- External duties for a Royal College, British Orthopaedic Association or other national associations, Healthcare Commission, NCAS, BMA, GMC or as an adviser to any of the United Kingdom Departments of Health on matters pertaining to orthopaedic surgery and the surgery of musculoskeletal trauma (this list is not exhaustive)

As a consequence of the European Working Time Directive, some form of partial or full shift system is required for Foundation years 1 & 2, Trust doctors working in training grades and Core and Specialist Trainees ST3-8. Consultants can expect to work in a more consultant-delivered service in the future. Some Trusts may organise 'consultant of the day' rotas to include a physician or general surgeon to manage the emergency admissions to the hospital. Orthopaedic surgeons are unlikely to be incorporated into this type of rota initially, but this may happen in the future. Consultants can expect to be working in hospital more often when they are on duty in future to support their less experienced junior staff, provide a better standard of care and to eliminate horizontal referral of patients and multiple clerking. The new contract recognises this in two ways:

- the payment of an availability supplement
- premium-time work between 7pm and 7am during weekdays and weekends when three hours worked will remunerated at time-and-a-third

Partial shift or full shift working is deemed to be necessary during training in most branches of surgery in the future. For appropriate trainee rotas to be met and consultant shifts to be implemented, acute general hospitals dealing with emergencies will need to be sufficiently busy and therefore large enough to justify operating theatres always being available and consultants being free of other commitments throughout the emergency duty period. Consultants on call should not have any elective PAs and should be available to attend emergencies at will. Theatre activity should be maximised until approximately 10pm.

In analysing the components of the consultant orthopaedic surgeon's workload, all consultant surgeons will be eligible to count the following:

- operating
- pre-admission and outpatient clinics
- ward rounds, including pre- and post-operative as well as post-take ward rounds
- multidisciplinary meetings about direct clinical care
- audit and departmental case recording in accordance with guidelines[165-168]

- appraisal[24], job planning and clinical governance including keeping up to date with relevant journals and literature
- teaching and supervision of postgraduate trainees
- undergraduate teaching
- rostered on-call duties and emergency visits (this will vary particularly with regard to the number and calibre of junior staff on duty) and the associated travelling
- administration and correspondence
- management responsibilities
- continuous clinical responsibility, but not personal responsibility
- travelling time

Depending on the nature of the job plan the consultant may also count the following as appropriate:

- combined clinics with other disciplines, e.g. paediatricians or rheumatologists
- clinics, ward rounds and operating lists appropriate to a 'special interest'
- ward round (where these are undertaken separately from the activities described above)
- supervision of the A&E Department. If this includes the management of acute head injuries in children or adults, the incumbent must be certain that they have had the appropriate training and retains the appropriate skills
- teaching sessions for undergraduates and postgraduates (providing they are not part of concurrent clinical duties)
- research
- administration and committee meetings – unit, regional and national
- Lead Clinician of the department, Clinical Director, Clinical or Surgical Tutor, Medical Director of the Trust, Caldicott Guardian and Risk Management Lead
- Adviser to any of the UK Departments of Health, national specialty associations or Royal Colleges on matters pertaining to orthopaedic surgery and the surgery of musculoskeletal trauma
- a member of any government healthcare agency, an external member of an Advisory Appointments Committee or the Advisory Committee on Clinical Excellence Awards (ACCEA), reasonable quantities of work for the GMC.
- for University or a Royal College, i.e. as an examiner
- trade union activities including those of the Local Negotiating Committee (LNC) and BMA regional and national committees
- appointment by the GMC, Royal Colleges or British Orthopaedic Association to investigate clinical complaints or a service review of NHS hospitals
- appointment by the Joint Medical Consultative Council or a NHS England to sit on an appeals, or independent review panel

2.1.9 Job Plans

A job plan is a prospective agreement between a consultant and their employer setting out the duties, responsibilities, accountabilities and objectives for the coming year and of the facilities available to carry them out.

There is a requirement for every consultant to have an agreed job plan with its integral work programme incorporated into their contract.

The job plan is usually agreed by the consultant and his Clinical Director. However, this may be undertaken by the Medical Director or other lead clinician.

It incorporates a work programme, showing the nature, occasion and timing of the consultant's programmed activities:

- direct clinical care
- supporting clinical activities
- additional NHS responsibilities
- external duties

Job plans should be reviewed annually. An interim review may be necessary if the plan proves overly ambitious or if circumstances change in the workload pattern or service needs change.

NHS Employers and the British Medical Association have worked together to produce an aid to the job planning process "A Guide to Consultant Job Planning"[169].

Each LNC (Local Negotiating Committee) should agree a local job planning policy.

The job planning process is at the heart of the 2003 consultant contract. The guidance champions a collaborative approach between consultants and managers to provide the best possible patient care.

The document enshrines the principle that a job plan must be fully agreed and not imposed. It places a responsibility on both the consultant and employer to:

- Undertake the process in a timely fashion
- Focus on measurable outcomes that benefit patients (SMART Objectives)
- Be be flexible and responsive to changes in service needs

The job plan should stipulate the following:

- What work the consultant does for the employer
- When and where the services are provided
- Objectives for the forthcoming year
- Resources required to fulfil the job plan
- External roles etc.

The use of a diary may aid an individual during the job planning process, particularly to support the requirement for supporting professional activity sessions. There is no contractual requirement to produce a diary record.

The principle of job planning will be the same in England, Scotland, Wales and Northern Ireland.

HC 885[170] sets out the requirement for every consultant to have an agreed job plan with its integral work programme incorporated into their contract.

The job plan is usually agreed by the consultant and his Clinical Director. However, this may be undertaken by the Medical Director or another lead clinician.

A job plan incorporates a work programme, showing the nature, occasion and timing of the consultant's programmed activities. They are typically four hours in length, but may be shorter, and fit in to the following categories of work:

- direct clinical care
- supporting clinical activities
- additional NHS responsibilities
- external duties

Time devoted to private patients, Category 2 work and NHS work which attracts additional fees, e.g. domiciliary visits, should be included in the job plan.

A model format for establishing a working diary and for a job plan has been published by the BMA Consultants Committee for the 2003 contracts.

Detailed general guidance on completion of the job plan is given in the BMA publication The Consultant's Handbook[171]. Consultants are strongly advised to read the handbook in addition to this specialty advice before completing their job plans which will be updated at regular intervals.

The job plan, containing the work programme, will normally be divided into two sections both for those on existing contracts and those electing to take new contracts.

Part A – a timetable of programmed activities for direct patient care, including emergency on call duties. This normally consists of between 5 and 7 NHDs for those on the old contract, and 7.5 PAs in England, Scotland and Northern Ireland and 7 PAs in Wales for those on the new contract.

Part B – a timetable for supporting activities, normally up to 3 NHDs for those on the old contract and 2.5 PAs in England, Scotland and Northern Ireland and 3 PAs in Wales for those on the new contract. It will also have to include a schedule of private practice activity.

It should be noted that the pre-2003 contract is far less time specific than the 2003 one and there are no clear stipulations relating to flexible sessions (broadly equivalent to SPA time).

2.1.10 Fixed Commitments/Programmed Activities for Direct Clinical Care

Depending on the type of contract a consultant holds, along with several other factors, the number of fixed commitments or programmed activities for direct clinical care should be as follows:

- Whole-time consultants remaining on the old contract: normally between five and seven NHDs
- Maximum part-timers remaining on the old contract: normally between five and seven NHDs
- Other part-timers remaining on the old contract: normally at least half of the NHDs specified in the contract

- Honorary contract holders remaining on the old contract: normally at least half of the NHDs covered by the NHS contract
- Whole-time consultants on the 2003/04 contract: seven and a half PAs in England, Scotland and Northern Ireland, seven PAs in Wales
- Part-timers on the 2003/04 contract: the number of PAs may vary according to the contract but normally consists of two-thirds of the contract

Under the terms of the 2003/04 contract, consultants will be expected to undertake a further 2.5 PAs relating to supporting professional activity.

Those on part-time contracts will normally be allowed to have proportionately more sessions for supporting professional activities in a ratio of direct clinical care to supporting professional activities of 2:1.

Both whole-time and part-time consultants who wish to undertake private practice and still be eligible for pay progression will have to offer or take up one extra PA.

If not offered by the Trust, or not accepted by the Trust if offered by the consultant, the consultant can undertake private practice work and still be eligible for pay progression.

Some Trusts may offer PAs to a department as a whole.

Any extra PAs should be offered equally to all members of the department.

Then, even if only one member of the department takes up an extra PA, all other members of the department can, under the new contract, continue to undertake their private work without penalty.

Alternatively, the extra PAs can be shared in rotation by all members of the department.

2.1.10.1 Appeals Process

In the event of failure to agree a job plan, the consultant now has access to mediation. This is initially to the Medical Director but, if an agreement cannot be reached, to an Appeals Panel whose recommendation will be binding in Scotland and Wales but advisory in England and Northern Ireland.

Each consultant should review their own Trust / LNC policy for local procedures.

2.1.11 On-call and other additional work

The Consultants' Committee (CC) Consultants Handbook covers the management of a consultant's on-call and gives advice on the appropriate recognition for work that is additional to a consultant's contractual commitment.

The CC has also produced guidance premium time and resident on-call work, which is summarised below.

The document also contains advice about regular evening or weekend commitments, covering absences of colleagues and management duties.

It is available from regional BMA offices or the CC secretariat.

In general, Trusts should have local policies for such areas as covering the absence of colleagues.

It is worth noting that the pre-2003 contract does not address the issue of on-call in any great detail and consultants who wish to have all their on-call work recognised in a structured way may find it beneficial to transfer to the 2003 contract.

Under the 2003/04 contract, on-call commitments since 1 April 2005 will be recognised by the allocation of up to two PAs each week to on-call duties during normal working hours. This will apply in England and Scotland. In Wales the existing intensity supplement will be paid but at an enhanced rate. Consultants should refer to the contract documents in this regard.

2.1.11.1 Standard time and premium time

From 1 April 2004 work undertaken between 7am and 7pm in England and 8am to 8pm in Scotland will be regarded as taking place in normal working time (Monday – Friday). Non-emergency work undertaken after 1pm on a Saturday and all day Sunday will only be undertaken on a voluntary basis in Scotland. All work undertaken after 7pm and at weekends, including Saturdays and Sundays in England, should only be undertaken on a voluntary basis unless on call.

Premium time is recognised in England as being after 7pm and at weekends and will be remunerated at time-and-a-third, i.e. three hours of work will count as four. In Wales, the emergency work on-call will be counted in three-hour sessions. In Scotland, premium time commences after 8pm in the evenings and after 1pm on Saturday. As in England, the rate of pay will be calculated at time-and-a-third.

On-call availability supplements have been agreed for the 2003/04 consultant contract for England, Scotland and Northern Ireland. They may be as high as 8% of basic salary but depend on the rota frequency and expected consultant response to being called out.

For Category A, a consultant can be required to return immediately to site, or to undertake a complex or proactive a procedure as he would normally carry out. Examples include tele-medicine or complex telephone consultations.

Category B would typically apply to those who can respond by telephone or return to the hospital at a later time. The BOA advises that all orthopaedic surgeons undertaking an on-call rota for trauma should have Category A status so as to maintain a high standard of trauma care and supervision.

If work in premium time becomes onerous and regular, it should be converted to a programmed activity and, if sustained, trigger a job plan review. It may also be compensated for by time off-duty. A consultant's job plan should recognise an on-call rota commitment. The allocation of NHDs or PAs for a rota commitment should recognise the infringement of personal time and the inconvenience this entails.

It should also recognise the requirement to provide telephone advice and recall to the hospital. Any changes in the rota commitment should be reflected by changes to the job plan. This is enshrined in the new consultant contract.

2.1.11.2 On-call rota

Consultants in trauma and orthopaedics should be working no more than a 1:6 rota except in unusual circumstances. For example, in a very small unit or in hospitals serving isolated communities a 1:6 rota may not be possible/appropriate. Consultants should reflect more accurately the amount of work involved in their on-call rota by taking into account absences, i.e. annual leave, study leave, statutory leave, special leave and sickness, as well as the degree of middle tier support, when deciding upon their rota intensity and the allocation of planned PAs or NHDs. A consultant is effectively undertaking 42 weeks of work in a year. In addition, excessive amounts of work undertaken when on call in premium time, which had been regarded as unplanned, should be converted to planned activity. Consultants can be paid for up to 12 PAs. If this means that the consultant may not be able to undertake some of his direct clinical care, this should trigger a job plan review or, alternatively, the consultant may seek to take time off work in lieu of the extra activity undertaken. There is **no obligation** for a consultant to be resident **on-call** at night other than by mutual agreement.

2.1.11.3 Temporary additional NHDs

Consultants continuing on the pre-2003 contract may be contracted to temporary additional NHDs (3½) worked flexibly to undertake work which is not part of their normal contractual duties. The pre-2003 terms and conditions (England) state that they should not normally exceed two NHDs per week, except in exceptional circumstances where work has been undertaken which is clearly in addition to the normal duties agreed under the inclusive professional contract.

All waiting list initiative work and extra theatre/clinic sessions over and above the weekly fixed commitments should attract additional premium payments. The CC recommends that there should be a further separate recognition of the intensity of the work and the time at which it is carried out. This should be done via a contract for temporary additional NHDs or part thereof. [171]

The allocation of appropriate numbers of NHDs for on-call work will be a matter for local negotiation. The CC recommends that a format resulting in the allocation of two NHDs for each NHD worked mainly between 5pm and midnight, and three NHDs to be allocated for each NHD worked, the major part of which, falls between midnight and 8am and for those working at weekends while on call.

The CC recommends that the calculation of hours worked be done on a departmental basis. Consultants are free to negotiate which contract they feel is appropriate for this work if it is ongoing. They should seek advice from their LNC.

2.1.11.4 Resident on-call

Arrangements for consultants to be resident on-call should be made on an individual Trust basis. They should be entirely voluntary and kept separate from any arrangements agreed for rota cover as identified above. This should however be negotiated in advance by the BMA LNC following consultation and agreement from the individuals concerned.

Remuneration for such work should always be kept separate from the core contract and, when regular and predictable, should be made via an additional contract. One-off payments may be more appropriate for an irregular commitment. The whole process should be audited.

In England, a minimum rate of three times the sessional rate, at the maximum on the scale, should apply for each session, a session being defined as four hours' work. The same arrangement has been agreed in Wales. In Scotland, there is no obligation for a consultant to be resident on-call at night.

Where a consultant agrees to be resident at night, the rate payable is for local agreement between the employer and the local negotiating committee. BMA Scotland believes that this should be substantially higher than standard or premium time rates. Individuals may wish to consider time-off-in-lieu rather than additional payments.

2.1.12 Guidelines on Work Programme

The workload of a consultant orthopaedic surgeon will vary depending on a number of factors including local needs, overall service provision and the particular interest and expertise of the individual. However, there are a number of areas that will need to be given consideration when the job plan is drawn up and reviewed (outlined below). The 2003 contract will state the consultant's place of work and state the number of programmed activities that will be undertaken at the place of work. However, there is a facility to agree off-site working for supporting professional activities and direct clinical care such as administration or keeping up to date by reading journals.

Consultants may be able to negotiate up to six hours of supporting professional activity off-site but may have to provide strong supporting evidence of the work done.

2.1.12.1 Outpatients and Fracture Clinics

These include new patients, old patients, fracture clinics, combined clinics and special interest clinics. It is accepted that working practices among surgeons will vary. It is the responsibility of surgeons to see that they are allowed adequate time to talk to and examine the patient to make certain that they can satisfy the doctrine of 'informed consent' with regard to any treatment that may be offered to the patient, to dictate notes together with letters to the referring doctor and to teach junior staff and medical students where appropriate. Pre-assessment clinics are also essential to maximise the efficiency of patient admission and strengthen the informed consent process.

With regard to the workload of fracture clinics, it is difficult to regulate the number of new patients because of the nature of the work. Fracture clinic work should, however, be so staffed and organised that:

- All musculoskeletal injuries which require follow-up should be seen promptly in the fracture clinic
- Fracture clinics should be under the personal direction of a consultant orthopaedic surgeon
- Patients may be seen by orthopaedic practitioners deemed by the consultant orthopaedic surgeon to be of appropriate competence and seniority.

- The care and responsibility remains with the consultant orthopaedic surgeon.

With increasing needs for greater patient involvement at all stages of their care ("No decision about me, without me"), the average time required for each consultation has increased since the last Blue Book was published. This has also been compounded by additional administrative requirements (for example electronic patient records).

The following figures for the time to be devoted to patients in outpatient clinics are considered reasonable, given that proper clinic and ancillary facilities are available:

	Orthopaedic Clinics	*Fracture Clinics*
New Patients	20-30 minutes	20-30 minutes
Review Patients	15-20 minutes	15-20 minutes

The BOA feels that all patients deserve adequate time for assessment and discussion but accept that due to local pressures the ideal times indicated above may not be practical. If locally agreed the following times are considered a minimum for fracture clinics: New Patients 10-20 minutes; Follow Up patients 10 minutes.

These times include the initial consultation and review after x-ray, discussions on informed consent, dictation of notes and necessary telephone calls, etc. Under the old contract this type of work has not been recognised and should be built into the planned programmed activity concerned.

"**Liberating the NHS: No decision about me, without me**"[34 172 173]

The above applies to general orthopaedic and fracture clinics run by a consultant. Specialist and teaching clinics may require an increase of up to 50% in time allowed per patient. Extended Scope Practitioners working in the clinic will also require additional time for advice. Consultants may consider working in a Clinical Assessment and Treatment (CAT) service with support from other healthcare professionals. They may be held in a variety of premises i.e. GP surgeries or community hospitals. An outline of these services can be found in the Musculoskeletal Services framework 2006[154 174]. This should be discussed during the job planning process.

2.1.12.2 Formal ward rounds (1-2 PAs or NHDs)

Under the new contract, this activity is included in all the work related to direct patient care and should include both pre- and post-take rounds, pre- and post-operative rounds, hand-over sessions and formal business ward rounds, including teaching rounds.

Ward rounds are an essential component of a surgeon's work and are used not only to assess and determine the clinical management of patients but to implement the doctrine of informed consent with regard to any intervention or operative treatment. Time is required to discuss the forthcoming procedure or clinical progress of the patient with the junior staff, nursing staff and patients' relatives. Much of this work may also be undertaken in pre-assessment clinics at which the consultant is present. Nevertheless, every opportunity should be taken to discuss the patient's forthcoming

treatment up to and even obtaining consent on the day of admission prior to treatment.

It is not acceptable that all ward rounds take place on an ad hoc basis at odd times of the day or evening when it may be impossible for all members of the surgical team or appropriate nursing staff to be available.

At least one formal ward round should take place each week during the normal working hours of the day. Post-take ward rounds are essential and other ward rounds should be carried out as necessary. A consultant's wish to provide additional ward rounds to improve patient care should be supported by the employer.

2.1.12.3 Operating lists (elective – at least 2 PAs or NHDs; trauma – at least 1 PA or NHD)

It is up to individual orthopaedic surgeons to ensure that maximum proper use is made of available theatre time for elective surgery, both for inpatients and for day case surgery, as well as sufficient trauma lists to meet the anticipated demand of emergency admissions.

Variations in case mix now make it difficult to establish reliable norms but the trend to increased day case surgery has meant that most inpatient elective lists are dominated by major and complex procedures such as joint replacements.

It is important that orthopaedic surgeons are involved in the contracting process with purchasers (Clinical Commissioning Groups) to ensure that there is an adequate flow of elective surgical work to fulfil the requirements of training.

It is also important that sufficient turnover of time is allowed for orthopaedic cases, as this is substantially longer than those in general surgery and sufficient time should be allowed for trainees to operate under supervision. Consultants may need to allocate additional time to surgery and reduce the time given to outpatients in order to balance the stresses and strains on the waiting list.

The BOA recognises that individual surgeons will have variable procedure times and pressure should not be placed upon Consultants to increase the number of cases undertaken within a list.

2.1.12.4 Training and Education

Consultants have responsibilities as educational supervisors for the higher surgical trainees (SpRs, and STs), Trust doctors working in training grades and Foundation doctors and Core Surgical Trainees working with them. They will also have responsibility for ensuring that those staff and associate specialists (SAS) working in the department also have adequate access to training and education.

Consultants may need to delineate a certain number of training lists each week to ensure an even spread of training amongst the trainees. Consultants have a duty to conduct and join in-unit education and training activities, to enable their trainees to obtain both local and distant educational and training opportunities and carefully to appraise and assess them on a regular basis. Sufficient supporting activity should therefore be allocated to training and education under the new contract.

In addition, consultants are being increasingly called upon to train and supervise non-medically qualified practitioners[164 170].

More information about the BOA's work in training and further resources are available on the BOA website at http://www.boa.ac.uk/training-education/

2.1.12.5 Audit, Research, Postgraduate Medical Education, Teaching

Formal clinical audit is now required of all surgeons and regular active participation is essential for a surgeon to be acceptable to the Royal Colleges as a trainer. Audit is regarded as an integral part of the postgraduate educational programme of every surgical department, together with joint clinical/pathological, radiological or interdisciplinary meetings as appropriate to the specialty, journal clubs and formal teaching sessions.

Audit has also become an integral part of the clinical governance agenda of the National Health Service. Clinical governance meetings should form a regular part of a consultant's direct clinical care and become a valuable forum for communicating about safety issues (risk management).

Audit of clinical activity, including demands for excessive out-of-hours activity, should foster change of practice protocols, the evaluation of care pathways, complication rates and consultant job planning. All orthopaedic surgeons should be required to provide information to the National Joint Registry and other National Registries or audits and the appropriate support facilities should be in place in each Trust.

The commitment of a surgical consultant to audit usually comprises a regular monthly session with other formal educational teaching and multidisciplinary activities rostered into the other weekly sessions set aside in the programmes of both consultants and trainees for this purposes.

The Royal Colleges of Surgeons appoint surgical tutors with a wide range of responsibilities for organising and arranging educational and training opportunities for basic and higher surgical trainees (FY2s, STs, SpRs and Staff and Associate Specialists). This appointment requires sessional time allocation by the Trust and secretarial and administrative support from the postgraduate education department.

Approval for surgical training in a hospital is conditional upon the presence of an active well-supported surgical College tutor and Regional Specialty Adviser[175].

All Consultant Orthopaedic Surgeons should undertake or participate in some research during their careers. The BOA recognises that some Consultants may have a particular interest in formal research, so for those who do not undertake research activity, consultant orthopaedic surgeons should encourage the undertaking of research in their institutions and, in particular, by their trainees and other junior staff and do all in their power to facilitate this. All consultants must facilitate the recruitment of patients in national portfolio studies.

2.1.12.6 Management

All consultants have a role in the organisation and management of the hospital service. This starts as team membership of the surgical unit and progresses through active

membership of the clinical directorate to, possibly, the time-consuming and responsible role of head of service, clinical director or medical director. In addition, an increasing number of working parties require clinical input and leadership.

Consultant orthopaedic surgeons should be encouraged to exercise their influence at all management levels, both in their units and trusts, as well as at regional and national level.

Special leave should be granted where appropriate and has been supported by the CMOs in every country. This type of work should be discussed at appraisal and appropriate numbers of supporting professional activities set aside to undertake this work.

2.1.12.7 Clinical Directorates

The introduction of Clinical Directorates in April 1991 has demanded the closest involvement of orthopaedic surgeons in the management of orthopaedic departments. Because trauma and orthopaedics is a high cost specialty, it is vital that orthopaedic surgeons be actively involved in discussions concerning the allocation of funds and the negotiation for contract provisions.

It is the BOA's view that the maintenance of standards of quality within the Directorate is the responsibility of the Clinical Director, in consultation with colleagues. This responsibility includes the maintenance of free access of referral of complex cases to surgeons with special expertise in the appropriate field, even if this requires referral elsewhere.

The new contract states that the consultant will contribute as fully as possible to reducing waiting times and improving access and choice for NHS patients ensuring that patients can be treated by other NHS colleagues or providers. The consultant will make all reasonable attempts to support initiatives to increase capacity in the NHS, including the appointment of additional medical staff and changes to his own working pattern.

Appropriate training and adjustments in clinical commitments and pay are necessary for the Clinical Director adequately to fulfil their function. This work is likely to occupy a variable number of weekly sessions depending upon the size of the department, but a minimum of two supporting professional activities should continue to be allocated to support their clinical work.

2.1.12.8 Emergency Surgery

It is the responsibility of all orthopaedic surgeons to be involved in the management and operative care of all patients admitted under their care. Emergencies constitute an essential and exacting component of trauma and orthopaedic work, usually comprising at least 50% of inpatient admissions, and therefore create a heavy workload.

Resources should be available to enable emergency surgery to be carried out at the time of clinical need. Therefore emergency facilities need to be available for specialty use between 8am and 6pm in addition to twilight (evening) sessions and out-of-hours provision.

A dedicated staffed emergency operating theatre is required at all times.

Training of surgeons is an apprenticeship during which skills steadily increase. In the early stages of training it is not acceptable to allow trainee surgeons to undertake complex emergency surgery without direct consultant supervision or to undertake any but the most minor procedures without the consultant being informed. It is, however, an essential part of the trainee's maturation that, in agreement with their consultant, increasing individual responsibility is taken for the management of cases. This implies less direct supervision. A system of competency-based assessment has been introduced to quantify and qualify a trainee's progress.

The provision of high quality emergency surgical care is of paramount importance and must take priority over elective non-urgent surgical activity. This must be reflected in the allocation of an appropriate number of flexible sessions for those consultants who provide emergency care.

All trauma and emergency orthopaedic admissions should be seen or discussed by the responsible consultant within 24 hours of admission and programmes of duty created to enable this. Consultants who are on call for emergencies should not have any planned patient activity that day.

Duty rotas should now be arranged to enable consultants to be free of all other commitments, both NHS and private, to be available for the care of emergencies. This provides opportunities for close training supervision and training of surgical staff in one of the most challenging areas of surgical practice.

2.1.12.9 Part-time Consultants

Part-time consultants should have their duties allocated for the most part on a pro rata basis. However, there are certain areas where a part-time consultant would be expected to undertake work on the same basis as a full-time consultant, for example in local committee work and in running the department. Appropriate allocation should be made in these circumstances. Meetings should be arranged to enable part-time consultants to participate in the operation of the department. The ratio of direct patient care to supporting clinical activities should be 2:1 under the 2003 contract.

2.2 Recommended allocation

Recommended Allocation in the Work Programme for Consultant Orthopaedic Surgeons under the 2003 contract:

2.2.1 Commitments

2.2.1.1 Direct Clinical Care

Planned activities directly related to patient care, 1 PA = 4 hours:

Planned Activity	PA	Total
Outpatient work	2-3	7.5-10.75
Ward work	0.5- 1	

Theatre procedures	3-4
Administration	1.25 – 1.75
Work during or arising from on-call	1-2

One (1) PA will generate one hour of administration = 0.25 PA.

2.2.1.2 Supporting Professional Activity

Flexible commitments/supporting professional activity may include many of those listed below:

Supporting Planned Activity	**SPA**	**Total**
CPD	1	
Training and teaching	0.5	
Medical education		
Research		
Laboratory work		
Clinical audit		2.5
Management		
Appraisal		
Job planning		
Committee work		
Local Clinical Governance		
External duties		

2.2.1.3 On-call Rota Commitment

See 1.1.1.1 above.

2.2.1.4 External Duties

Time should also be set aside for additional NHS responsibilities and external duties (see 2.4.1 above).

These duties include Royal College duties; General Medical Council; British Medical Association; Intercollegiate examinations (Note – this list is not exhaustive).

The importance of such external duties has been recognised by the Department of Health.

It is clear from the above that no single consultant is able to carry out all of these various components of consultant practice to the same degree and the increasing trend for some consultants within a department to take a lead role in the work of a Clinical Directorate or postgraduate education will mean that their emergency commitment may have to be reduced. This may be a natural progression as consultants move through their clinical career or take on more of the above responsibilities and, hence, less of the emergency commitment.

The requirements of clinical governance, including continuing professional development, may only be achieved by decreasing the number of fixed sessions dedicated to clinical work.

Consultants are advised to refer to the job planning section above. (See section 2.1.9) They may also have to refer to the new consultant contract and terms and conditions and information provided on job planning. If a consultant's overall workload becomes consistently excessive, a diary of extra commitments should be kept so that they can be brought to the attention of the Clinical Director, Medical Director or, if necessary, the Local Negotiating Committee of the BMA.

2.3 The European Working Time Directive

This applies to work done for the consultant's main employer. The current directive is health and safety legislation to protect employees from working excessive hours. The regulations implementing the Directive came into force on 1 October 1998 and, as primary legislation, provide for:

- a limit of an average of 48 hours worked per week over a reference period, normally 6 months
- a limit of eight hours worked in every 24-hour period for night work
- a weekly rest period of 24 hours every week
- an entitlement to 11 hours consecutive rest per day
- an entitlement to a minimum 20-minute rest break where the working day is longer than six hours
- a requirement on the employer to keep a record of hours worked

The BMA UK Consultants Committee and Government health departments have negotiated derogations[176] from the application of some of the above provisions in a collective national agreement for senior hospital doctors.

The legislation is complex. Consultants' duties should fall within the definition of 'work' under the Directive. Normally, category 2 activities, private practice, Royal College and other commitments do not count as work for the purposes of these regulations. However, in certain circumstances Trust management may accept some of these activities being counted as 'work'. The CC position is that all time spent on site except resting, training and education should be counted as 'work'.

Individuals have the right to 'opt out' of protection under the legislation, although this must be formally recorded. The CC strongly recommends that doctors do not opt out of these arrangements and consultants are advised to study the guidance on implementing the European Working Time Directive for Senior Hospital Medical Staff.

Consultants should watch for the possible withdrawal of the derogations by the European Parliament, and a third definition of time may be created which is neither work nor rest. Those working for more than one employer should also ensure that their timetable accurately reflects the hours that they work, including travelling time.

At present the European Working Time Directive does not apply to private practice but there are signs that the European Parliament may be looking to include private practice in the 48-hour working week. Those who do opt out of the scheme should keep an accurate up-to-date working diary[176].

3 Appendices

3.1 Appendix 1 Clinical Commissioning Guidance

- Low Back Pain (2013)
- Pain Arising from the Hip in Adults (2013)
- Painful Deformed Great Toe in Adults (2013)
- Painful Tingling Fingers (2013)
- Painful Osteoarthritis of the Knee (2013)
- Subacromial Shoulder Pain (due for publication 2014)

All published Commissioning Guidance documents can be accessed on the BOA website - http://www.boa.ac.uk/pro-practice/commissioning-guidance-documents/?doing_wp_cron=1401875058.3140120506286621093750

3.2 Appendix 2 BOA strategies

- Restoring your mobility: Doing more and better with less. BOA Practice Strategy 2012 – see website here: http://www.boa.ac.uk/pro-practice/professional-practice-strategy/
- Improving mobility: BOA Research Strategy 2012 – see website here: http://www.boa.ac.uk/research/research-strategy/
- BOA Training and Education Strategy 2012 – see website here: http://www.boa.ac.uk/training-education/strategy/

3.3 Appendix 3 Getting it Right First Time

T Briggs (2012) *Getting it Right First Time*, available online at: www.gettingitrightfirsttime.com

3.4 Appendix 4 BOASTs (British Orthopaedic Association Standards for Trauma)

BOAST number	Title	Year of publication
BOAST 1	Hip Fracture in the Older Person	2012
BOAST 2	Spinal Clearance in the Trauma Patient	2008
BOAST 3	Pelvic and Acetabular Fracture Management	2008
BOAST 4	The Management of Severe Open Lower Limb Fractures – produced as a partnership between the BOA and BAPRAS	2009

BOAST 5	Peripheral Nerve Injury – produced as a partnership between the BOA, BSSH and BAPRAS	2012
BOAST 6	Management of Arterial Injury Associated With Fractures & Dislocations – produced as a partnership between the BOA, Vascular Society and BAPRAS	2014
BOAST 7	Fracture Clinic Services	2013

3.5 Appendix 5 Blue Books

Title	Year of publication
Management of Acute Bone and Joint Infection in Childhood: A Guide to Best Practice - produced as a partnership between the BOA and BSCOS	Under revision
Blood Conservation in Elective Orthopaedic Surgery	2005
Code of Practice for Experts Preparing Reports in Personal Injury and Other Cases	2006
Primary Total Hip Replacement: A Guide to Good Practice - produced by the British Hip Society	Under review
The Initial Care and Transfer of Patients with Spinal Cord Injuries	2006
Children's Orthopaedics and Fracture Care – produced as a partnership between the BOA and BSCOS	2006
Total Knee Replacement: A Guide to good practice - produced as a partnership between the BOA and British Association of Surgeons of the Knee	2007
The Care of Patients with Fragility Fractures – produced as a partnership between the BOA and British Geriatric Society	2007
Best Practice for Primary Isolated Anterior Cruciate Ligament Reconstruction – produced as a partnership between the BOA, BASK and BOSTAA	2009
Standards for the Management of Open Fractures of the Lower Limb - produced as a partnership between the BOA, British Association of Plastic, Reconstructive and Aesthetic Surgeons	2009
Elective Forefoot Surgery: A Guide to Good Practice produced by BOFAS	2010
The Management of Nerve Injuries	2011
Metastatic Bone Disease: Guide to Good Practice - produced as a partnership between the BOA, British Orthopaedic Oncology Society	Under review

In addition, the BOA has produced two guidelines outside of the Blue book process:

- A 'living document' regarding VTE Prophylaxis in orthopaedic surgery (2014)
- An 'Expert opinion', Blast and ballistic injury: Principles of management (2014)

3.6 Appendix 6 BOA Position statements

The BOA has produced position statements, reproduced here in full on

- 7-day NHS Care
- Women in trauma and orthopaedic surgery
- Enforced change of prostheses
- The Attendance of Company Representatives in the Operating Theatre
- Sterile procedures in operating theatres
- Orthopaedic Surgical Instrument Decontamination

3.6.1 Appendix 6a: Seven-day NHS Care: A British Orthopaedic Association Position Statement

The British Orthopaedic Association gives a cautious welcome to moves for seven day a week care, under the principle that 'The right patient should receive the right treatment at the right time', but highlights important considerations.

The NHS Commissioning Board produced 'Everyone Counts: Planning for Patients 2013/14', its planning guidance for 2013/14[1]. One of the five central themes of this is 'NHS services, seven days a week'. The report explains:

> *"The NHS will move towards routine services being available seven days a week. This is essential to offer a much more patient-focused service and also offers the opportunity to improve clinical outcomes and reduce costs."*

In addition, the Academy of Medical Royal Colleges (AMRC) produced a report 'Seven Day Consultant Present Care' on the same theme. The British Orthopaedic Association fully supports the Academy of Medical Royal Colleges's (AoMRC's) three standards of patient-centred consultant led care set out in this report, namely that:

- Hospital inpatients should be reviewed by an on-site consultant at least once every 24 hours, seven days a week, unless it has been determined that this is not necessary for the patient
- Consultant-supervised interventions and investigations along with reports should be provided daily if the results will change the outcome or status of the patient's overall care before the next 'normal' working day. This should include interventions which will enable immediate discharge or a shortened length of stay
- Support services both in hospitals and in the primary care community setting should be available daily to ensure that the next steps in the patient's treatment, as determined by the daily consultant review, can be taken. It also acknowledges that it is outside its scope to look in detail at community services

These are entirely consistent with our six guiding principles for trauma and orthopaedic surgery that:

- The right patient should receive the right treatment at the right time
- Investigations should only be undertaken if needed. They should be based on good evidence and should not replace a considered and informed clinical assessment
- The choice of surgical intervention should be appropriate to the condition of the patient and to its severity
- Patients, rather than clinicians or commissioners, should be able to choose their treatment for a non-urgent disorder, having been provided information on a variety of alternatives from multiple sources
- Each treatment must be accompanied by:
    a. A good evidence base
    b. An assessment of its expected duration and magnitude of benefit
    c. A risk assessment
    d. A clear definition of the required inpatient and outpatient care
- Any changes, including those in service delivery, must:
    a. Improve the quality of care
    b. Be effective

However, the BOA considers that there are a number of important caveats that will need to be considered in relation to 7 day provision of services:

- Levels of staffing need to be considered – for example if a Consultant's ward round is to be effective, they must have the backing of a comprehensive team
- Support facilities need to be considered – for example, access to scanning, tests and rehab facilities are required
- It is important that the practice does not become a tick-box exercise and that quality of service remains the priority
- While care must be consultant-led, the consultants have to be able to delegate work to colleagues
- Discharge of patients at weekends is an issue that gives cause for concern, and relies on the availability of social/community care services, which should also be factored in

3.6.2 Appendix 6b: Women in trauma and orthopaedic surgery: A British Orthopaedic Association Position Statement

The BOA's vision is a vibrant, sustainable, representative orthopaedic community delivering high quality, effective care to fully informed patients.

We fully appreciate that our current gender balance in trauma and orthopaedics lags behind other medical specialties, based on the latest report published by the GMC. That report also highlights that between 2007 and 2012 the number of women consultants in the UK T&O workforce increased by 69%; nevertheless, by 2012 they represented just 5% of the overall total. There are clear signs of increasing numbers of women at the trainee stage, which are considerably higher than they were 10-20 years

ago. As these women progress in their careers, the proportion in the workforce as a whole will increase. We welcome this wholeheartedly and continue to focus on redressing the balance.

We have contributed to these shifting trends through our significantly increased profile and promotional activity in recent years. However, we are not complacent, and some of our current activities in this area include:

- A project to promote T&O surgery as a career to undergraduate medical students, in which we are ensuring that we reach out to women and include female role models within publicity
- Collaborating with the Centre for Workforce Intelligence on a workforce stocktake that takes into account the increasing proportion of women in the specialty and any potential effects this may have on part-time working or career breaks
- Strong support for the Royal College of Surgeon's work on 'Women in Surgery'

For more information on our vision, visit: www.boa.ac.uk

GMC (2013) The state of medical education and practice in the UK, is available online at: http://www.gmc-uk.org/SOMEP_2013_web.pdf_53703867.pdf

3.6.3 Appendix 6c: Enforced change of prostheses: A British Orthopaedic Association Position Statement

The below is a summary of discussions by the BOA's Professional Practice Committee (PPC) and the BOA Council and represents the BOA's position on the enforced change of prostheses being imposed by some Trusts.

The British Orthopaedic Association agrees with the need for rationalisation of implants as long as this is evidence based, has the support of local clinicians and does not expose our patients to increased risks.

Such rationalisation must be handled carefully.

The BOA Council and the PPC had questions about the cost effectiveness of such rationalisation and consider this not yet established. Alterations to practice of this nature must, in our view, be led by Consultant Orthopaedic Surgeons and have the agreement and confidence of local surgeons.

When enforcement of a change of this kind occurs:

- at a rapid rate
- and/or without an adequate transition process in place
- and/or without appropriate training

surgeons may be made to operate with unfamiliar equipment. This can put our patients at risk. This has been observed in Scotland and reported by several registries for hip and knee replacements.[1]

The BOA Council and Professional Practice Committee remain concerned that the learning curve for new implants exposes patients to an increase in risks. We urge our hospitals to specifically address this in their implementation plan.

Some principles regarding introduction of changes to practice were discussed, which could be relevant in these situations:

- There should be appropriate training
- The training may include education packages, workshops including the use of cadaver surgery when appropriate, observations of live surgery and, where requested, mentorship whereby a surgeon experienced in the use of the implant visits to advise the surgeon training with the new implant or technique
- At the end of the training process the surgeon should feel confident that the same result can be achieved with the new implant/technique without worsening outcome or increasing risks
- Surgeons should not be asked to use their study leave in order to retrain for the use of new prostheses
- There should be an adequate and agreed transition process, during which the surgeon may undertake a reduced number of procedures, as initially each procedure can be expected to take longer than it would if the surgeon were using a familiar prosthesis
- There must be a careful audit of the first 20-30 implants to reassure our patients that their outcome was not compromised
- If the Consultant felt there was an impact on the outcome of the operation or on the risks of the procedure, the patient ought to be informed. This would be no different from when the consultant was introducing a new implant or technique themselves. All doctors must discharge their duty of care to patients and perform procedures within their competence with adequate training, mentoring and assessment

3.6.4 Appendix 6d: The Attendance of Company Representatives in the Operating Theatre A British Orthopaedic Association Position Statement

The attendance of company representatives in the operating theatre can be a positive advantage to the surgeon, the company and, not least, the patient. It is a practice whose incidence is unknown but which all parties would like regularised, albeit without a burden of unnecessary bureaucracy.

[1] Peltola M, Malmivaara A, Paavola M. Introducing a knee endoprosthesis model increases risk of early revision surgery. Clinical Orthopaedics & Related Research 2012;470(6):1711-7;
Peltola M, Malmivaara A, Paavola M. Hip prosthesis introduction and early revision risk. A nationwide population-based study covering 39,125 operations. Acta Orthopaedica 2013;84(1):25-31

There are implications of such attendance for the representatives and their employer, the surgeon and the hospital, from the aspects of patient consent, medical indemnity, the exact role of the representative in the operating theatre and whether the representative should or should not be allowed to scrub. Other issues to be considered include the training necessary for the representative, as well as health screening.

1. Informed Consent

There are serious implications for the patient if personnel whom the patient would not normally expect to be present in the operating theatre are in attendance. The normal expectation of a patient would include hospital employees in the operating theatre such as surgeons, anaesthetists, nurses, and other operating department personnel, but not a company representative. It is essential therefore that, wherever possible, if a company representative is to be present in the operating theatre to advise or merely observe, the patient should be aware of the possibility and give informed consent. The possibility of company representatives attending the operating theatre should be included in a pre-admission booklet which could explain for example that one of the people attending an operation might be someone whose main expertise is the equipment in use.

It is important for the patient not be put under undue pressure and there should be as much advance warning as possible. The possible advantages to the patient of such attendance (i.e. immediate advice to the surgeon and operating team of the use of specialist equipment) should be fully explained but the patient should be given a choice as to whether a company representative attends or not. The purpose of such attendance is to offer advice to the consultant and the team on the use of specialist equipment and for this reason is therefore in the patient's interest.

It is appropriate that if the patient gives informed consent for the attendance of a company representative this fact be recorded in some part of the hospital record. This is particularly important in the event of an unforeseen occurrence.

2. Competence of the Representative

It is the responsibility of the manufacturing company to ensure that the representative attending the operation is fully competent to offer appropriate advice on the equipment being used.

3. Active Participation in the Surgery

a/ It is expected that the representative should neither actively participate nor act as an assistant in the surgical procedure, other than to demonstrate or advise on the equipment to be used. The representative is present in the operating theatre merely to facilitate the use of specialised equipment and/or receive training.

b/ It is the responsibility of the company to ensure that its representatives are thoroughly versed in conduct within the operating theatre. The representative

should understand the basics of sterility and asepsis, correct procedures such as where it is safe to stand in the theatre, etc. If the representative is to scrub the company should ensure that the representative has received appropriate training in scrubbing and sterile technique.

4. Health Screening

It is the responsibility of the company to ensure that their representatives attending operating theatres are protected by appropriate health screening procedures. Representatives should have received hepatitis immunisation.

6. Confidentiality

It is the responsibility of the company to ensure complete confidentiality concerning the surgical procedure being witnessed. All information gleaned during the attendance in the operating theatre must be considered confidential and privileged.

7. Indemnity

The surgeon and the company must satisfy themselves that appropriate arrangements have been made to indemnify the representative attending in the operating theatre in the event of any adverse incident.

3.6.5 Appendix 6e: The British Orthopaedic Association recommendations on pooled waiting lists

Continuity of care forms an important part of medical care and is highly valued by patients and surgeons alike. The therapeutic relationship of one patient with their consultant throughout their course of treatment should remain the norm to which we aspire.

All surgeons have a duty to manage their practice to avoid developing an excessive waiting list. However, under the circumstances of inequity of supply and demand that can often be found in the NHS, consultants within the same Trust may develop very different waiting lists for the same procedure, imposing highly variable waiting times for the same procedure within the same hospital.

Strategies for managing uneven waiting lists might include the reorganization of a consultant's job plan, either temporarily or more permanently, if this can be done without disadvantaging others.

Alternatively, pooling of waiting lists, in which patients who are waiting for a number of pre-agreed procedures, may be switched from the care of one

consultant to another after their initial outpatient appointment, may also be used to mitigate such inequity.

Pooling carries the following possible benefits:

- Helps to ensure equality of waiting times for patients who are waiting for some types of routine surgery
- Enables orthopaedic departments to balance the work load between consultants with similar clinical interests
- A properly organized pooling framework still allows those patients who want a specific choice of surgeon to remain under their chosen consultant's care

Nevertheless, pooling, if done without attention to detail, may also be associated with a number of risks:

- Depersonalisation of the relationship between patient and their consultant, with the potential for particular added stress if the patient does not meet their new surgeon until the day of surgery
- Possible lack of clarity regarding the responsibility for the patient's care
- Confusion or disagreement regarding the indication for surgery, possibly leading to duplication of assessment and investigation, thereby causing unwarranted delay in treatment

In order to avoid such risks, the following principles should be applied when waiting lists are pooled:

- There must be agreement within the department concerned of which procedures are suitable for pooling and of which surgeons have the skills to perform them. Not all procedures are suitable for pooling.
- The surgeon listing a patient for surgery should indicate if that specific patient is suitable for pooling
- The patients must be made aware at an early stage that their surgery might not be performed by the surgeon who has listed them
- Patients may express a choice to remain under the care of their original listing surgeon.
- Patients undergoing inpatient surgery, such as primary hip or knee replacement, should attend a pre-assessment clinic where they will have the opportunity to meet the consultant who will be responsible for their care. Thereby the transfer of care from one consultant to another should occur at the pre-assessment visit and not after
- Patients undergoing in-patient surgery should not meet their treating consultant for the first time only on the day of admission
- Patients undergoing routine day-surgery, subject to local protocols and agreements, will not normally need to be seen again before admission, but will, as routine, need to be seen by the operating surgeon on admission
- Responsibility for the care of the patient transfers to the consultant who accepts the patient either in pre-assessment clinic or on admission in the case of day-surgery

To assist consultants please see the Department of Health's guidance on the choice of named consultant-led teams, and how this correlates with pooled waiting lists, which can be found here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216148/dh_130450.pdf

Appendix 6f: Orthopaedic Surgical Instrument Decontamination: A British Orthopaedic Association Position Statement

1. Modern orthopaedic surgery requires complex surgical instrumentation. An efficient decontamination service must ensure that fully decontaminated and functioning instrumentation is immediately available to the surgeon. The service must provide sufficient instrumentation for both planned and emergency procedures and those unexpected or untoward events which may occur during surgery.
2. If an onsite decontamination facility is not available, anaesthesia for an orthopaedic operation should not commence unless there are two sets of instruments for the procedure present in the department. The only exception to this should be for rarely-performed procedures which may require loan equipment or highly specialised equipment which cannot be duplicated.
3. An orthopaedic surgeon should not commence any surgical procedure without the facility to re-sterilise dropped instruments using a steriliser which is available immediately. The facility may rarely be used, but it must be available.
4. Orthopaedic surgeons need to work together as a team with nurses, anaesthetists, ODPs and the staff who decontaminate and pack surgical instruments.
5. The location of the decontamination facility as near as possible to the theatre suite will minimise the risks of sub-optimal surgical outcomes or excessive delays due to equipment deficiencies.

3.7 Appendix 7: Smaller items as Single-Sealed items

Reasons why provision of smaller items, such as individual bone screws, as single sealed-packed items might not be appropriate include:

1. Increased operating time is required to select, check and then individually open multiple screws; in addition to prolonging anaesthesia, this might translate to an increased infection risk
2. Increased movement of theatre staff will be result from each action of opening and giving to the scrub nurse each screw

3. The action of the circulating nurse in tipping a screw onto the sterile tray area will disrupt laminar flow and will carry a risk of skin shedding from the nurse, as well as the possibility of contamination of the edge of the screw on dropping from its unsterile outer wrapping
4. Storage of adequate number of screws in individual boxes is inefficient and requires a very large trolley to contain the same number of screws that can be fitted into a small rack; aside from the extra storage space needed within the department when not in use, many theatres will not be sufficiently large to allow the trolley containing the screws to be in the theatre itself during surgery, necessitating further avoidable movement as the circulating staff have to move to a separate area to retrieve the screws
5. The major stated justification for the provision of separately packed screws is to ensure traceability of components in case of batch manufacturing defects. This argument is unfounded and bears no relation to the same argument as applied appropriately to prostheses for joint replacements; the screws concerned will invariably be used for fixation of fractures, osteotomies and other circumstances when the patient will remain under clinical review for the functional life of the implant. As soon as the fracture has united, the screw has no function and therefore it is difficult to envision a situation in which the screw might need to be “recalled” or removed, aside from clinically apparent problems such as infection or painful prominence.

In summary, the provision of small items such as screws in single sterile packs is expensive in terms of time and theatre storage space, it is liable to increase the infection risk to the patient and the practice carries few discernible benefits to the patient.

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Helping Consultants get things right. The BOA Advisory Book. Editor J Dias. London: The Professional Practice Committee. The British Orthopaedic Association, 2014.

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