British Orthopaedic Association

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A national review of adult elective orthopaedic services in England

GETTING IT RIGHT FIRST TIME

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List of abbreviations

Articular Surface Replacement	ASR
American Academy of Orthopaedic Surgeons	AAOS
Any Qualified Provider	AQP
Best Practice Tariff	BPT
British Association of Knee Surgery	BASK
British Hip Society	BHS
British Orthopaedic Association	BOA
Care Quality Commission	CQC
Chartered Society of Physiotherapy	CSP
Clinical Commissioning Groups	CCGs
Clinical Reference Group	CRG
Commissioning for Quality and Innovation	CQUIN
Defence Medical Services	DMS
Department of Health	DH
District General Hospital	DGH
Early Supported Discharge	ESD
European Federation of Orthopaedics and Traumatology	EFORT
European Working Time Directive	EWTD
General Practitioner	GP
Getting it right first time	GIRFT
Health and Social Care Information Centre	HSCIC
Health Education England	HEE
Health Quality Improvement Partnership	HQIP
Hospital Episode Statistics	HES
Integrated Clinical Assessment and Treatment Services	ICATS
International Society of Arthroplasty Registers	ISAR
Local Area Team (of NHS England)	LAT
Medical Defence Unit	MDU
Multidisciplinary Team	MDT
Musculoskeletal	MSK
National Centre for Health Outcomes Development	NCHOD
National Commissioning Group	NCG
National Health Service	NHS
National Health Service Litigation Authority	NHSLA
National Hip Fracture Database	NHFD
National Hip Fracture Database Advisory Group	NHFDAG
National Institute for Health and Care Excellence	NICE
National Joint Registry	NJR
National Osteoporosis Society	NOS
North East Quality Observatory System	NEQOS
Orthopaedic Data Evaluation Panel	ODEP
Osteoarthritis	OA
Patient Reported Outcome Measures	PROMs
Provider Enablement Group	PEG
Public Health England	PHE
Quality Innovation Productivity and Prevention	QIPP
Royal National Orthopaedic Hospital	RNOH
Referral to Treatment	RTT
Specialist Orthopaedic Alliance	SOA
Total Hip Replacement	THR
Total Knee Replacement	TKR

Foreword

This pilot, which has been funded by the medical directorate of the Department of Health and NHS England and undertaken by the British Orthopaedic Association (BOA), marks an important landmark for the National Health Service (NHS) and the orthopaedic specialty in particular. As trauma and orthopaedic surgeons, we take justifiable pride in the life transforming surgery we provide for our patients, and all of us strive for excellence. For the first time, we have used the available evidence base to look objectively at the quality and efficiency of our orthopaedic services. We have identified areas of unjustifiable variation in practice and have seen how we can improve and enhance the quality of the care we deliver. There will be savings as a result of moving to more efficient practice supported by the best evidence, although the key driver is quality.

> If we are to make meaningful change and improve care for patients this will have to occur in the hospital setting.

This stocktake of our practice is vital because of the demographic and economic challenges that we face. The population is ageing and living longer. By 2030 over 15.3 million people in the UK will be over the age of 65 years. As a consequence, we will see an ever increasing demand on our health resources, which are already stretched. Orthopaedic referrals from GPs to secondary care providers are increasing by 7-8% per annum and show no signs of slowing. It might be asked if this is a growth of appropriate referrals - but it is important to note that MSK triage services have been widely used across the country for some time and yet demand has continued to grow. Furthermore one might add that greater use of 'shared decision making' should be employed, however, hip and knee replacement surgery have a great deal of evidence to prove their safety and effectiveness and are unlikely to be amongst the group of procedures that patients would hesitate to opt for if in possession of more facts regarding the risks and benefits. Moreover, trauma and orthopaedic surgeons make up 33% of the surgical workforce and are responsible for 25% (rising towards 26%) of all surgical interventions, and further demand will increase this.

> During the GIRFT visits we have travelled 16,935 miles and met 1634 surgeons and 409 managers.

This comes at a time of world financial austerity, and despite real term increases of Government NHS funding, demand will continue to outstrip supply. In the first quarter of this new financial year, over 17 trusts have already been reported to the Secretary of State for financial deficits. Foundation trusts have posted a combined deficit of £167 million. It is likely that the number of hospitals that are financially challenged will increase. We are in a 'perfect storm' of ever rising demand and financial austerity.

Whilst the focus has been on commissioning as the method of controlling costs and demand, this will take a number of years to achieve and may result in unintended consequences. However, the need for change is more urgent if we are to maintain high quality, timely care for our patients, in an NHS that will face a funding shortfall of billions within a few years. Provision of care accounts for 80% of the cost, and it is here that we believe that by doing things differently and uniformly, we will improve quality of care, reduce complication, and save significant sums of money, thereby enabling us to do more for less. We can make a difference such that commissioners, wherever they are, can purchase a pathway of care knowing it is both high quality and best value.

Although elective orthopaedics and spinal surgery have been used as the national pilot this methodology will work for all other specialties. Orthopaedics has dataset quality dashboards and the National Joint Registry (NJR) which, when married with the Hospital Episode Statistics (HES) dataset, provides a comprehensive description of hospital practice.

We have visited 120 Trusts (205 hospitals) in England since September 2013 with a unique dataset on orthopaedic care and outcomes for each trust. We have driven over 17,000 miles, met 1,634 consultants and over 400 senior managers and chief executives. These visits have been peer-to-peer reviews of orthopaedic care and welcomed by all.

The result of these visits and interactions informs this report and is a call to clinicians, managers, healthcare workers, commissioners, and politicians to work together in a collaborative way to ensure that all our patients receive the highest standards of orthopaedic care wherever they reside. This will involve both optimisation of service delivery and a fundamental change in practice to reduce variation, contain costs in prostheses, and use the evidence base that is available. This will require real leadership with clinicians, who we need to re-empower, and managers working 'shoulder to shoulder'. If clinicians are disenfranchised and their voices are not listened to, they will disengage. If this happens we will not make the changes that are necessary, and we will see decommissioning and rationing of services.

The methodology used in this pilot has been shown to be effective and 'to deliver'. Indeed we were invited into Wales to undertake a GIRFT review of their orthopaedic services in November 2014, and are in discussions with Northern Ireland. Furthermore, we believe that this methodology can be used as a template for the other specialties in the secondary care sector. The variation in practice across the country gives us the opportunity to improve quality and reduce cost.

I would like to take this opportunity to thank all those who set up, ran and gave us access to the specific datasets which have made this project possible, particularly the NJR, Litigation authority and my British Orthopaedic Association colleagues both past and present. In particular, we would like to congratulate all who turned up on the day to give us their views of service delivery.

This report provides a methodology for improving the way we provide care, by re-engaging with clinicians to deliver cost effective clinically driven change. We must not lose this moment. We must act now to optimise what we do to enhance patient care, make ourselves more efficient, and reinvest the resultant savings back into orthopaedics, so that we can deal with the burgeoning demand for our services.

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1. Executive summary

144 acute trusts (over 220 hospitals) received individual reports reviewing quality and output metrics relating to their total orthopaedic and spinal activity - over 650,000 episodes of care using established and agreed metrics (Hospital Episode Statistics [HES], National Joint Registry [NJR], Clinical Dashboards and data from National Litigation Authority).

To date, 205 hospitals have been visited by the GIRFT team and appointments are in place with the remainder between now and the end of the year. All trusts that have not yet been visited have been asked to validate their data and provide context to enable this report to highlight and discuss the major themes that have emerged from the project.

Many interesting statistics have been generated that highlight undesirable variation in practice around the country. These include:

- 23.7% of surgeons performing hip replacements undertook ten or fewer procedures per annum.
- 16.1% of surgeons performing knee replacements undertook ten or fewer procedures per annum.
- 54.6% of surgeons performing unicondylar knee replacements undertook five or fewer procedures per annum and 73.3% performed 10 or fewer procedures per annum.
- 80.1% of surgeons performing knee revisions undertook ten or fewer procedures per annum.
- 60.1% of surgeons performing hip revisions undertook ten or fewer procedures per annum.
- An average of 10.4 shoulder replacements were performed in trusts.
- Average Orthopaedic Data Evaluation Panel (ODEP) 10A Acetabular use is…20.2% (Range 0% to 100%).
- Average ODEP 10A femoral use is… 79.8% (Range 13% to 100%).
- Average return to theatres within 30 days following fractured neck of femur surgery is… 2.37% (Range 0% to 7.29%).
- Average litigation claim cost per spell is... £59.56 (Range £0 to £151).

Many of the minimum activity volumes quoted here are low, despite extensive evidence that higher volume activity leads to better outcomes[2-9] and when considered alongside the overall substantial volumes in many hospitals, it is clear that local recognition of skills and service delivery are necessary to drive up general standards and achieve volume related improvements.

[1] *The Orthopaedic Data Evaluation Panel (ODEP) was set up to monitor NICE guidance on primary hip implants in 2002 and hip resurfacing in 2004. The Panel provides on-going assessment of hip implants to benchmark both hip femoral stems and hip acetabular cups against NICE guidance providing a rating for implant survivorship and data submission quality. A 10A device is one which is judged by the ODEP to have demonstrated 10 years of high quality outcome data.*

[2] *Pamilo, K., Peltola, M., Paloneva, J., Makela, K., Hakkinen, U., Remes, V. Hospital volume affects outcome after total knee arthroplasty. A nationwide registry analysis of 80 hospitals and 59,696 replacements. Acta Orthopaedica 2015; 86 (1): x–x 1*

[3] *Chowdhury, M.M., Dagash, H. & Pierro, A. (2007) A systematic review of the impact of volume of surgery and specialization on patient outcomes. British Journal of Surgery, 94 (2), 145-161.*

[4] *Com-Ruelle, L., Or, Z. & Renaud, T. (2008) Volume d'activité et qualité des soins dans les établissements de santé: enseignements de la littérature. Paris, IRDES.*

[5] *Davoli, M., Amato, L., Minozzi, S. et al. (2005) Volume and health outcomes: an overview of systematic reviews. Preventive Epidemiology, 29 (3-4 Supplement), 3-63. [In Italian] Helm, E.A., Lee, C. & Chassin, M.R. (2002) Is volume related to outcome in health care? A systematic review and methodological critique of the literature. Annals of Internal Medicine, 137 (6), 511-520.*

[6] *Jain, N., Pietrobon, R., Guller, U., Ahluwalia, A. & Higgins, L. (2005) Influence of provider volume on length of stay, operating times and discharge status for rotator cuff repair. Journal of Shoulder and Elbow Surgery, 14 (4), 407-413.*

[7] *Judge, A., Chard, J., Learmonth, I. & Dieppe, P. (2006) The effects of surgical volume and training centre status on outcomes following total joint replacement: analysis of the Hospital Episode Statistics for England. Journal of Public Health, 28 (2), 116-124.*

[8] *Murray, G.D. & Teasdale, G.M. (2006) The relationship between volume and health outcomes: a review. Scottish Medical Journal, 51 (1), 17-22.*

[9] *Shervin, N., Rubash, H.E. & Katz, J.N. (2007) Orthopaedic procedure volume and patient outcomes: a systematic literature review. Clinical Orthopaedics and Related Research, 457, 35-41.*

A full breakdown of the national level data for the project is available in the Data Supplement that accompanies this report

Emerging themes include:

- There are many exemplar units (usually those with high clinician engagement and management buy in) providing a high level of cost effective service, despite pressures from emergency admission.
- There is significant variation in practice around the country and within the same population - catchment areas.
- There is substantial evidence in the literature around the subject that indicates that surgeons undertaking low volumes of specific activities may well result in less favourable outcomes as well as increased costs.[2-9]
- There is evidence of a failure to follow the evidence of the NJR and other registries in decision making around implant choice, especially in those aged over 68 years.
- There is evidence of huge inexplicable variation in choice and cost of implants.
- Hospitals are spending on average £200,000 for loan kits per annum.
- Some trusts were unaware of the financial opportunity lost by not complying with the requirements of the best practice tariff for arthroplasty i.e. the cost of failing to meet the targets for NJR or PROMs compliance or PROMs measures of health gain.
- The loss or lack of ring-fenced orthopaedic beds, laminar flow theatres, and experienced orthopaedic theatre teams has had an extremely negative impact on morale and outcomes with demonstrably higher infection rates.
- Experienced dedicated orthopaedic theatre teams have become the exception. The complexity of surgery and the relative inexperience of many staff rotating through create a potentially unsafe and poorly productive environment. Indeed some complex surgery is still performed in non laminar flow theatres increasing infection risk.
- Closer working with clinical coders is needed.
- There is widespread poor use of national data, good and bad, at local level to inform change.
- In some cases these reports have demonstrated poor practice and have acted as ALERTS. If ignored, this failure to act should be seen as an ALARM. The true alarm is when no one pays attention or takes action.
- The anecdotal information gathered at the many meetings held across the country suggested strongly that better outcomes appear linked to more successful working relationships.
- Morale and clinical engagement are directly and inversely related.
- Despite the widespread use of Integrated Clinical Assessment and Treatment Services (ICATS) there remains a significant capacity gap to provide a timely 18-week pathway to complete elective orthopaedic care. Over 50% of the visited trusts failed to achieve18 weeks. This remains a real challenge for most trusts, even those currently demonstrating good demand and capacity planning.
- The relationship with local Any Qualified Provider (AQP) is critical - good relationships add value and poor relationships significantly undermined local NHS providers. Where a collaborative approach has been used we have seen sustainability of local services.
- AQPs carrying out elective orthopaedic surgery often do not accept emergency admission or re-admission. The local NHS Trust is expected to provide this care, which can be prolonged and expensive.
- Some AQPs 'cherry pick' the fit patients and simple elective cases. Complex cases and patients with multiple co-morbidities are frequently sent to the local NHS trust. These admissions can be prolonged and expensive and many providers reported that they often found the costs of delivering more complex care to be in excess of the national tariff price.
- AQPs do not provide trauma services, which represent 50% of the orthopaedic workload. A number of providers reported that a significant shift of activity to the independent sector had impacted on their ability to sustain the critical mass and expertise needed to deliver a comprehensive trauma service.
- The training of future generations of orthopaedic surgeons is potentially at risk with AQP services taking elective orthopaedic surgery to outside providers who provide little training.
- A renewed focus on quality and evidence should serve to engage and empower clinicians to take more of a lead in addressing the issue of variable quality and practice.
- There is significant variation in rehabilitation practice.
- A lack of emphasis on rehabilitation in the immediate post surgery period for hip fracture patients on acute wards.
- A lack of integrated commissioning and provision of rehabilitation services and social services.

Table 1 - GIRFT at a glance

Problem: Costly (quality of Life and ££). Variation in Outcome in Adult Elective Orthopaedics.

Caused by	Solutions	Case study of Best Practice
VARIATION IN PRACTICE OF PRACTITIONERS ■ Not following evidence on implants ■ Low volumes of specialist work ■ Ownership of collecting outcome data and coding ■ Different approaches to networking, multidisciplinary team (MDT), joint working and trauma	PROFESSION ■ Clinical leadership ■ Follow guidance ■ Sub-specialise to deliver minimum numbers ■ Mentoring etc. ■ Appraisal ■ Revalidation	■ Royal Devon and Exeter ■ Princess Alexandra, Harlow ■ Leicester ■ The specialist units
VARIATION IN PATHWAY AT PROVIDERS ■ Ring-fenced beds, theatres and staff ■ Governance ■ Support for data quality and accuracy of outcome data and coding	PROVIDERS ■ Reconfiguration to facilitate critical mass and minimum volumes in networks ■ Ring-fenced beds, theatres and staff ■ Litigation - pre-emptive planning	■ Northumberland ■ Bolton ■ South West London Elective Orthopaedic Centre ■ Bournemouth ■ The specialist units
VARIATION IN MANAGEMENT MODEL ■ Top-down management combined with poor clinical engagement ■ Loss of clinicians morale	MANAGERS ■ Management model - shoulder to shoulder with clinicians	■ Wirral University Hospitals ■ Royal Devon and Exeter ■ Guy's and St Thomas' ■ Mid Yorkshire Hospitals
VARIATION IN COMMISSIONING ■ Lack of focus on minimum critical volumes across a region/potential network ■ Inconsistent and unregulated relationships with AQPs	COMMISSIONERS ■ Commission collaboration to achieve critical mass ■ Total collaboration across providers to encourage critical mass and healthy collaboration/competition with focus on sustainability and quality	■ London

2. Introduction

The first 'Getting it right first time' (GIRFT) report, published in 2012, considered the current state of England's orthopaedic surgery provision suggesting that changes could be made to improve pathways of care, patient experience, and outcomes. The report took the view that this approach had the potential to deliver a timely and cost effective improvement in the standard of orthopaedic care across England, whilst maintaining timely and effective care for patients as demand increased due to a population that was ageing and living longer.

NHS England funded the GIRFT project as a national professional pilot across England (see Appendix 1 for project structure diagram). The project, which was hosted on behalf of the British Orthopaedic Association (BOA), at the Royal National Orthopaedic Hospital (RNOH) in Stanmore, has involved senior clinicians offering a clinically led, free, peer-to-peer review of adult elective orthopaedic practice in each provider trust. It was based on a national review of baseline data, including data from the NJR, National Health Service Litigation Authority (NHSLA), HES, and Atlas of variation, and meetings with providers.

The project featured targeted self assessment and peer review at a local level relating to musculoskeletal services and their:

- Clinical outcomes
- Processes (including revisions)
- Patient experience
- Patient pathways
- Network arrangements
- Financial impacts
- Waiting times

This, in turn, led to bespoke peer-to-peer evidence based discussion, about options for the configuration of services in selected elective orthopaedic pathways considered to be most in need of improvement. The implications for configuration will need to be considered at local and national level depending on case mix and complexity. Individual trust reports were generated using data from 12 sources (including PROMs, NJR and litigation data from the NHS Litigation Authority). The format and approach was initially piloted at Queen's Hospital in Romford and reviewed by a BOA steering committee.

Table 2 - Measures of effectiveness of GIRFT

The effectiveness of the GIRFT National Professional Pilot should be measurable in the short, medium and long term, specifically:

Short Term	Medium Term	Long Term
Reductions in: ■ Prostheses costs ■ Loan kit costs ■ Readmission rates ■ Length of stay ■ Surgical-site infection	Reductions in: ■ National variation for procedures ■ Outliers in national registries ■ Infection/complication rates	Reductions in: ■ Revision surgery ■ Readmissions ■ Litigation numbers and rates

As well as its immediate impact, the project is intended to have a long-term positive benefit on service delivery. This includes delivering a clinically led, provider side focused catalyst, for improvements in quality and reductions in costs, informing the setting up of and/or enhancing robust clinical networks, and supporting the direction of travel being developed by the Clinical Reference Groups (CRGs) guiding specialised commissioning within NHS England. Moreover, GIRFT has also looked at the common procedures in elective orthopaedic and spinal activity, especially those with a high tariff cost.

The principle has been to enhance the quality of care, with the delivery of consistent standards to the whole population.

Stocktake of rehabilitation services in England for elective and trauma surgery Collaboration with the Chartered Society of Physiotherapy

In addition to the main GIRFT pilot, the team has collaborated with the Chartered Society of Physiotherapy (CSP) and included their complementary review of rehabilitation across two integrated patient pathways of orthopaedic care; hip fracture and total knee replacement (TKR). It was only possible to review two pathways - one elective and one trauma pathway - due to limited resources.

A major issue was the complete lack of national data to evaluate rehabilitation services. It was therefore impossible to use a similar methodology to the main GIRFT pilot. Since rehabilitation is offered to patients across the complete care pathway and provided by a variety of sectors, it was important to take stock of the whole pathway. For hip fracture patients, rehabilitation aims to return the individual to their pre-fracture capabilities and prevent recurrent falls. For TKR, it is aimed at reducing pain and improving lower limb function.

Current evidence demonstrates that early, intense and frequent rehabilitation:

- Decreases length of stay and post operative complications and costs.
- Increases function and quality of life.
- Reduces the rate of falls.

The CSP project surveyed all orthopaedic physiotherapy service leads in NHS trusts in England and interviewed orthopaedic physiotherapists within 15 NHS trusts, in both acute and community services. The survey and interviews investigated different elements impacting on the delivery of an optimal rehabilitation service along the whole care pathway.

A key theme of the review was variation in practice. Well designed and appropriately funded physiotherapy services, offered seven days a week, provide excellent rehabilitation for patients recovering from a hip fracture or TKR. The elective TKR pathways more frequently provided high quality rehabilitation services. However, too often hip fracture patients were not able to access rehabilitation at the appropriate level of intensity and frequency, in order to maximise recovery.

Emerging themes include:

- Variation in practice.
- Under funded services unable to deliver seven-day services and rehabilitation at adequate intensity and frequency.
- A lack of integrated commissioning and provision of rehabilitation services and social services including multiple providers of community services.
- Lack of emphasis on rehabilitation in the immediate post surgery period for hip fracture patients on acute wards.

Chapter 11 of this report provides further detail, recommendations and solutions for delivery of high quality and cost effective rehabilitation services.

3. Activity and key statistics

Table 3 - Data collection and rationale

We collated a range of data from a variety of sources, focused on informing patient outcomes in adult elective orthopaedics.

Indicator	Source	Rationale
Activity volume by high impact (in terms of cost, complexity or volume) procedure	HES	Many studies have shown links between volumes by centre and individuals with outcomes. We wanted to particularly focus on high impact / high cost procedures where variation can lead to variable quality and cost of outcome.
Range of metrics including revision rate, ODEP rating etc.	NJR	Main orthopaedic registry and linked to Best Practice Tariff. We have also included the percentage uptake of ODEP 10a rated implants that is recorded by the NJR. This is a good indicator of the way organisations are using best value prostheses with good evidence. However, we recognise that many trusts are using excellent 7A and 5A rated devices which may in the future out perform implants with a current 10A rating.
Hip and knee arthroplasty PROMs	PROMs	Major national quality indicator and linked to Best Practice Tariff.
% of cemented hip replacements in the over 65s, Rate of knee arthroplasty one year after arthroscopy, etc.	North East Quality Observatory System (NEQOS)	We also selected a number of metrics from the excellent NEQOS Dashboard as initial Key Performance Indicators, because they demonstrate key aspects that the GIRFT team believe are indicators for overall quality of orthopaedic care. For example, research shows that cemented prostheses do well in the over 65s[10] and we have therefore used this metric as a quality indicator. It is worth noting that in a small number of cases there are centres that are demonstrating very high quality in their un-cemented activity, but these have tended to be centres with a particular specialism in these un-cemented procedures. The costs of implants become an issue as un-cemented prostheses, except in a few centres, tend to be significantly more expensive and early complications are higher. Similarly it is not good practice, nor cost effective if a high number of arthroscopies are being undertaken on patients who then require a TKR within one year.
Fractured Neck of Femur		Although GIRFT is predominantly interested in elective care, we have also included fractured neck of femur in our review as we believe that a successful care pathway for this should be indicative of an efficient trauma and orthopaedic service and, if well managed, should not impact negatively on elective cancellations. This is also linked to a Best Practice Tariff.

[10] *Failure rate of cemented and un-cemented total hip replacements (THR): register study of combined Nordic database of four nations. http://www.bmj.com/content/348/bmj.f7592*

3. Activity and key statistics

Although the majority of our detailed data analysis is contained in the trust reports, we are also including a top line data supplement that accompanies this report.

There are a number of key points regarding the data, which need discussing before the themes arising from it are covered.

Growth in demand

It is important to recognise that current activity takes place within the context of rapidly expanding demand, over and above that expected on the basis of simple demographic change. The following trend graphs demonstrate the scale and pace of growth. The slight recent dip is believed by many in the orthopaedic community to be evidence of the impact of postcode rationing, driven by financially constrained clinical commissioning groups (CCGs), as is suggested by the by Dr Foster's annual report published in December 2013[11], and perhaps suggested by further volume reductions outlined in the new CCG contracts. This despite the evidence that hip and knee replacement remain two of the most effective operations and that earlier intervention produces better outcome scores. These procedures are very cost effective and the number carried out per 100,000 of the population in the UK is much less than in other western health systems, suggesting under provision. With hip and knee replacements lasting beyond 15 years, this equates to a weekly cost of only £7.50. Moreover, the on-going costs of not treating repeated physiotherapy, strong analgesia, community support, income support, other social cost and lost productivity over 15 years - are significant.

It is clear that one of the reasons for the rising demand for orthopaedic procedures is the significant life enhancing impact of the procedures. It is the swift return for patients to good or enhanced function and to work and normal family life, which makes orthopaedics such a high demand service. It is this financial benefit to the economy, of re-enabling people, that should be remembered when considering the cost and scale of the provision.

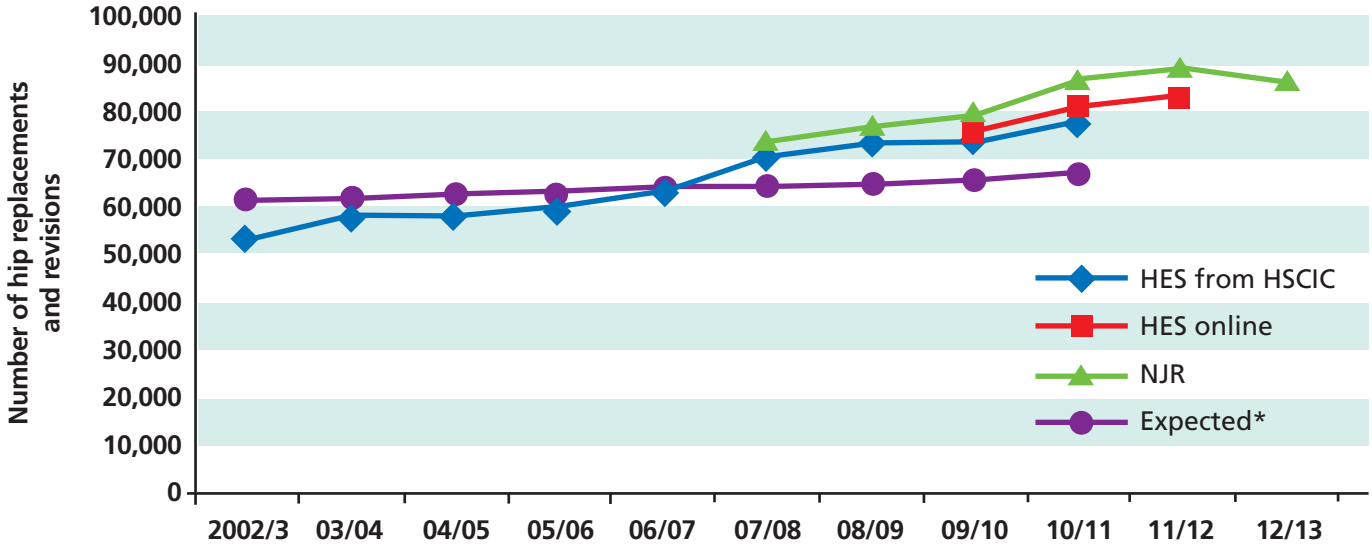
Data from the NJR supports the view that we now expect more than 95% of our patients with a hip replacement to benefit without further intervention for at least 10 years.

> It is clear that one of the reasons for the rising demand for orthopaedic procedures is the significant life-enhancing impact of the procedures. It is the swift return for patients to good or enhanced function and to work and normal family life, which makes orthopaedics such a high demand service. It is this financial benefit to the economy, of re-enabling people, that should also be kept in mind when considering the cost and scale of the provision.

[11] *http://myhospitalguide.drfosterintelligence.co.uk/downloads/report/Report.pdf*

Figure 1 - Trend in hip replacements and revisions

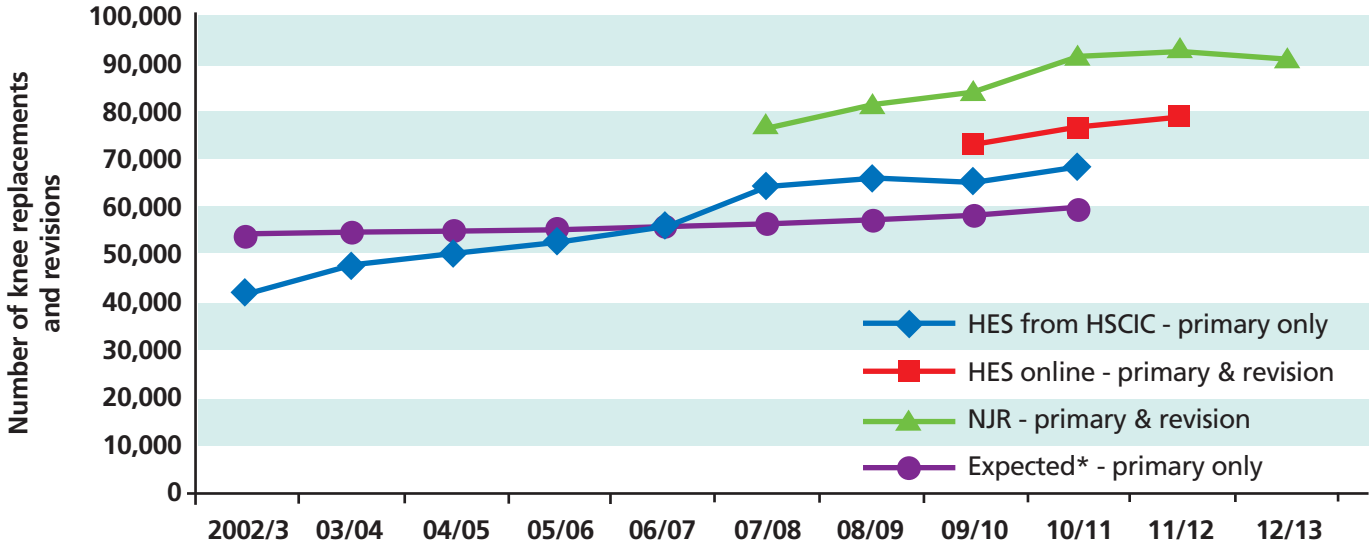
Data from Health and Social Care Information Centre (HSCIC: 'HES from HSCIC' and 'Expected' values; HES data from publically-available National Centre for Health Outcomes Development [NCHOD] website), HES online and NJR (publically available annual reports). All data includes activity delivered by independent sector and Welsh providers where this is reported to national data collections.



**Expected number of procedures standardised to the 2006/07 value. Changes in values between years result only from population changes relative to the age and sex standardised ONS resident population in 2006/07. The difference between the 'Expected' and the 'HES from HSCIC' values illustrate year-on-year changes that are unrelated to population change.*

Figure 2 - Trend in knee replacement and revisions

Data from HSCIC ('HES from HSCIC' and 'Expected' values; HES data from publically-available NCHOD website), HES online and NJR (publically available annual reports). All data includes activity delivered by independent sector and Welsh providers where this is reported to national data collections. Note: data from HSCIC only includes primary replacements, data from HES online and NJR include both primary replacements and revisions.



**Expected number of procedures standardised to the 2006/07 value. Changes in values between years result only from population changes relative to the age and sex standardised ONS resident population in 2006/07. The difference between the 'Expected' and the 'HES from HSCIC' values illustrate year-on-year changes that are unrelated to population change.*

Figure 3 - Trend in number of Finished Consultant Episodes (FCEs) in HES data for other orthopaedic procedures

Data from HES online. Please note: increases in activity will result from improvements in coding quality as well as increases in procedure numbers

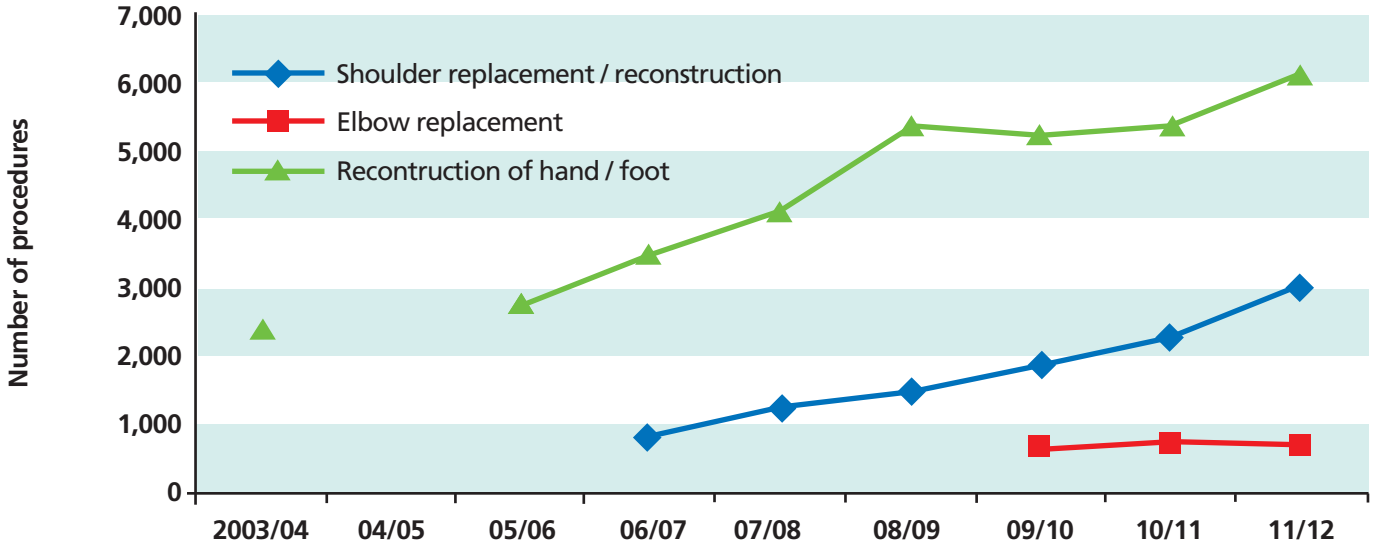
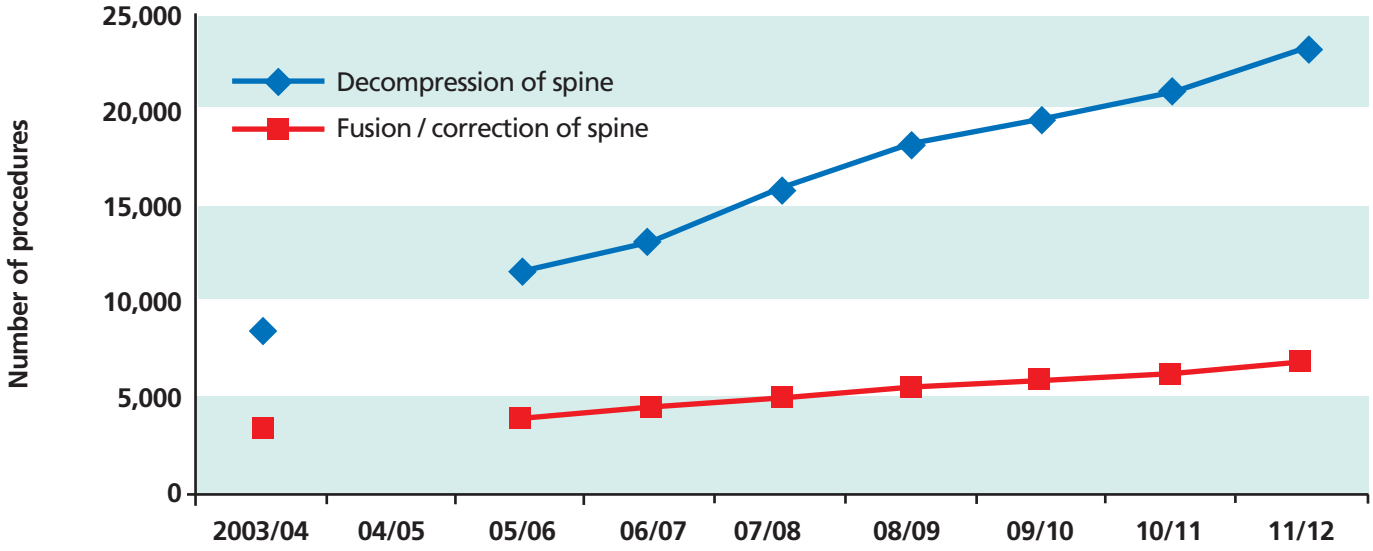


Figure 4 - Trend in number of FCEs in HES data for spinal procedures

Data from HES online. Please note: increases in activity will result from improvements in coding quality as well as increases in procedure numbers.



4. Variation in practice

The problem

While some types of variation are welcome and indeed indicative of innovation, in every area of the country and in every type of activity, we have seen significant variations in practice and outcome. There is no consensus as to what constitutes best practice in areas of activity where there is no National Institute for Health and Care Excellence (referred to as NICE) or formal guidance from the BOA or other professional sub-specialty association.

> In every area of the country and in every type of activity, there are significant variations in practice and outcome.

Examples are contained throughout the report but include: the range in the type of fixation method selected for implants where even across a single city there is no consistency of practice; the rate of TKR within one year of an arthroscopy; return to theatre following a fracture; availability of an ortho geriatrician; the provision of, and in some cases belief in the value of, ring-fenced orthopaedic beds to support elective orthopaedic services; and methods for routinely tracking underlying deep infection rates, which exist in some trusts but are absent in others.

The solutions

Professionals

- Clinicians should be engaged through empowerment by utilising national data and clear guidance on best practice, referencing national registries where they exist and are validated, and guidance from their professional bodies.
- The specialist societies should develop clear guidance on best practice using the BOA methodologies approved by NICE.
- The GIRFT team is working closely with the national Clinical Reference Group (CRG) in specialist orthopaedics to make sure complex work is carried out in networks with the critical clinical mass, clinical adjacencies and clinical expertise to ensure best outcomes.

Patients

- Patients should be better informed about what constitutes best practice - this means better informed patient choice.

Providers

- Providers should implement best practice based on the recommendations in this report.
- It is proposed that providers are required to input into a national orthopaedic outcomes dashboard, developed from the GIRFT data set, initially on a quarterly basis, which will be focused on quality outcomes and patient safety. This dashboard would integrate with other dashboards as they are developed and come on stream to inform practice over the whole patient journey
- An individual patient's journey through secondary care crosses many managerial boundaries. Last-minute cancellations (because of bed cancellations or lack of theatre time) increase cost, decrease productivity and diminish patient satisfaction. Dedicated and available orthopaedic facilities should be the norm; any cancellation because of any unavailability should be recorded as a failure in the dashboard as part of the transparency agenda.

Commissioners

- Commissioners should incentivise providers to ensure best practice is being pursued - Best Practice Tariff (BPT), Commissioning for Quality and Innovation (CQUIN), etc.
- Commissioners should expect all orthopaedic providers to maintain the quality outcome dashboard.
- Commissioners should ensure that each stage of a patient's journey is quality assured to the same standards, using validated and agreed outcome scores and performance indicators.
- A quality dashboard for triage and treatment centres should mirror and dovetail with that produced for 'secondary' care centres.

DH, NHS England and other statutory bodies*

- NICE guidance must focus on areas of high impact and high variation. Examples for urgent prioritisation include: using evidence in choice of implants; robust mandatory collection of deep wound infection data; and the setting of minimum volumes for units for complex procedures.
- Clinical dashboards for the whole patient pathway (assessment and treatment; primary and secondary care) should be published to the same standards as those proposed for secondary care, such that successful team practice can be identified and supported.
- True transparency of performance.

Professional bodies and registries

- There should be more explicit guidance as to best practice driven by the evidence base where available.
- Where the evidence is limited, clinical trials need to be set up to provide the evidence to inform practice (e.g.instrumented spinal fusion and its efficacy over non instrumented fusion). The BOA has appointed the York Clinical Trials Unit to work in partnership on these issues.
- Some will argue that this type of approach restricts clinical freedom - however other countries with nationally led health services have implemented more directive guidance on some of these issues, with clinical buy in and minimal controversy. Moreover, it is preferable to have these decisions guided by clinicians using the available evidence, rather than marketing pressure from suppliers or international trends in training. For example non-UK and younger surgeons are less likely to cement as a result of reduced training in the required skill set.
- The BOA, specialist societies and the NJR should publish more explicit guidance around best practice. The BOA has partial accreditation for clinical guideline development - the NICE accreditation for commissioning guidance documents is held by RCS England.
- Ortho geriatrician medical practice should be officially recognised as a separate career progression to encourage an increase in numbers, as there is currently a significant shortfall nationally.
- National data should be collected which reflect the whole patient pathway. This would identify variation in care quality, monitor high quality care, evaluate pathways and redesign and inform future research questions. Otherwise service decisions will continue to be based on anecdotal information.

Best practice

The impact of the BPTs for arthroplasty and hip fracture are excellent examples of engendering change in practice, and use the commissioning levers to change clinical and management behaviour. The solutions highlighted in this report will also change behaviour at the provider level in a shorter timeframe. More of this is required, in terms of other commissioning levers, and potentially additional BPTs.

**Statutory bodies including the Care Quality Commission, National Institute for Clinical Excellence, Monitor etc.*

5. Minimum numbers of procedure type

The problem

Many surgeons are performing low numbers of certain procedures, especially complex, but also routine procedures. This practice has been observed in all sizes of hospital.

In elective hip replacement, out of the total 74,193 primary hip replacements that were performed by 1,437 surgeons in 2011/12, there was an average of 52 cases per surgeon - however 24.1% of surgeons were performing ten or fewer hip replacements a year. The literature suggests that in primary hip arthroplasty, 35 cases performed annually is the 'magic' number, above which complications significantly reduce. The specialist societies should provide clear guidance on this.[12]

In the same year (2011/12), of 73,043 primary knee replacements, 15.7% of surgeons were carrying out ten or fewer cases a year. The situation is worse with knee and hip revision surgery, often complex and expensive, with 81.7% of surgeons undertaking ten or fewer knee revisions a year and 62.1% undertaking ten or fewer hip revisions, even in units where their colleagues perform considerably more.

Of a total of 6,582 unicondylar knee replacements, 54.6% of surgeons undertook five or fewer per annum and 73.3% undertook fewer than 10 per annum. While the literature suggests that for better results and lower revision rates, surgeons should be carrying out 20-30 such uni-compartment procedures per year, specific guidance from the orthopaedic specialist societies should be sought.[13,14]

Whilst we recognise that some experienced surgeons can deliver very high quality outcomes regardless of a minimum volume, it is recognised that in the majority of cases, higher volumes equate to better outcomes. Units will need to review their individual surgeon's data and outcomes and make appropriate decisions.

Tables 3, 4 and 5 lay out this detail in tabular form, and Figure 6 depicts the national distribution of this variation at a local area team (LAT) level.

There are many examples where groups of surgeons working within an individual Trust have already rationalised the number of surgeons undertaking the most complex activity and employing structured models of joint working and mentoring. This will ensure the next generation of surgeons get adequate exposure to complex procedures. This has been a consistent message conveyed to all the trusts visited by the GIRFT team, and networks are to be encouraged. Clinicians recognise the need to change and have welcomed many of the recommendations especially the suggestion for two surgeon operating for the most complex cases. Obviously the need to ensure a good geographic spread of provision to ensure ease of access for patients and their families is vital but for the the more complex care some concentration of activity is needed to enhance the quality of care. However, in terms of primary surgery the rationalisation to which we refer is within surgical teams.

[12] *Ravi, B., Jenkinson, R., Austin, P.C., Croxford, R., Wasserstein, D., Escott, B.,Paterson, M., Kreder, H., Hawker, G.A., (2014) Relation between surgeon volume and risk of complications after total hip arthroplasty: propensity score matched cohort study Relation between surgeon volume and risk of complications after total hip arthroplasty: propensity score matched cohort study. British Medical Journal 2014;348:g3284 doi: 10.1136/bmj.g3284*

[13] *Baker, P., Jameson, S., Critchley, R., Reed, M., Gregg, .P, Deehan, D. Center and surgeon volume influence the revision rate following unicondylar knee replacement: an analysis of 23,400 medial cemented unicondylar knee replacements. The Journal of bone and joint surgery. American volume. J Bone Joint Surg Am. 2013 Apr 17;95(8):702-9. doi: 10.2106/JBJS.L.00520.*

[14] *Badawy, M., Espehaug, B., Indrekvam, K., Havelina, L., Fernes, O. Higher revision risk for unicompartmental knee arthroplasty in low-volume hospitals. Data from 5,791 cases in the Norwegian Arthroplasty Register. Acta Orthopaedica 2014; 85 (4): 342–347*

Table 4 - Minimum volumes demonstrated by NJR data - hips

	Total Ops	Total Surgeons	Average Ops per Surgeon	Surgeons delivering 5 or fewer*		Surgeons delivering 10 or fewer	
				Number	% of all Surgeons	Number	% of all Surgeons
Primary hip	74,193	1,437	51.6	230	16.0%	340	23.7%
Hip revision	10,078	784	12.9	360	45.9%	471	60.1%

Source: NHS Choices website, 2012 data.

Note: Not all consultants have consented to releasing this data. If this is the case for the Trust, then the values above may under-represent the true values for the Trust. A full listing of the consultants who have not consented, and their reasons for doing so, can be found at the NHS Choices website.

**To create totals, those with a note of <5 are counted as 5- this will increase the average number per surgeon.*

Table 5 - Minimum volumes demonstrated by NJR data - knees

	Total Ops	Total Surgeons	Average Ops per Surgeon	Surgeons delivering 5 or fewer*		Surgeons delivering 10 or fewer	
				Number	% of all Surgeons	Number	% of all Surgeons
Total knee replacement	73,043	1,507	48.5	130	8.6%	243	16.1%
Unicondylar knee replacement	6,582	637	10.3	348	54.6%	467	73.3%
Patello-femoral knee replacement	1,207	351	3.4	294	83.8%	330	94.0%
Knee revision	5,828	879	6.6	512	58.2%	704	80.1%

Source: NHS Choices website, 2012 data.

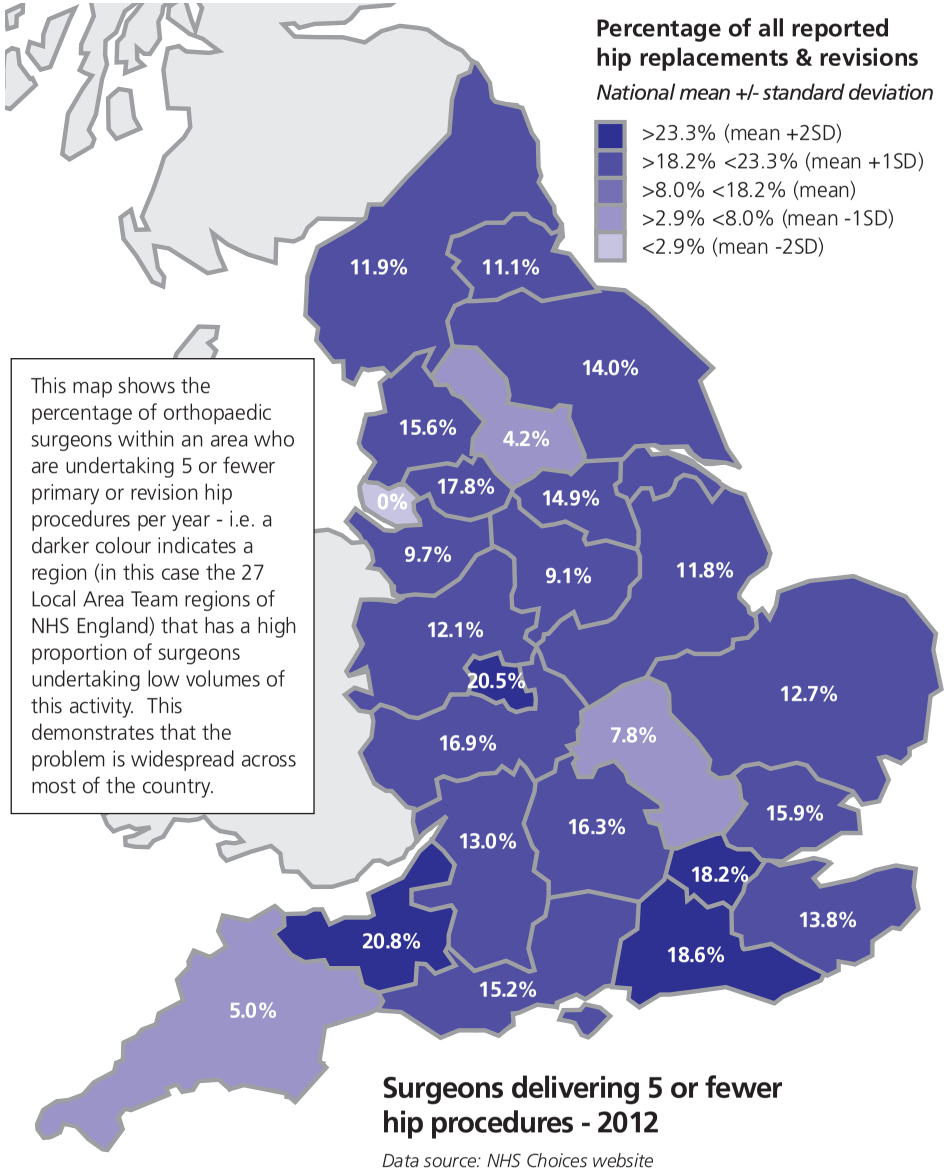
Note: Not all consultants have consented to releasing this data. If this is the case for the Trust, then the values above may under-represent the true values for the Trust. A full listing of the consultants who have not consented, and their reasons for doing so, can be found at the NHS Choices website.

**To create totals, those with a note of <5 are counted as 5- this will increase the average number per surgeon.*

Table 6 - Proportions of low/high volume surgeons demonstrated by NJR data - hip and knee

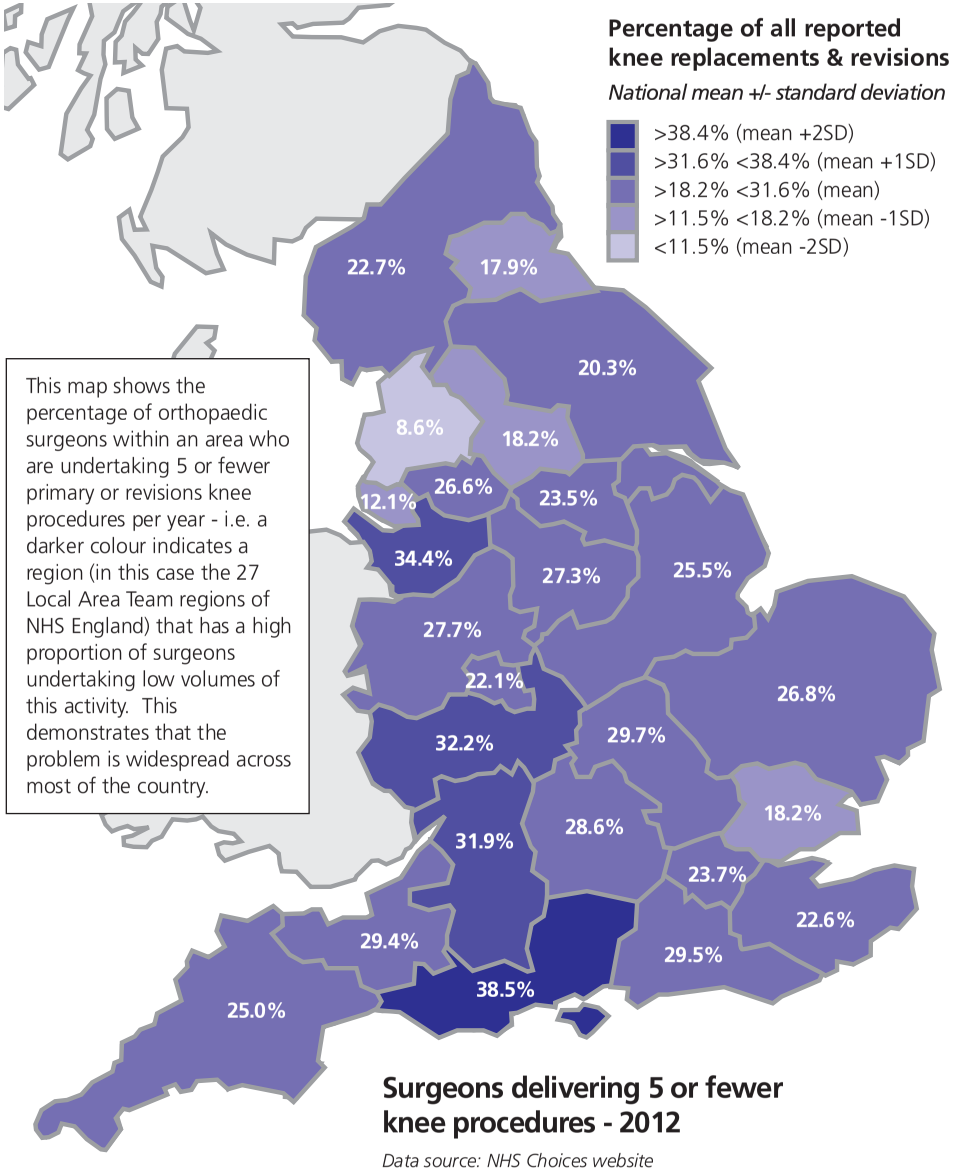
	Primary hip	Primary knee (TKR only)
Percentage of total operations undertaken by 10% of surgeons	34.6%	28.8%
Percentage of total operations undertaken by 20% of surgeons	54.1%	46.9%
Percentage of total operations undertaken by 30% of surgeons	68.1%	61.1%
Percentage of total operations undertaken by 40% of surgeons	78.9%	72.7%
Percentage of total operations undertaken by 50% of surgeons	86.9%	81.8%
Percentage of total operations undertaken by 60% of surgeons	92.7%	88.8%

Figure 5 - Maps showing geographic distribution of low volume surgeons in hip and knee replacement surgery



Surgeons delivering 5 or fewer hip procedures - 2012

Data source: NHS Choices website



Surgeons delivering 5 or fewer knee procedures - 2012

Data source: NHS Choices website

The solutions

Professionals

- Surgeons should recognise the need for change and value their colleagues' skills and work as a team providing comprehensive quality musculoskeletal care. This has been brought sharply into focus following the GIRFT visits.
- Specialist societies should produce clear and authoritative guidance. Recognising that most surgeons cover several areas of practice.

Patients

- Patients should have access to unit data from the NJR and the live individual trust quality dashboard. This must be comprehensive and clear.
- Well informed patients will lead service-delivery change.

Providers

- Each provider unit has an overview of individual surgeon volumes by procedure. Excellent examples of units taking a comprehensive approach to provision by surgeons were seen in the Wirral and at Princess Alexandra in Harlow.
- Providers should work in a collaborative fashion to ensure that the network carries out the volumes required to undertake complex work with orthopaedic equipment on the shelf for a minimum of 90% of cases. Indeed the use of loan equipment could be used as a performance metric.

Commissioners

- Commissioners should consider the introduction of contractual minimum volumes for certain procedure groups as described in the literature on subject referenced earlier in this report but will only be successful if done in collaboration with the professional societies.

DH, NHS England and other statutory bodies

- Some consideration should be given to revision surgery being approached on a regional basis and delivered by networks of appropriately experienced surgeons at a smaller number of locations.
- The DH, Monitor and NHS England should encourage behaviour change (e.g. inclusion of a minimum volume as a metric in a 'revision BPT').
- Minimum numbers for revision hip and knee replacements have already been raised at the annual general meeting of the British Hip Society (BHS) and British Association of Knee Surgery (BASK). There was overwhelming support for minimum volume guidance, which should be issued at unit level.
- NICE should consider providing guidance in this area perhaps devolved to the specialist societies through the BOA.
- The continuation of the GIRFT programme would create a vehicle for driving forward change and monitoring progress - otherwise the opportunities identified will not be realised.

Professional bodies and registries

- Minimum volumes, in revision hip and knee replacements has been discussed at specialty society meetings, with broad agreement on unit numbers and some agreement on individual surgeon volumes.
- Best practice should be defined by the specialist societies and formally agreed using NICE methodology.

Best practice

We have seen many trusts already moving towards a model that considers the importance of minimum critical volumes and the introduction of planning meetings to allocate cases to the most appropriate surgeon. Particularly good examples of this were seen at many trusts including Princess Alexandra in Harlow and The Wirral.

6. Implant choice and cost

The problem

The average age for a THR is 68 years. Cemented THR has reduced from 54% of THR in 2005 to 36% in 2010 and un-cemented THR increased from 22% in 2005 to 43% in 2010. The current NJR annual report shows that these percentages are being maintained

The GIRFT visits have highlighted low revision rates in trusts in which cemented implants are used. One trust we visited that is an outlier for NJR primary THR, routinely uses an expensive un-cemented cup made from tantalum for the majority of their patients. Their revision rate at five years is higher than average without an increase in complexity. This implant is significantly more expensive than a cemented polyethylene cup.

It has been very clear from the GIRFT visits that trends within trusts to cement or not, are driven not by evidence, but rather by established local behaviour, location of original training and marketing by implant companies. Moreover, younger surgeons tend to employ un-cemented fixation more readily as fellowships abroad tend to use this technique. This is not the application of evidence based medicine.

The use of un-cemented implants in the elderly is difficult to justify in terms of outcome and cost. Some surgeons have stated that un-cemented implant usage increases productivity. However, experienced surgeons have commented that productivity in theatre is multifactorial and cementing only takes 24 minutes in total so does not add significantly to the overall operating time. Our visits have shown that productivity is falling in most trusts, even where un-cemented implants are the procedure of choice.

It has been suggested that in elective hip replacement, mortality rates are lower when un-cemented implants are used. However, the evidence suggests that hip replacement is a very safe procedure, whether cement is used or not. Surgeons should utilise a technique and technology that is appropriate to the life expectancy and activity of their patient. Furthermore, surgeons should use the available evidence with reference both to the method of fixation and the bearing surface as well as the cost of the implant.

Senior managerial staff in trusts are concerned about the impact of the retirement of the experienced orthopaedic surgeons aged 50-65 years, and the further adverse effects on productivity.

The solutions

Professionals

- Surgeons should follow the evidence of the NJR and other registries and tailor their implant use to the needs of their patient group, with particular attention to the expected longevity of the implant and bearing surface, recognising that 95% of cemented metal on poly hips are expected to survive 10 years without problems.
- Clinicians also need to be aware of implant costs and ensure that cost effective implants are being used.

Patients

- A wider education programme is required as a part of the informed consent methodology, in order to introduce patients and GPs to the benefits of different methods of fixation and the advantages for different age ranges of patients.

Providers

- Operational managers must work with surgeons to review the whole cost of a procedure, in terms of outcome and prosthesis cost, and the patient's likely need for revision.
- Theatre productivity is important but multifactorial.
- Clinically led decisions need to be evidence based and in the best interests of the patient.

Commissioners

- Commissioners need to work with the profession and providers to factor indicative age protocols (subject to bone/health exceptions for those with physiology typical of older or younger age groups) for fixation into their contractual arrangements with providers.

DH, NHS England and other statutory bodies

- The BOA and specialist societies should produce clear evidence based guidance on implant selection both for fixation and bearing surface together with guidance on indicative numbers by surgeon. Good examples can be seen at the Royal Devon and Exeter and Princess Alexandra in Harlow. Trusts report significant savings and those who have taken this approach for an extended period have seen a reduction in their revision rates.

Professional bodies and registries

- For TKR, cemented and un-cemented options exist. The evidence from the registries shows that only 5% of un-cemented knee arthroplasty is undertaken. With a significant increase in prosthetic costs of these implants, and no evidence of improved survivorship, questions around their efficacy need to be answered and guidance issued.
- Monitor should consider adding a payment differential to the primary hip replacement tariff (as was previously the case), to encourage the uptake of cemented fixation in the over 65s, or consider adherence to an age protocol as an aspect of an extended BPT for hip arthroplasty.
- The appropriateness of un-cemented procedures is emphasised for those whose life expectancy is greater than that which could be reasonably expected from a conventional hip replacement. More data is required before appropriate advice can be given.

Best practice

We have seen many examples of trusts that are implementing age protocols for fixation method, or are beginning to introduce these following an acknowledgement that the drift to un-cemented in this age group is working against the evidence. Figures 6 and 7 show the trusts that are adopting an evidence based approach.

Figure 6: Percentage primary hip replacements by operation type: North region

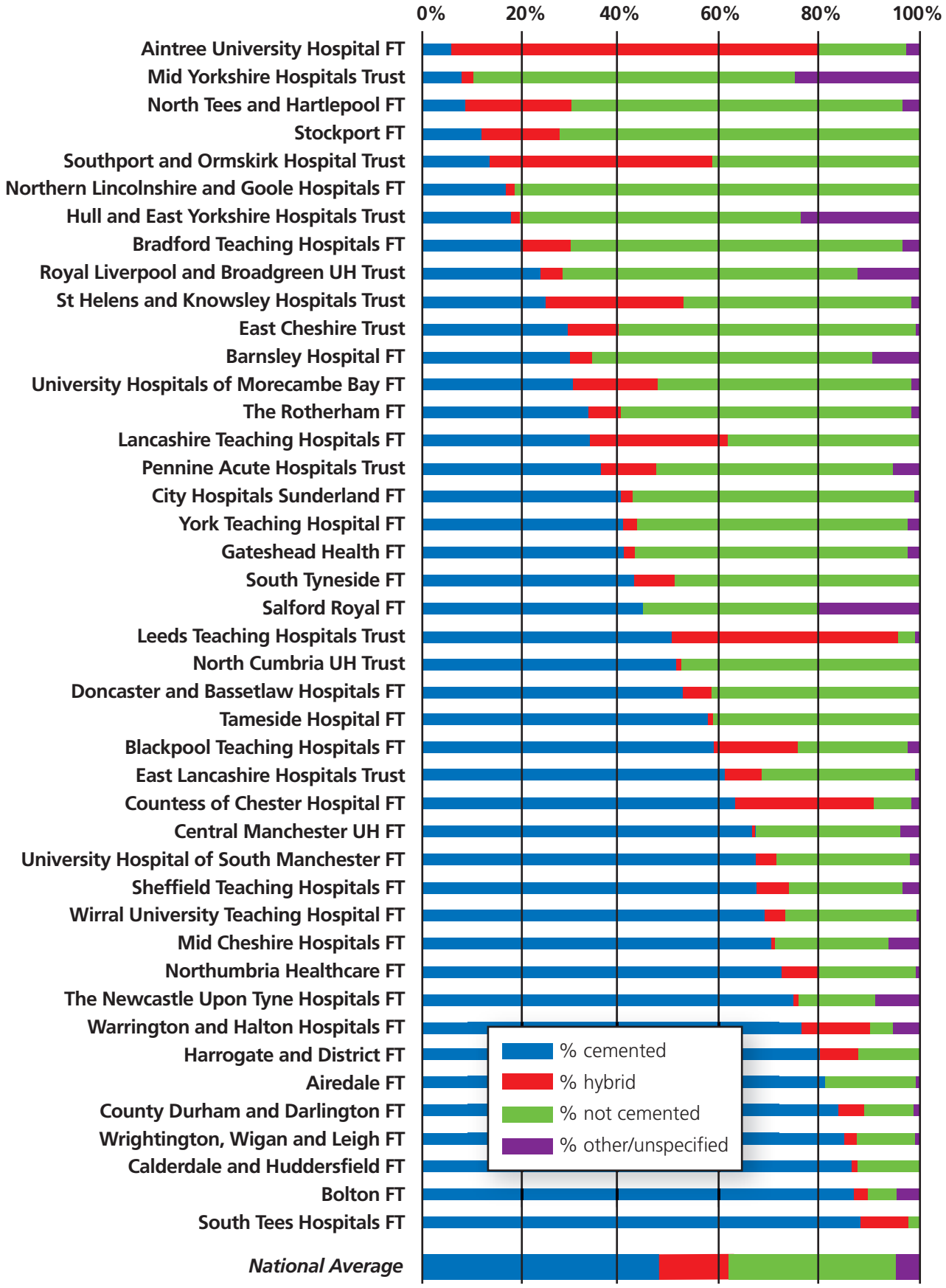


Figure 7: Percentage primary hip replacements by operation type: Midlands & East

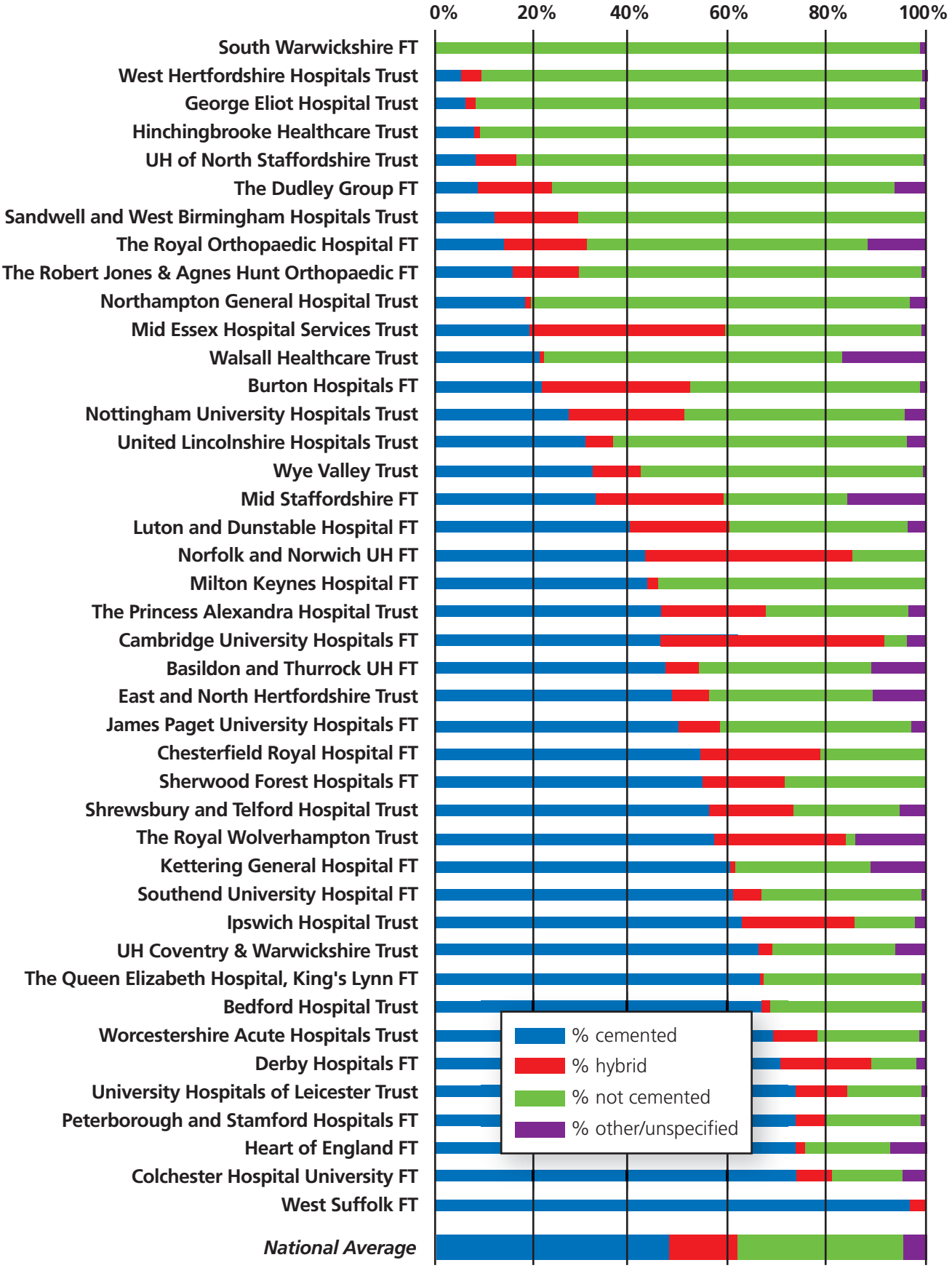
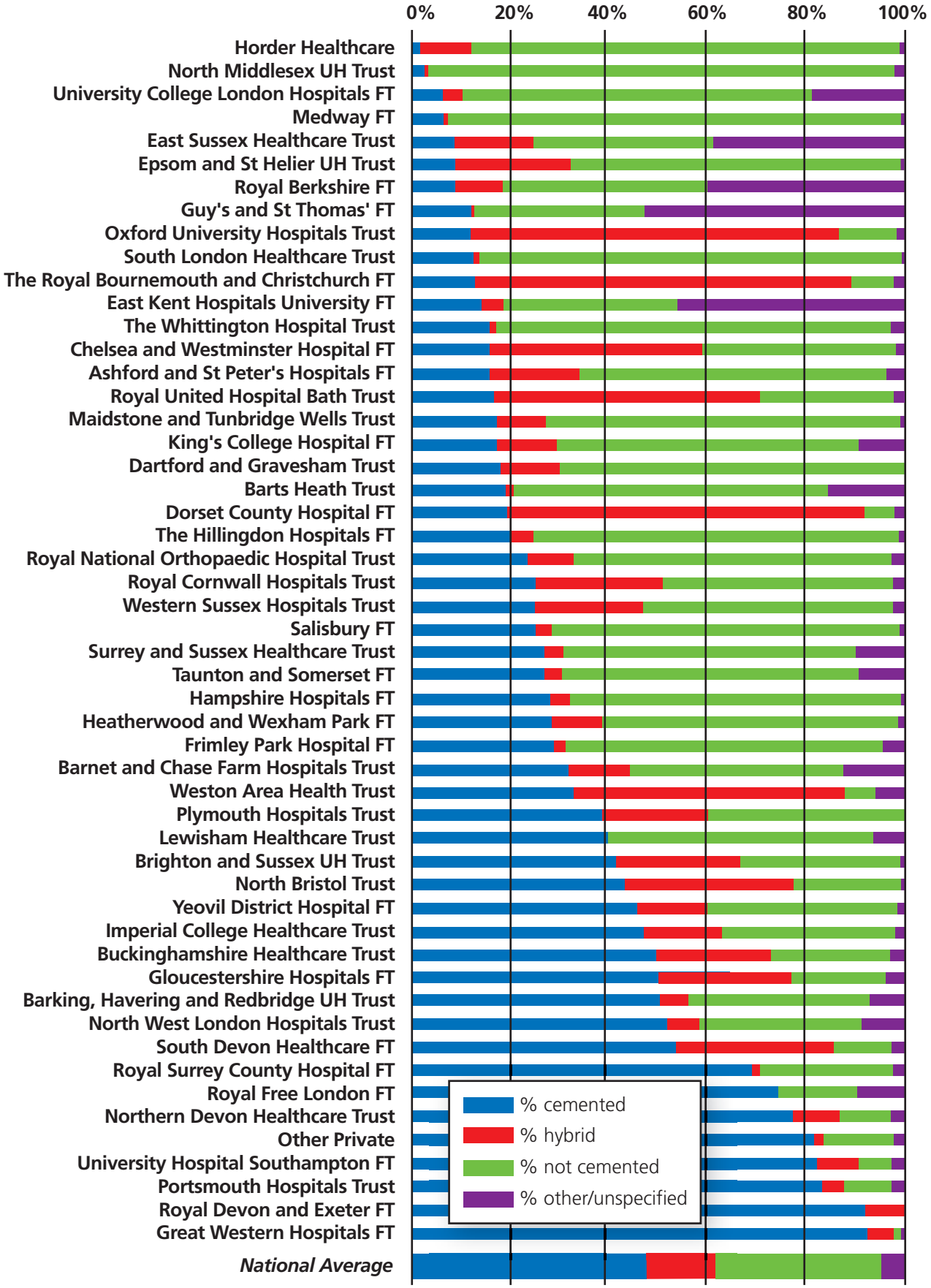


Figure 8: Percentage primary hip replacements by operation type: South & London



7. Procurement of implants

The problem

Many orthopaedic teams we met were unaware of the total profile of their prosthetic purchasing in terms of the evidence base or relative cost. It seems vital that an understanding of their activity in key areas - shoulder, ankle and elbow replacements as well as hip and knee replacements and amount spent on loan kit, prosthesis selection and accounts - should be shared amongst the surgical team. NICE Guidance and DH Orthopaedic Procurement Quality Innovation Productivity and Prevention (QIPP) activity should help bring this into focus. We will be working with the DH and the NJR who have already been looking at this area to disseminate and action the lessons we have learnt from the GIRFT project, that could help with the introduction of clear guidance as to how much should be spent on prostheses and associated supplies and components. The NJR has already put in plans to collect pricing information on implant costs from 2014 onwards.

It is also important to understand that, in a significant number of cases, the prices paid by a trust do not have a relationship to the volumes purchased. Furthermore, while it is important to recognise that there is sometimes a role for the most expensive prostheses, it is clear that there needs to be an even greater level of scrutiny of the decision making process that drives out 'cost blind' decisions. We have a responsibility to make the best clinical choices for our patients, but we also have a moral responsibility to ensure that our decisions, while purely clinical, allow for the less expensive of two equally good options to be our standard preference on all occasions.

DH procurement, and Professor Briggs, will be writing to all providers and consultants to share an overview of the price ranges being paid for the leading ranges of cemented and un-cemented (different bearing surfaces) hips and knees.

The solutions

Professionals

- Surgeons should be aware of the cost implications of their judgements.
- NJR pricing information, once issued later this year, should be closely reviewed and debated across the orthopaedic team of individual trusts.

Providers

- Trusts should be actively engaged with national programmes to reduce orthopaedic procurement costs - this is beyond prosthesis price and includes understanding all the ways that the 'cost to serve' can be reduced.

DH, NHS England and other statutory bodies

- As part of the NHS Procurement & Efficiency Programme transparency around pricing is being encouraged, this will allow trusts to look at their own prices and introduce transparency. We would urge trusts to engage with this process. Professor Briggs and BOA will be working closely with them to provide this pricing guidance.
- When sharing pricing information consideration should be given to the open publication of the average cost of a unit's implants (total implant costs by total volume of that particular procedure) such that the fixation and bearing decisions and contract negotiations which predicate costs are shared in an open way, yet protect commercial and individual confidentiality.

8. PROMs

The problem

PROMS provides a critically important way of measuring outcome and patient experience and is now very successfully linked to the best practice tariff for hip and knee replacement, however, the GIRFT team is of the view, following extensive discussions with trusts that have been visited, that PROMs would be enhanced if additional metrics relating to a number of specifically orthopaedic complications could be added to the case mix adjustment criteria.

We have also found a disconnect between management and clinicians at a small number of centres with regards to PROMs scores; for example, clinicians at one trust did not know that they were amongst the worst in the country for health gain, and were surprised to discover this was the case.

Finally, some clinicians have expressed concern that CCGs are requesting to follow up patients and that this might impact on the process of post-operative PROMs collection, and subsequent feedback to the local trust, with a negative knock on effect to the BPT. It is suggested that the PROMs team give further consideration to providing guidance on this point.

The solutions

DH, NHS England and other statutory bodies

- The PROMs case mix adjustment methodology should be reviewed.
- Trusts should be better briefed as to how to manage PROMs successfully, as this problem creates 'noise' that hides real issues relating to quality.

Professional bodies and registries

- CCGs and primary providers should discuss with trusts the follow up of arthroplasty patients to make sure that PROMs data is collected.

9. The National Joint Registry

The British orthopaedic profession is rightly proud of the quality and scope of the NJR, which is now the world's largest joint register (with over 1.4 million entries) and holds the profession publically accountable in terms of quality and safety. It has been in operation for 11 years and is the only register in the world to provide surgeons with a bespoke report, fit for governance and revalidation. It has also been providing, outlier methodology and process for individual surgeons and hospitals for the last seven years.

Furthermore, the NJR has continually expanded its services and engagement. Examples of expansion and engagement include the development of a clinician feedback website, the public publication of hospital dashboards for the past three years and some surgeon data for the past two years, and the provision of data on prosthesis costs, the highly welcomed benchmarking tool, for which the NJR received a national award.

The NJR also works closely with the regulator to identify poorly performing devices, leading to product recalls when necessary, for example in the case of the Articular Surface Replacement (ASR). The NJR provides data on a monthly basis to industry so they can be aware of their own product performance.

In additional to all of this, the NJR carries out important research to support gaps in evidence, and provides international leadership; for example, through the International Society of Arthroplasty Registers (ISAR) Presidency.

The problem

All systems of data review are reliant on the quality of the data that is input, and during the course of the GIRFT project, the GIRFT team has come across a number of providers where there appears to be under recording of historical revision data when compared to the HES data. This is partly because many of the primaries were not originally recorded or date from before the NJR began, however, a significant proportion are also reported to arise from poor administration of the NJR submission process by providers, or by surgeons not inputting their data. It is clear, however, that the advent of the new BPT for primary arthroplasty (that requires NJR compliance) has encouraged rates to dramatically improve in most places in the past year.

The concern is that the lack of data on the original primary means that we must consequently be underplaying the actual revision rates, both at trusts and nationally. This is important as it underplays the volume of complex work likely to be required in the future, which will impact on the process of long term capacity planning, and also the number of trainees who will be required to meet this demand. From our visits, the likely under reporting of revision hip and knee replacement rates may be significantly more of a problem in some areas than hitherto believed or reported. The NJR is now running a validation process led by the new NJR medical director.

A final concern is that while all surgeons see their own NJR reports, the trust wide report is not as a rule circulated to the orthopaedic team. A number of clinical directors reported having difficulty excavating the report from their Chief Executive's administrative support system. This seems surprising and we suggest that the NJR ensure that a copy of the report is also sent to Clinical Directors of orthopaedics.

The solutions

DH, NHS England and other statutory bodies

- Urgent validation of the revision data within the NJR is now underway.
- The move to make NJR compliance an aspect of the arthroplasty BPT is already 'fixing' this problem in many ways. However, the long backlog of historic poor or missing data will continue to cause problems for some time to come. Individual surgeon level data showing revision rates should not be published until the data has been fully validated. Clinician feedback following GIRFT visits has been unanimous in support for unit level data publication.

Professional bodies and registries

- It is proposed that in order to support the development of the new categories added to the NJR in recent years, and other newly implemented registries, consideration is given to new mechanisms to drive compliance (assuming that there may be a limited appetite for creating additional BPTs). Alternatives might include the distribution of guidance to local commissioners to include these as mandated data in contractual requirements and the adoption of all registries as core requirements by NHS England as a part of Specialised Commissioning.
- Compliance with national audits such as the NJR should be publically quoted as part of the quality dashboard and low compliance viewed as an 'alarm' by Healthcare Quality Improvement Partnership (HQIP).

10. Loss of ring-fenced beds and theatre environment

The problem

While the clinical advantages of having dedicated (ring-fenced) orthopaedic units are well known[15] (reduced infection,[16,17] shorter length of stay,[18] fewer cancellations[19] etc), a number of less obvious patterns have been observed. It is has been very apparent during the GIRFT visits, that a significant number of trusts have seen the 'purist' orthopaedic ring-fenced approach denied, removed or regularly breached. This is often perceived by orthopaedic teams as a failure of the system to plan appropriately and clear evidence of a lack of commitment to the service by their management teams. The consequent infections, cancellations, cost, reduced patient satisfaction and increased length of stay are perceived as a direct result of that lack of management commitment. The literature supports the orthopaedic community in its view that infection rates rise if the ring-fence is broken.[20,21,22] A good recent example was at a Trust where, during winter pressures, the ring-fenced orthopaedic beds were breached by acute admissions with an increased joint infection. This is a theme that came up repeatedly at the hospital visits. Also, the literature on the subject supports this view. An example of this was at a trust that decided to place "clean" elective cases on the orthopaedic ward. The result was an increase in streptococcus infections in wounds of patients undergoing joint replacement. Some units have a very strict well enforced policy, where the clinicians stop elective surgery if the orthopaedic unit beds are breached, until the ward has been deep cleaned.

Geographical separation is unnecessary; commitment to service quality, namely 'ring-fenced' orthopaedic beds is essential and should be a key management responsibility. There are many exemplar units where the elective orthopaedic activity progresses well alongside busy emergency admission units. Excellent examples are seen at Exeter and Bolton.

NB - For the purposes of this report, a genuine elective orthopaedic ring-fence is one that is rigidly enforced and essential if best outcomes are to be achieved. If there is a breach of any kind - including supposedly 'clean' surgical patients - of the ring-fence, then surgeons are advised to cancel their lists and require that the ward is closed and deep cleaned before joint replacement can begin again. It is worth remembering that when infections do occur, as is more likely in a non-ringed circumstance, it is necessary to go through the same deep clean procedures.

Clinicians at a number of trusts routinely raised concerns about the theatre environment and lack of discipline. In some hospitals, joint replacement is being undertaken in theatres with no laminar flow. Furthermore, there is a lack of discipline in the theatre itself, with staff constantly moving in and out of the theatre, or staff not wearing masks.

A further issue that was commonly aired was the widespread lack of dedicated orthopaedic scrub teams which led to reduced productivity and stressed consultants. At the patient safety brief, some clinicians expressed their concern to us that some members of staff would declare that they had never done this procedure before. In other industries this would be unacceptable.

[15] *http://www.bmj.com/content/329/7458/149*

[16] *http://www.bjj.boneandjoint.org.uk/content/88-B/7/943.long*

[17] *https://www.lenus.ie/hse/handle/10147/303576*

[18] *Barlow D, Masud S, Rhee SJ, Ganapathi M, Andrews G. Ring fenced beds - The effect of a 'ring fenced' orthopaedic arthroplasty ward on length of stay and surgical site infection - http://www.ncbi.nlm.nih.gov/pubmed/22717284*

[19] *M.R. Whitehouse, N.S. Atwal, J.A. Livingstone. Does Ring-Fencing Improve Efficiency in an Orthopaedic Day Case Unit? - http://www.iaas-med.com/files/Journal/14/14.4/WHITEHOUSE.pdf*

[20] *Biant, L.C., Teare, E.L., Tuite, J.D., Williams, W.W. Ring-fencing of electing orthopaedic beds: eradication of MRSA and effect on rates of postoperative infection in patients undergoing joint arthroplasty. J Bone Joint Surg Br 2003 vol. 85-B no. SUPP II 179*

[21] *Piggott, R., Hogan, A., Concannon, E., Sharkey, M., Waldron, R., Khan, W., Barry, K. The Impact of Changes in Work Practice and Service Delivery on Surgical Infection Rates in a General Surgical Unit Department of Surgery, Mayo General Hospital, Castlebar, Co Mayo 2013.*

[22] *Kelly JC, O'Briain DE, Walls R, Lee SI, O'Rourke A, Mc Cabe JP. The role of pre-operative assessment and ringfencing of services in the control of methicillin resistant Staphlococcus aureus infection in orthopaedic patients. Surgeon. 2012;10:75-9.*

The solutions

Professionals

- Discipline in theatres needs to be improved in some trusts and issues such as 'walk through' and too many people in the theatre need to be addressed.
- Dedicated experienced specialist orthopaedic scrub nurses should be mandatory, and any new trainee should be adequately supervised by an experienced scrub nurse (as would be expected of a surgeon or pilot).
- Dedicated orthopaedic theatres with laminar flow.
- The whole theatre nursing team must know the procedure, be experienced in elective orthopaedic procedures (especially joint replacement), and work regularly in teams with the orthopaedic clinicians to maintain productivity and reduce complications.

Patients

- Patients should demand that the provider unit has trained staff available. There is, therefore, a need to raise awareness of this as a gold standard for elective orthopaedic surgery. Many other areas of medicine include this as a basic minimum.

Providers

- The creation of a 'cold' elective orthopaedic centre, either within an existing hospital environment e.g. Leicester (General site) or separate on the same site e.g. Princess Elizabeth Orthopaedic Centre in a dedicated unit.
- Another model exists, for example the Elective Orthopaedic Centre in Epsom or the RNOH at Stanmore. These units bring together groups of surgeons undertaking significant volumes of routine and complex cases.
- All of these models can work well, but must have available the co-adjacencies that allow high quality safe care. This includes the appropriate medical care of the complex patient. Infection rates remain very low in these units and staff morale is high from both clinicians and managers proud of their results and outcomes.

Commissioners

DH, NHS England and other statutory bodies

Professional bodies and registries

- Dedicated units for elective orthopaedics (i.e. not merging any emergency admission [even orthopaedic] or other elective surgery) should be formally acknowledged as the essential standard required to deliver safe, cost effective, quality treatment for patients. This needs to be emphasised centrally in several ways: by making it a core requirement of all specially commissioned specialised orthopaedics; by adding it to the descriptions in the arthroplasty BPT; and by NICE formally considering the constituent elements of a genuine elective orthopaedic ring-fence in a statement of formal guidance.

Best practice guides

We have also found excellent examples of rigorously maintained dedicated elective orthopaedic (ring-fenced) units, both in the easier to defend geographically separate units and, most impressively, within busy district general hospitals (DGHs). An excellent example can be seen at Bolton Hospital where the rigorous no outlier policy is both closely policed by staff and respected by management. Leicester, Hinchinbrook, and Princess Elizabeth Orthopaedic Centre in Exeter, also have robust practices for maintaining dedicated orthopaedic beds in busy district general hospitals.

11. Stocktake of rehabilitation services in England for elective and trauma surgery (in collaboration with the Chartered Society of Physiotherapy)

Rehabilitation is an important factor in outcomes for patients. Unfortunately over the last ten years there has been widespread disinvestment in this area across the NHS in England. As part of the GIRFT visits, each hospital was asked about their rehabilitation services. Although there some examples of excellent practice such as the Isle of Wight and South Warwickshire the overall message is that rehabilitation services need to improve both in the hospital setting and in the community. The CSP reviewed rehabilitation across two integrated patient pathways of orthopaedic care; one trauma (hip fracture) and one elective (TKR). The findings of these two reviews highlight the need for effective rehabilitation pathways to produce the best functional outcomes for patients.

It should be noted that John Etherington, the National Clinical Director for Rehabilitation and Recovering in the Community for NHS England and the national Rehabilitation Delivery Board are in the process of reviewing ways to improve the quality of rehabilitation across the country. Activity has included working groups looking at commissioning guidance/incentives and levers and four Regional Leads have been appointed to focus on the adoption and dissemination of good practice and to support the development of local networks and initiatives. Moreover, there will be a National Rehabilitation Conference on 31st March 2015.

Rehabilitation is restoration to the maximum degree possible of an individual's function and/or role, both mentally and physically, within their family and social networks, and within the workplace where appropriate. Rehabilitation for hip fracture patients aims to return them to their pre-fracture state and prevent recurrent falls. For TKR, rehabilitation is aimed at reducing pain and improving lower limb function.

Current evidence demonstrates that early, intense and frequent rehabilitation:

- Decreases length of stay and post operative complications and costs.[23]
- Increases function and quality of life.[24]
- Reduces the rate of falls.[25]

However, 50% of people who suffer a hip fracture do not return to former levels of mobility and independence and may no longer be able to live at home.[26]

This project investigated whether orthopaedic physiotherapy services in England are delivering optimal rehabilitation.

Methodology

The project was led by a team of expert physiotherapists and researchers. It comprised two stages.

Stage 1 (April, 2014) involved secure online data collection, targeted to all orthopaedic physiotherapy service leads in NHS trusts in England, in both acute and community settings.

In Stage 2, 15 NHS trusts were visited, and detailed interviews were undertaken with orthopaedic physiotherapists, representing the whole patient pathway. Trusts were selected to ensure broad geographic location and to equal representation of trusts with above and below average length of stay for hip fracture patients.[27]

The CSP recommendations are based on the findings of the project and published evidence.

[23] *Khan SK, Weusten A, Bonczek S, et al. The Best Practice Tariff helps improve management of neck of femur fractures: a completed audit loop. British journal of hospital medicine (London, England : 2005). 2013;74(11):644-7.*

[24] *Penrod JD, Boockvar KS, Litke A, et al. Physical therapy and mobility 2 and 6 months after hip fracture. Journal of the American Geriatrics Society. 2004;52(7):1114-20. : http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1454714/pdf/nihms9506.pdf*

[25] *Gillespie LD, Robertson MC, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. The Cochrane database of systematic reviews. 2009(2):CD007146. http://onlinelibrary.wiley.com/store/10.1002/14651858.CD007146.pub2/asset/CD007146.pdf?v=1&t=hx1lqh1a&s=ea65572953b3958c7995f4f1d5acebc318f2ec70*

[26] *Koot VC, Peeters PH, de Jong JR, et al. Functional results after treatment of hip fracture: a multicentre, prospective study in 215 patients. The European journal of surgery = Acta chirurgica. 2000 Jun;166(6):480-5.*

[27] *Royal College of Physicians. National Hip Fracture Database: National Report. 2013. http://www.nhfd.co.uk*

Findings and recommendations

The recommendations cover clinical, structural, financial and cultural considerations and fall into four categories:

- Pre-operative.
- Inpatient rehabilitation.
- Discharge.
- Community/outpatient rehabilitation.

Pre-operative

Pre-operative assessment for TKR patients is provided by all physiotherapy services, and the benefits are well established. Assessment normally includes education, post operative exercise, rehabilitation plans, and organisation of rehabilitation equipment and educational material. Services associated inclusion of all these components with better outcomes. This assessment also includes the opportunity to identify patients at risk of a poor outcome to fast track them for post operative rehabilitation.[28]

Physiotherapy pre-operative assessment is less common for hip fracture patients. Where it does happen, rehabilitation can be planned much more effectively with a good understanding of the person's level of mobility and independence prior to their fracture. Physiotherapists who carry out a detailed pre-operative assessment believe this to be a key contributing factor to a shorter length of stay.

Recommendation 1

- All hip fracture and TKR patients should receive a multidisciplinary assessment pre-operatively to determine achievable goals of rehabilitation.

Recommendation 2

- For TKR patients, pre-operative care should include: education, post operative protocol, identifying patients at risk of a poor functional outcome and organisation of rehabilitation equipment at home.

Inpatient rehabilitation

Early assessment and mobilisation of hip fracture patients is embedded in the clinical practice of all services, in line with current guidelines. The majority of patients are mobilised once a day; however there is no guidance in relation to rehabilitation in the acute setting, and this needs to be addressed.

Recent research has identified that physiotherapists in the acute setting feel that they are only able to progress patients to a point where they are appropriate for rehabilitation, rather than initiating a rehabilitation programme.[29] The CSP project discovered similar concerns. However, intense rehabilitation in the early post operative stages - which includes balance, strengthening and endurance exercise - has been shown to improve outcomes.[30]

The picture is more positive for TKR patients. Almost all services (97%) responded that their TKR patients receive rehabilitation every day until discharge, and two thirds provide two sessions every day.

[28] *Smith TO, McCabe C, Lister S, et al. Rehabilitation implications during the development of the Norwich Enhanced Recovery Programme (NERP) for patients following total knee and total hip arthroplasty. Orthopaedics & traumatology, surgery & research: OTSR. 2012;98(5):499-505.*

[29] *Thomas S, Mackintosh S, Halbert J. Determining current physical therapist management of hip fracture in an acute care hospital and physical therapists' rationale for this management. Physical therapy. 2011;91(10):1490-502. : http://ptjournal.apta.org/content/91/10/1490.full.pd*

[30] *Liu CJ, Latham NK. Progressive resistance strength training for improving physical function in older adults. The Cochrane database of systematic reviews. 2009(3):CD002759. http://onlinelibrary.wiley.com/store/10.1002/14651858.CD002759.pub2/asset/CD002759.pdf?v=1&t=hx1lqtwf&s=0e10d646505c608df7c839b8d420d92ff5eaae02*

Recommendation 3

- More intense rehabilitation in the hospital immediately after hip fracture surgery, focusing not just on improving mobility, but on strength, balance and endurance.

A huge barrier to intense and frequent rehabilitation is service shutdown over the weekend, or resources being spread too thinly across seven days for the optimal level of care to be maintained.

All physiotherapy services we spoke to would like to offer seven day services, but none of them had received additional resources; most were stretching five day staffing to cover seven days. This has a huge impact on hip fracture patients. Only one quarter of services are staffed sufficiently to see hip fracture patients every day.

Recommendation 4

- Properly funded and designed seven day services to ensure consistent quality of care in terms of intensity and frequency of rehabilitation across the whole week.

It was found that the ward environment is not conducive to rehabilitation of the older person. Patients tend to remain around their bedside for mealtimes and personal care. This has the effect of increasing dependence and length of stay. Physiotherapists focus on getting the patient up and moving to ensure quick discharge. However, if all ward staff were supported to carry out this role, physiotherapists could focus on providing rehabilitation.

Recommendation 5

- There should be changes to the culture and layout of wards to ensure all staff are involved in encouraging patients' mobility and independence, providing opportunities for them to get active.

Discharge

The benefits of early discharge from acute care are indisputable.

Half of hip fracture services reported that up to 50% of their patients experience non medical delays. This study and others identify lack of social care services as the greatest barrier to early discharge.[31]

Physiotherapists reported that they are spending too much of their time on coordinating the discharge of the patient, rather than rehabilitation. This is significantly alleviated when trusts utilise designated discharge coordinators.

Recommendation 6

- Hip fracture patients should be discharged from acute care as soon as they are medically fit, to continue their rehabilitation in the most suitable environment (without a break).

There is a lack of clinical leadership along the whole hip fracture pathway. While in most trusts a consultant ortho geriatrician has responsibility for the inpatient pathway, once the patient leaves hospital there is very little coordination or management of their care.

Services that integrate their acute and community rehabilitation services are able to provide continuity of care, and are associated with shorter length of stay.

[31] *AGE UK. Nearly 2m bed days lost from delayed discharge. 2014. http://www.ageuk.org.uk/latest-news/nearly-2m-nhs-days-lost-delayed-discharge*

Recommendation 7

- There should be clearer identification of who is responsible for coordinating the discharge and continued care of the patient, to ensure there are no gaps in the rehabilitation - either by extending the ortho geriatrician role, or creating a new post that bridges acute and community health and social care.

There is a lack of clinical leadership along the whole hip fracture pathway. While in most trusts a consultant ortho geriatrician has responsibility for the inpatient pathway, once the patient leaves hospital there is very little coordination or management of their care.

Services that integrate their acute and community rehabilitation services are able to provide continuity of care, and are associated with shorter length of stay.

Community/outpatient rehabilitation

The CSP survey and service visits revealed disturbing gaps in rehabilitation for hip fracture patients after discharge. Fewer than half of all hip fracture patients were offered rehabilitation once they left hospital.

Patients offered 'Early Supported Discharge' (ESD) have an average waiting time of five days before they are able to see a physiotherapist. For non ESD rehabilitation, the majority of patients are seen within four weeks.

If patients are immobile at home and not confident to move, they are greatly at risk of other co-morbidities such as pressure sores, chest infections and deep vein thrombosis all associated with an increased re-admission rate, A&E attendance and use of GP time. One third of hip fracture patients with no history of depression have significant depressive symptoms six weeks after their fracture and poorer functional outcomes.[32] Regular and intense intervention provided by the rehabilitation team can reduce the risk of associated co-morbidities.[33]

Half of non ESD patients discharged home receive physiotherapy once a week, and one third receive physiotherapy less than once a week. The majority of those in nursing or care homes are seen less than once a week. Over one third of community services reported that 31-40% of their caseload is orthopaedic. However, three quarters do not have funding specifically ring-fenced for their orthopaedic caseload.

Community services should also support prevention. There is high quality evidence for the use of strength and balance training in older adults at risk of falls. [(14)]

Recommendation 8

- Community rehabilitation services should be adequately resourced to provide early, intense and frequent rehabilitation to all hip fracture patients.

Four out of five services routinely offer post-discharge rehabilitation to all their TKR patients. The majority of patients are seen within two weeks of discharge 60% of patients are seen individually on average 2-4 times and nearly one quarter are seen 5-7 times. Half of patients who receive rehabilitation in a group setting are seen 5-7 times.[34] Evidence casts doubt upon whether such intensive physiotherapy is necessary post-discharge.[35]

Studies and expert opinion suggest that, for most TKR patients, intensive post operative rehabilitation can instead be followed up with education and a well structured home exercise programme.[36]

[32] *Phillips AC, Upton J, Duggal NA, et al. Depression following hip fracture is associated with increased physical frailty in older adults: the role of the cortisol: dehydroepiandrosterone sulphate ratio. BMC geriatrics. 2013;13:60. URL: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3698022/pdf/1471-2318-13-60.pdf*

[33] *Auais MA, Eilayyan O, Mayo NE. Extended exercise rehabilitation after hip fracture improves patients' physical function: a systematic review and meta-analysis. Physical therapy. 2012;92(11):1437-51. URL: http://ptjournal.apta.org/content/92/11/1437.full.pdf*

Recommendation 9

- All TKR patients should have follow up with a specialist physiotherapist within three weeks post discharge to assess post operative progress. The majority will not require routine post operative rehabilitation.

This approach would allow for a critical shift in resources towards providing community rehabilitation for hip fracture patients and preventative services for those at risk of a fall.

Recommendation 10

- Community physiotherapy services should divert resources away from TKR rehabilitation to focus more on hip fracture patients.

Service Evaluation

Wide variation was found in the type and regularity of use of outcome measures.

Rehabilitation outcomes are not currently collected in national databases, although the National Hip Fracture Database (NHFD) has been extended to include a field for post operative mobility. Until rehabilitation data is routinely collected, it is impossible to evaluate rehabilitation services.

Recommendation 11

- Rehabilitation data should be routinely collected in the NHFD and the NJR to monitor patient across the whole pathway.

[34] *Latham NK, Harris BA, Bean JF, et al. Effect of a home-based exercise program on functional recovery following rehabilitation after hip fracture: a randomized clinical trial. JAMA : the journal of the American Medical Association. 2014 Feb 19;311(7):700-8.*

[35] *Rajan RA, Pack Y, Jackson H, et al. No need for outpatient physiotherapy following total knee arthroplasty: a randomized trial of 120 patients. Acta orthopaedica Scandinavica. 2004;75(1):71-3. URL: http://informahealthcare.com/doi/pdfplus/10.1080/00016470410001708140*

[36] *http://www.monitor-nhsft.gov.uk/sites/default/files/publications/The%20Fair%20Playing%20Field%20Review%20FINAL.pdf*

The solutions

Professionals

- The development of national guidance on best practice for the TKR and hip fracture rehabilitation.
- Clinical leadership and coordination across the whole pathway to ensure there are no gaps in the rehabilitation.

Patients

- Patients need to be well informed about the whole pathway of rehabilitation, expectations and preparations. There should be shared decision making.

Providers

- Providers will need to invest in rehabilitation to allow early discharge, high quality outcomes and increased productivity.
- Providers should consider as a priority properly funded and designed seven day services to ensure consistent quality of care in terms of intensity and frequency of rehabilitation across the whole week.
- Hip fracture patients should be discharged from acute care as soon as they are medically fit, to continue their rehabilitation (without a break) in the most suitable environment, to ensure consistent quality of care.

Commissioners

- Integration of health and social care to enable the delivery of a more consistent pathway.
- Prioritisation of rehabilitation provision along the whole patient pathway.
- Rehabilitation services should be adequately resourced to provide early, intense and frequent rehabilitation.
- Hip fracture patients should be discharged from acute care as soon as they are medically fit, to continue their rehabilitation (without a break) in the most suitable environment.

DH, NHS England and other statutory bodies

- The findings and recommendations from this report on rehabilitation should be embedded in the NHS England Rehabilitation work plan.
- Contribute these findings and recommendations to the implementation plans with DH and BOA.

Professional bodies and registries

- The CSP should coordinate the development of best practice guidance for TKR and hip fracture.
- Ensure robust links with all key stakeholders - NHS England, Public Health England (PHE), National Hip Fracture Database Advisory Group (NHFDAG), National Osteoporosis Society (NOS), Falls and Fragility network.
- Ongoing collaboration with BOA to implement report recommendations.
- Lobbying of registries for the inclusion of rehabilitation data in the registries.

Best practice

The innovative Bradford Teaching Hospitals NHS Foundation Trust ESD pathway helps people regain their independence and function following hip fracture or other orthopaedic problems. The ESD team of physiotherapists, occupational therapists and therapy assistants provide a direct link between acute and community services, delivering intensive post-discharge rehabilitation immediately when patients return home.

The team undertakes home visits, twice a day for an average of five days, focusing on setting individual goals to promote independence and optimise recovery. Liaison with other agencies helps ensure people receive the help they need to return to their normal lifestyle.

Between 2011-2013, the service saved the Trust a total of 2,698 orthopaedic bed days, equating to an estimated cost saving of more than £600,000. Readmission rates fell from 10-12% to 5-6%. Other outcomes included a reduction in risk of falls, and standard measures evidenced clinical improvements of between 25-50%.

Another good example of a post-surgical rehab unit is found at South Warwickshire NHS Foundation Trust where the enhanced recovery program was set up in 2004. The key characteristic of the services is that following discharge nurses and physiotherapists deliver hospital care in the patient's own home and the patient remains under the care of the orthopaedic consultant (rather than their GP) even though they are in the community. Also, patients are given a contact number to call patients and are treated as appropriate without having to contact their GP or use A&E.

The service, which runs from 8am-4pm seven days a week, treats elective arthroplasty patients and selected trauma patients (typically neck of femur fractures). The team will also administer intravenous antibiotics in the community to treat infections. Also, unlike most other enhanced recovery programs there are no exclusion criteria.

The most recent survey showed 97.8% were "satisfied" or "very satisfied" with the service and the cost of setting up and running the service was again significantly less than the income generated by reducing the numbers of beds, numbers of readmissions and increasing the number of operations. By changing to this model, the trust went from delivering 400 joints through 30 beds to 800 joints through 18 beds. Thereby enabling the trust to manage its own 18 week target without recourse to waiting list initiatives or AQP provision. The new enhanced recovery process also delivered an average saving of £1,000 per joint replacement meaning that the trust made an additional £800,000 while only expending £307,000 to run the unit.

12. Litigation

Litigation in healthcare has dramatically increased over the last 10 years, yet remains rare given the volume of surgeries undertaken. However the current potential liabilities are huge and need addressing. It has now become mandatory for the NHSLA to be informed of all claims against NHS trusts in England. Before 2002, there was no complete record of litigation, as trusts did not routinely inform the NHSLA of smaller claims. The rise in litigation is not surprising; there has been a change in society as a whole, reflected in a less trusting public and a more active promotion of legal services. These changes have been matched by key rulings from the House of Lords. Chester vs. Afshar (2004) raised the standard of acceptable care and confirmed the responsibilities of the surgeon to provide informed consent. The rate of litigation and its cost continue to rise at an unacceptable rate.

The NHSLA has reported a year on year increase in claims. Between 2007/2008 and 2011/2012 there were a mean number of claims per year of 7,202 with a total of 9,143 new clinical claims in 2011/2012. The NHSLA estimates that there are currently over £23 billion pounds worth of potential clinical negligence claims against the NHS. Surgical specialties are associated with higher rates of litigation. In the National Health Service Litigation Authority (NHSLA) report and accounts for 2012/13, orthopaedics was found to have the largest expenditure with the exception of obstetrics and gynaecology. Trauma and orthopaedic surgery has always been considered a highly litigious specialty due to the quantity of work undertaken, and the subsequent problems if mistakes or complications occur. Our specialty now accounts for more than 50% of all claims if obstetrics and gynaecology are excluded.

Medical indemnity insurance companies classify orthopaedics as the third highest risk specialty behind obstetrics and neurosurgery; for example, the Medical Defence Union (MDU) expects a claim every eight years against orthopaedic surgeons practicing independently compared to every 35 years in specialities such anaesthetics.

One of the important themes emerging from GIRFT is the issue of rapidly rising incidences of litigation in orthopaedics. The GIRFT team has worked with the NHS Litigation Authority to drill down to the specific details from which clinical negligence claims arise for orthopaedic surgery.

The information released from the NHSLA databank has been useful in highlighting the rapid rise in NHS potential liability for negligence claims. Of the 28 causes for litigation in orthopaedics, the top four causes are judgement, procedure, soft tissue damage and outcome. These are all potentially preventable, and relate to training, and often pressures due to the volumes of work and patterns of delivery. In order to improve patient safety, and as part of the on-going mandate from the secretary of state and NHS England, we are working with the leading law firms involved with orthopaedic clinical negligence - both defence and claimant - and the NHSLA to unlock the key details from cases. The intention is to compile procedure specific guidelines to improve patient care and safety, and highlight to clinicians the common failings. The initial focus is hip and knee procedures, which account for 18% of all claims.

The focus is on patient safety. We will be reviewing all cases that law firms have entered onto their databases, and not just cases that proceed. We intend to review all the data from 2003/04 to 2012/13 financial years, for hip and knee claims in trauma and orthopaedic surgery, with the aim of producing learning points and guidelines for trust and clinicians to reduce the litigation risk. Whilst using retrospective data initially, we hope to develop a prospective patients' medical negligence registry to give real time advice in the future.

NB. All data was secured and analysed within the data governance rules laid down by the NHSLA and only made identifiable at a trust level when trusts gave written permission. All rules regarding patient confidentiality were adhered to.

13. The capacity gap

The problem

More than 50% of trusts visited by the GIRFT team are failing to achieve 18 weeks from referral to completion of care. Other trusts, currently compliant are struggling to remain so - often using outsourced waiting list initiatives. Over half of the trusts in our dataset failed this target in orthopaedics. This represents a large volume of unmet need.

Meanwhile, the revision burden for all types of joint replacement is growing and the rate of increase rising significantly - we must question whether there will be sufficient surgical posts, trained surgeons to fill them, and the theatres and beds needed to meet this looming increase in demand for lengthier and more complex surgery.

Moreover, an increasing proportion of complex work will require two surgeons operating; this has already been recommended for spinal surgery by the Spinal taskforce led by Mr John Carvell. This will maintain quality in complex procedures, and allow mentoring of young surgeons who have less experience as a result of the changing face of training and the European Working Time Directive (EWTD) of 48 hrs working per week. It will also reduce potential litigation and allow on going mentoring for clinicians. However, this will place additional stress on productivity.

Currently the NHS's delivery in elective orthopaedics is already supplemented by a significant number of high volume independent treatment centres, some of which employ surgeons from outside the UK. Their involvement in training is very limited and many are not subject to the same levels of governance and audit processes as the equivalent NHS hospital or trust. It is imperative that these independent centres are subject to the same robust audit as NHS providers to ensure high quality outcomes and best value for money for the taxpayer. If the political environment moves away from the current concept of those deemed 'AQPs', then the capacity gap will be even greater and the NHS will need to ensure that it has the appropriate capacity to deal with this eventuality.

Theatre availability can be critical. At many hospitals clinicians reported delays within the theatre complex, leading to considerable variation in theatre throughput for routine procedures. The reasons given by different trusts were multifactorial but need urgent resolution to maintain maximum theatre productivity and throughput. The specialist hospitals are an exemplar of maximising theatre capacity.

The solutions

Professionals

- To work with local NHS providers to ensure appropriate productivity within trusts.
- Seven day working will potentially increase elective capacity, however additional staff and a more robust view of bed utilisation will be required.
- Clinicians need to work 'shoulder to shoulder' with their trusts to deliver change.

Patients

- Want a high quality timely service, which, with robust audit, can demonstrate quality outcomes.

Providers

- Engage clinicians within their local trusts to ensure a high quality delivered service that meets nationally mandated waiting times.
- A joined up approach is required between managers and clinicians to address this challenge.
- Empower clinicians to work more effectively, by providing them with the right quality environment that improves patient care and reduces cost and complications such as infection.
- Providers should task theatre management to improve efficiency.

Commissioners

- It is important that commissioners recognise that those struggling to meet 18 weeks from referral to completion of care are, in many cases, fighting a battle that they are not equipped to win. Whilst 18 weeks is a good target, it is a target that over 50% of the trusts that we have visited fails to meet in orthopaedics, especially when winter bed pressures are at their height. A combination of the development of elective orthopaedic services on 'cold sites', or within existing hospitals that have a robust 'ring-fenced policy' that can function separately from the main hospital, will support all those in a region seeking to bring waiting times under control. Furthermore we need a national commitment to maintain training figures at an appropriate level to provide a pipeline of expertise in the face of demand that is escalating as the population ages. Commissioners must recognise their responsibilities for training to ensure that future generations of patients receive appropriate care, and work with their NHS providers to ensure financial stability. Moreover, they must recognise the interdependencies of trauma and orthopaedics clinically and financially, as it is inappropriate to divorce one from the other.
- It might be asked how much of the unmet growth in demand is from appropriate referrals - but it is important to note that MSK triage services have been widely used across the country for some time and yet demand has continued to grow. Furthermore, although greater use of 'shared decision making' should be employed it should be acknowledge that hip and knee replacement surgery have a great deal of evidence to prove their safety and effectiveness and are unlikely to be amongst the group of procedures that patients would hesitate to opt for if in possession of more facts regarding the risks and benefits.

DH, NHS England and other statutory bodies

- In light of the many factors creating the orthopaedic capacity gap (rising demand, difficulty meeting 18 weeks, looming retirements from NHS practice, the reduction in the experience of newly qualified consultants, and a need for more mentoring and joint working) we are of the view that current training levels must at least be maintained. We therefore feel it is imperative that Health Education England (HEE) responds positively to the overwhelming evidence. NHS England must ensure a level playing field for NHS trusts, and must ensure that separating elective orthopaedics away from trauma (with the current tariff differential between the two) does not destabilise local NHS trusts with a potential risk to the trauma service and training needs. The knock on effect could result in patient safety issues.

Professional bodies and registries

- The BOA needs support to facilitate an annual manpower review in trauma and orthopaedics and to align the findings with requirements for timely care for patients. This will enable them to inform HEE of the trainees required to meet the rising burden of disease.
- Training programmes should remain general, to supply a sufficiently broadly trained workforce to cope with variation in demand in line with the basic tenet of the Greenaway report.

Figure 9 - Percentage of providers failing 90% threshold for 18 weeks in Trauma and Orthopaedics

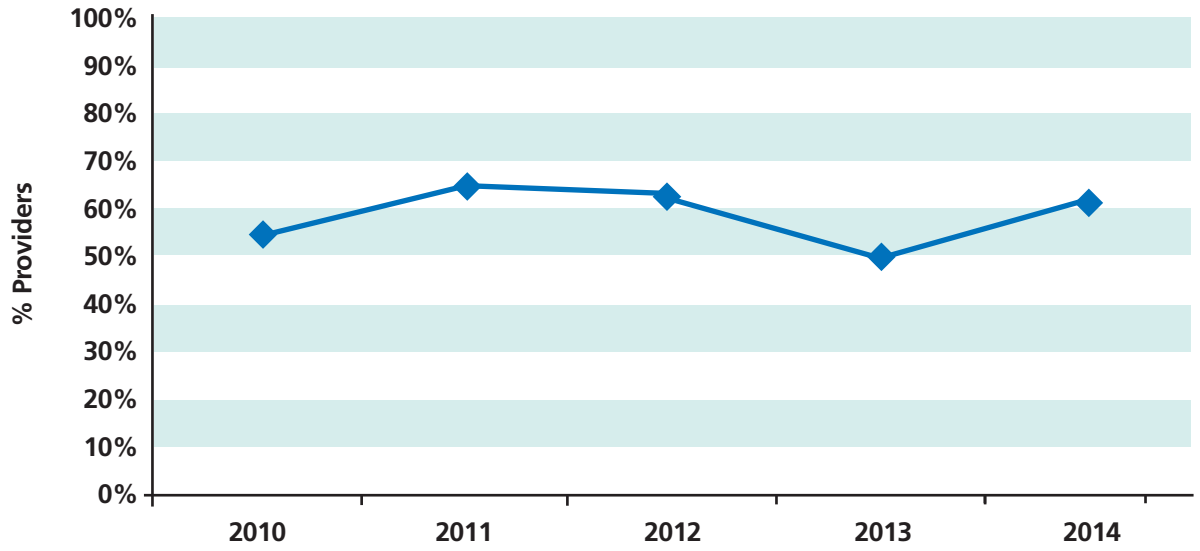


Figure 10 - Percentage of providers with patients waiting over 52 weeks in Trauma and Orthopaedics

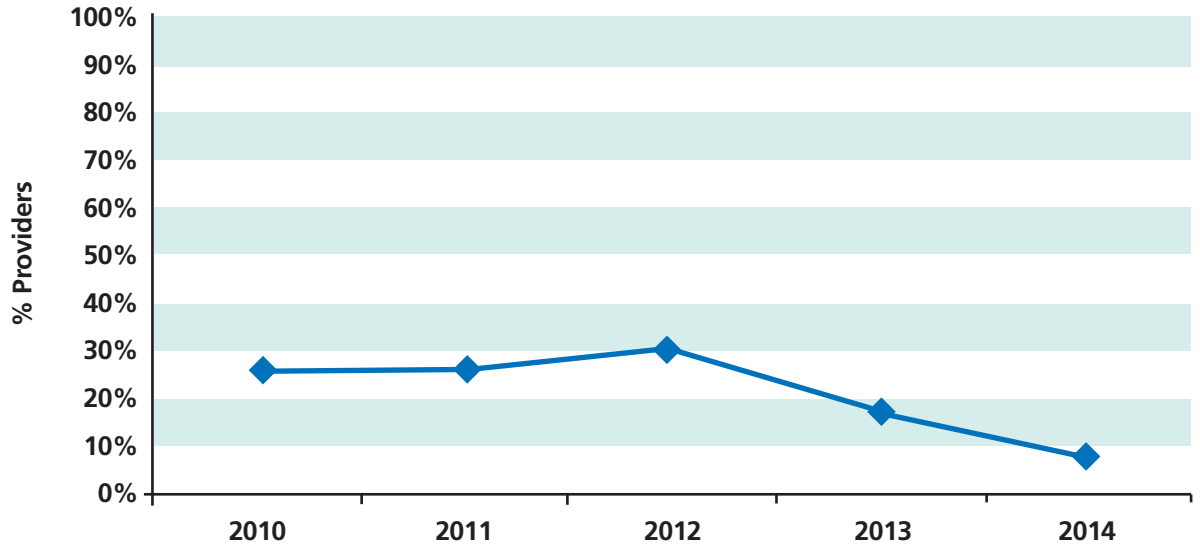
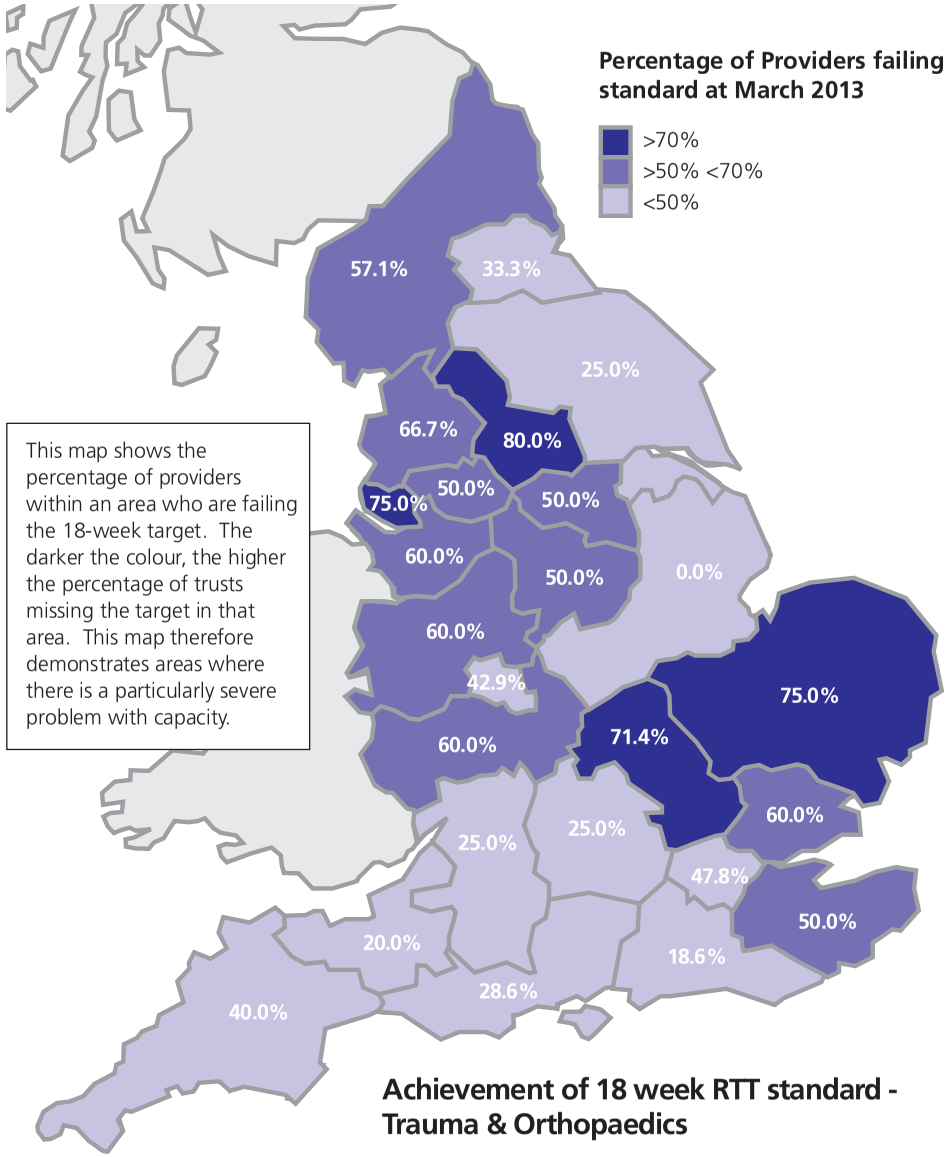
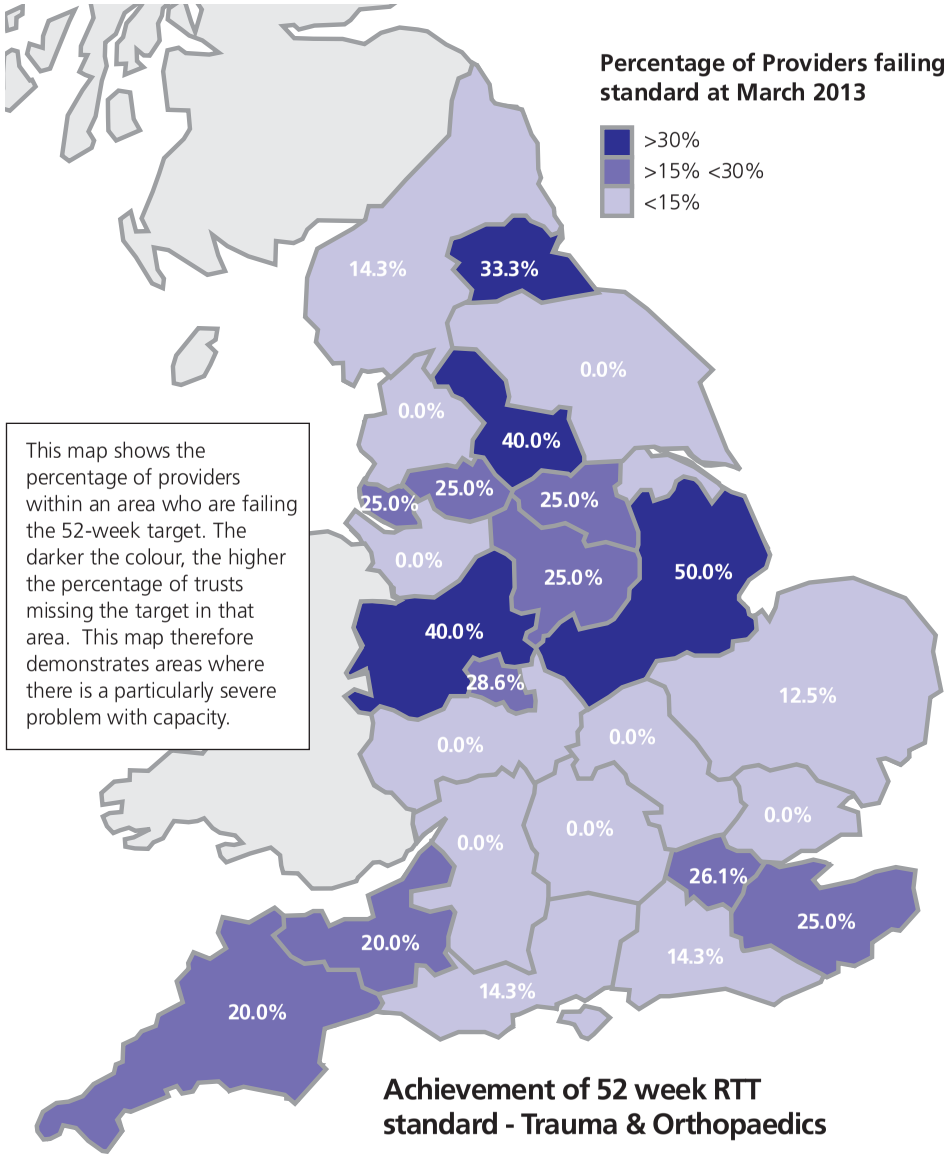


Figure 11 - Achievement of 18 week Referral to Treatment (RTT) standard in Trauma and Orthopaedics



Achievement of 18 week RTT standard - Trauma & Orthopaedics



Achievement of 52 week RTT standard - Trauma & Orthopaedics

14. Morale

The problem

As a part of the GIRFT visits, it has become apparent that in a significant number of orthopaedic teams morale is very low. By this we mean that clinicians feel disregarded and unappreciated. In some cases, the relationship with management has become difficult, if not completely broken down. It was characteristic that at most of the trusts demonstrating these problems the poor relationship between managers and surgeons resulted from differing degrees of either management and/or surgical team intransigence in terms of the relationship between them and a willingness to embrace change and/or accept clinical advice.

In these circumstances, clinicians felt that they had little voice, priority appeared to lie elsewhere. 'Ring-fenced' beds have been lost and theatres compromised. This is exacerbated during the winter bed pressures crisis. This is unpleasant for all concerned, and poses a significant risk to the quality and cost effectiveness of these services. Indeed, in one case, the GIRFT team felt obliged to refer the matter to the Care Quality Commission (CQC) after their trust visit.

The solutions

Providers

- A healthy management approach is one where management works 'shoulder to shoulder' with clinicians to find solutions that are clinically and financially sound. We have seen exemplary evidence of dynamic, well led and highly efficient units across the country, where clinicians have been empowered to make service improvement. One of the defining characteristics has been the supportive and well informed approach of the trust's executive team.
- Trusts should recognise, and where appropriate reward, clinicians leading service improvement.
- Trusts need to work with partner organisations to look at models of care that will ensure the right environment for 'ring-fencing' of beds and appropriate dedicated orthopaedic theatres. Focus on care delivery not facilities management.

15. Training

The problem

The GIRFT data has demonstrated that 60% of surgeons undertake 92.7% of primary hip operations and 60% of surgeons undertake 88.8% of total knee operations. It also reveals that, in most cases, these are the surgeons who have at least 15 years' experience - i.e. they are halfway through an average 30 year career as a consultant. As these surgeons move towards the second half of their career and reduce their productivity - as a consequence of ageing - the cohort following them will be less experienced than their senior colleagues. This is a result of changes in training, and the impact of the EWT Directive. This will undoubtedly mean that there will be fewer of the highly productive surgeons who are the current engines of many elective orthopaedic services within trusts (although some may speed up through their career).

Currently, the Manchester Academic Health Science Centre is reviewing surgeon productivity data to assess the impact of changes in training. Early data analyses support the hypothesis that the changes to training in recent years could significantly reduce productivity.

It is also evident that a significant proportion of younger surgeons favour predominantly un-cemented prostheses. If we move back to cemented implants for many of our older patients, many young surgeons are likely to require a period of retraining/mentoring by the senior surgeons in the art of cemented fixation techniques.

Moves towards seven day working for elective activity are currently being assessed by NHS England. Theoretically it should considerably increase the capacity for short stay elective activity. Without increased bed capacity for more complex cases, cancellations are likely later in the week should weekend working become standard practice. The number of available surgeons and support staff (including rehabilitation) will also need to match this change in practice.

The solutions

Professionals

- An increasing proportion of complex work should be undertaken by two operating surgeons, to support training and mentoring and encourage greater patient safety. This is important in terms of maintaining high quality in complex procedures, even though it is tough on capacity/throughput.

Providers

- New surgeons will have less experience as a result of changes to training and will need to work alongside a mentor for a longer period - again a stress on productivity.

DH, NHS England and other statutory bodies

Professional bodies and registries

- Finally the evidence base must be used to make decisions on the numbers of trainees. The pressure on surgeons is growing, the capacity gap is increasing (see topic elsewhere in this report), and new surgeons are less productive. A reduction of new trainees at present with rising demand and an ageing population would, in our view, leave an NHS short of appropriately trained clinicians to meet demand in the medium term.

16. Clinical coding

The problem

Closer working with clinical coders is needed and orthopaedic coding needs closer scrutiny. A number of the trusts we have visited are not submitting data to HES that the surgeons feel accurately represents the actual activity being undertaken. This results in some trusts not receiving appropriate remuneration for their activity. Thus the national data set is not a totally accurate reflection of some activity. In some trusts where the HES data has been challenged by clinicians, the visits have highlighted the need for clinicians and managers to work together to ensure that submitted HES data is accurate. This makes it very difficult for commissioners to plan services and undermines the financial position of the orthopaedic departments concerned.

The solutions

Professionals

- Clinicians need to work closely with managers and take more responsibility to ensure the accuracy of the coding of their procedures. Developing a closer relationship with coders is paramount.

Providers

- Trusts should invest in specialist orthopaedic training for their coders.
- The process of a number of beacons of good practice, such as the Avon Orthopaedic Centre (part of North Bristol NHS Foundation Trust), should be reviewed and replicated. Here surgeons and coders work together to undertake 'live coding' in the theatre department. Accuracy and adequate recompense have improved dramatically as a result of this project. It is proposed that a continuation of the GIRFT project could lead on this improvement programme.
- We have visited a small number of organisations where clinicians reported that they were not allowed access to the coders in case they had a 'corrupting' influence on the purity of the coding - something that should cease, particularly given the accuracy that arises from the Bristol project.

17. Relationship with local 'Any Qualified Providers' (AQP)

The problem

Poor long term planning over many years has led to a chronic nationwide under supply of NHS orthopaedic capacity. However, with no long term strategic investment in capacity, this has led to the situation where the service must continue to use alternative suppliers. It has become clear during our visits, how a good relationship with the local AQPs can add value and help manage waiting times. However, it has also been apparent how damaging competitive relationships can be, we have seen more than one trust where the same surgeons, working effectively for two competing services, can undermine the local NHS provider. The key difference in these two circumstances is the quality of the relationship between management at different sites. Key indications of a good relationship include transparent dealings and a mutually supportive approach. Furthermore, commissioners need to believe in collaboration rather than competition, and to support and encourage provider collaboration, through contractual obligations if needed.

A 'level playing field' is critical in terms of governance and benchmarking - indeed it has never been more important. Also, 'cherry picking' must either be managed or acknowledged as a reality otherwise local or national NHS providers will be penalised in terms of the expense of treating a higher proportion of more complex cases or emergency readmissions. These patients are likely to suffer from multiple co-morbidities or require complex surgery, both of which will require a longer inpatient episode which is not reflected in the tariff price. Furthermore, trusts rely on the Tariff income from the elective work to cross subsidise the trauma work, which attracts a lower tariff price. The outcome of this split will be to financially disadvantage the local NHS provider with potential risk to the continued provision of the local trauma service. Another consequence of a more complex case mix is the effect on PROMs scores and consequent BPT achievement for arthroplasty.

It is important that guidance such as that offered by Monitor is followed. However, commissioners and providers (both NHS and AQP) must also commit to seeking a collaborative approach.

Another area of concern is the growing trend of CCGs to seek to outsource the leadership of musculoskeletal (MSK) integrated community services through privately owned physiotherapist led triage processes aimed at surgery reduction. While the principles behind these services (to reduced inappropriate referrals) are sound, it appears from discussions across the country that the implementation often becomes a means of surgery avoidance and that the most vulnerable osteoarthritis (OA) patients may well be suffering as a result. Consultants in the locality and the local NHS Trust who have appropriate expertise are not consulted. The methodology and results of these services require regular scrutiny and review.

The solutions

Professionals

- Clinicians working with managers at their trust should be encouraged to seek collaboration with AQPs where applicable.
- Clinicians should not work against their local provider in competition for work that might undermine the financial sustainability of their trust to the detriment of their patients, their trauma service and the local NHS economy.

Patients

- Should receive timely and high quality care. AQPs should have governance structures in place to assure patients that outcomes are audited to the same standards carried out by the local NHS provider.

Providers

- Both local NHS providers and AQPs must ensure that their work is robustly audited to ensure high quality care and best value for commissioners. It is imperative that a level playing field exists between the two. We would recommend a spirit of collaboration rather than competition to ensure best value and practice.
- If AQPs select only the 'easy' cases in fit patients, have no emergency admission system, do not take back complications, have no trauma commitment, and have no role in training, this should be reflected in a differential lower tariff price.

Commissioners

- We propose that CCGs should be given more detailed support and guidance when considering outsourcing orthopaedics, to learn from some of the mistakes that have been made. For example, tenders that are put out must make sure that competition should drive quality, value and whole system sustainability and not just cheapest price. Furthermore, there must be an understanding of the indivisibility of trauma and orthopaedic services from both the clinical and financial perspective. Commissioners must recognise that the separation of the two independent services may undermine the trauma service and undermine the financial sustainability of the local trust.

DH, NHS England and other statutory bodies

- Local Health and Wellbeing Boards should must hold CCGs to account, to ensure that local services are not destabilised with unintended consequences, such as the knock on effect of trauma services.
- We have also observed, in a small number of cases, examples of surgeons leaving the NHS as a result of concerns over the quality of their individual clinical practice and then subsequently taking on high volume roles in the local AQP via 'Choose and Book' activity. This needs to be policed with robust audit and outcome measures that mirror those in the local NHS providers. A more open dialogue between the NHS and AQPs is the only way to facilitate this. Robust audit data combined with an active governance structure is the key to this problem.

[23] *http://www.monitor-nhsft.gov.uk/sites/default/files/publications/The%20Fair%20Playing%20Field%20Review%20FINAL.pdf*

18. Networks

The problem

We have been working with a number of nascent networks to review their shared output and help them understand the variations in quality and practice across their regions, including low volumes of specialist work. This has highlighted some significant variations in small demographically cohesive geographies - something that has provided food for thought for clinicians and managers of trusts considering reconfiguration or rationalisation of services.

It is clear that some providers need to collaborate to determine locally if there is a case for the creation of a shared elective centre model, and also to take decisions on minimum volumes and the centralisation of complex activity. However, many trusts reported evidence of local conflict and professional competition, and occasionally trusts reported evidence of a refusal to collaborate or network. In the current financial climate collaboration is required to ensure best care and value for our patients. Commissioners should drive collaboration through the contract negotiation process.

A common, widespread example of the need for a more formalised network approach for specific patient groups we encountered was spinal care. Disinvestment in local spinal services is creating a dilemma when spinal emergencies are admitted - particularly in the case of suspected cauda equina syndrome. Patients admitted to local trusts that have no dedicated spinal service out of hours or at weekends, very often do not have access to emergency MRI scanning services. This can delay the transfer and treatment of the patient to a hospital with a dedicated spinal team, despite the existence of a contracted pathway. This is not in the patient's best interests. A significant number of clinicians have highlighted this problem to us on individual trust visits. Commissioners need to make emphatic contractual requirements with the spinal hubs to provide robust cover and pathway of care across the region so that patients are not exposed to gaps in out of hours service. Local assessment expertise and radiological investigation has been degraded by centralisation and needs to be addressed by commissioners. Failure in this pathway leads to significant risk for negligence claims, each of which is very costly for the NHS.

The opportunities potentially offered by the specialised commissioning process are great in terms of making minimum critical volumes a core requirement for delivering specialised care.

Examples of the spread of truly specialised activity are included in the table opposite and underline the need to focus this activity into a smaller number of centres.

Table 7 - Volumes of specially commissioned 'specialist' activity suitable for networked solutions (2011/12)

This table shows all orthopaedic activity that is captured by the identification rules that accompany the service specification for the provision of specialised orthopaedics (as described by the CRG) and specialist spinal (as described by the CRG). It shows the distribution of defined "specialist" activity around the country and the imbalances that exist. This activity has been identified by NHS England and the CRGs as potentially appropriate for networked delivery.

NB - these are actual numbers, not 1000s, as specialised activity volumes do not currently include revisions, and volumes remain low as per the current specialist coding rules which do not yet match the published service specification for specialised orthopaedics. However, the spinal coding rules do match the service specification. Trusts were given an indication of the activity that would be captured if the coding rules or specialised orthopaedics were to be aligned to the specification.

Local Area Team of NHS England	Complex spinal	Hip	Knee	Upper arm	Hand or Foot	Other
Cheshire, Warrington & Wirral Area Team	141	1			8	13
Durham, Darlington & Tees Area Team	307	1			2	26
Greater Manchester Area Team	226	1			21	167
Lancashire Area Team	125			1	1	19
Merseyside Area Team	95	1		3	10	60
Cumbria, Northumberland, Tyne & Wear Area Team	283		2		14	74
North Yorkshire & Humber Area Team	74				6	20
South Yorkshire & Bassetlaw Area Team	177				6	65
West Yorkshire Area Team	215	1			11	101
Arden, Herefordshire & Worcestershire Area Team	87	1			3	30
Birmingham & The Black Country Area Team	269	1	2		42	274
Derbyshire & Nottinghamshire Area Team	280				9	54
East Anglia Area Team	250		1	1	15	70
Essex Area Team	167		1		8	43
Hertfordshire & The South Midlands Area Team	173	3	1		60	111
Leicestershire & Lincolnshire Area Team	100	2				55
Shropshire & Staffordshire Area Team	191	6	4		6	70
Bath, Gloucs, Swindon & Wiltshire Area Team	164	2	1	1	4	50
Bristol, North Somerset, Somerset & S. Gloucs	403	5	7	1	37	121
Devon, Cornwall & Isles Of Scilly Area Team	200	8	1		11	115
Kent & Medway Area Team	100				7	15
Surrey & Sussex Area Team	286	1	1		8	51
Thames Valley Area Team	364	4	5	1	26	90
Wessex Area Team	232				12	60
London Area Team	1,471	17	3	8	76	609
Grand Total	**6,380**	**55**	**29**	**16**	**403**	**2363**

Source: HES data for 2011/12 (FCEs selected using methods developed by NHS England CRGs for orthopaedics and spinal surgery).
Please note: These figures refer to the idenfification rules that are currently in place and do not match the written service specification.

The solutions

Professionals

- All the Clinicians in the units that we visited are keen to formalise networks. This should be encouraged to ensure patients receive their care at units or within networks with appropriate critical mass.
- The formalisation of orthopaedic networks would also support the adoption of two or more surgeons operating for complex cases and support the development of new appointees.
- With financial austerity, collaboration is key to maintaining a high quality timely service.

Patients

- Should be made aware of networks for complex and low volume cases and should be informed of the possible need for travel away from their local provider depending on the structures agreed locally to ensure best outcomes.

Providers

- Should work to make sure that robust networks are set up to ensure appropriate critical mass in complex and low volume cases to achieve excellent outcomes for patients with low complication rates.

DH, NHS England and other statutory bodies

- NHS England needs to roll out the five year plan proposals suggested by the Specialised Orthopaedics Clinical Reference Group - namely to seek the creation of more elective hub and spoke networks. In some cases, specialised elective hubs will be required as already exist for low volume specialist work such as sarcomas. There is an urgent requirement to rationalise the number of providers who undertake revision activity. This should be focussed across no more than 30-40 networks nationally.

Professional bodies and registries

- The profession must address the question of minimum number of high cost routine and complex cases and formal recommendations need to be issued. This should be led by the specialty societies through the BOA.

19. Early wins from the GIRFT project to date

During the visiting phase of this project and prior to publication of the full report, a number of early benefits have been realised, including:

- Input into the decision making process by HEE that sets the number of trainees for trauma and orthopaedic surgery. The GIRFT project highlighted that demand and capacity is not in balance, there is a significant capacity gap. Referrals are rising, and there is an increase in complex surgery. As a result, training numbers were increased to 191 in 2014 and look set to be maintained at a reasonably high level for 2015. Further review is recommended in two years.
- GIRFT worked with the Better Procurement, Better Value, Better Care teams to review the pricing of orthopaedic implants; most specifically, the highest volume ones - those for hip and knee replacements. On the basis of this analysis Professor Briggs is writing to all providers and surgeons in England and Wales to let them know the price range that is being paid for the core ranges of the leading brands for these procedures.
- This exercise has demonstrated extensive variation in price. This letter is aimed at supporting providers in moves towards greater transparency in their orthopaedic procurement, and also suggests the price thresholds at which a joint decision making process should kick in.
- Direct discussion during visits has already begun to influence the shape and form of orthopaedic networks, including one network for revision arthroplasty in Nottingham, a city wide review in Manchester and very direct participation in the on going review of the structure of orthopaedic delivery in London.
- An international orthopaedic consensus panel symposium led by the BOA was held at the combined meeting between the BOA and the European Federation of Orthopaedics and Traumatology (EFORT) in London in June 2014. It is recognised that this is a problem that affects all continents around the world. From this, an English-speaking world consensus panel in orthopaedics has been established to propose solutions for tackling the increasing demand for MSK services within a financially austere landscape. It is proposed that the review will culminate in an international meeting in 2015/2016. Already other international orthopaedic associations have asked for copies of the GIRFT report and Professor Briggs has been asked to set up and moderate a two hour symposium on 'The International MSK Time Bomb - time for action' at the annual American Academy of Orthopaedic Surgeons (AAOS) to be held in Las Vegas USA in March 2015.
- A working party has been established involving the BOA, the NHSLA and leading solicitor firms for both defence and claimants, to reduce litigation working in trauma and orthopaedics within the NHS. The initial phase will look at litigation in hip and knee which is responsible for 18% of all claims.
- Each individual trust visit has resulted in an educational process for orthopaedic clinicians across England, based around activity and using the evidence base. This has resulted in clinician empowerment.
- GIRFT visits have been undertaken at all Health Boards in NHS Wales in November 2014 to review elective orthopaedic services.
- GIRFT visits are under discussion with NI for 2015.

20. Conclusions

The GIRFT national pilot has gathered overwhelming support from clinicians across the NHS, as it has been driven clinically with face to face meetings with orthopaedic clinicians and managers at individual trusts. The team personally visited over 200 NHS sites to understand first hand the differing practices and challenges to identifying realistic and achievable efficiency opportunities. The unique dataset sent to each trust 14-21 days before the GIRFT visit enabled us to have a robust peer to peer review. A major part of the visit was to understand the data and hear first hand from clinicians and managers about their service and how it could be improved.

As well as its immediate impact, the project is intended to have a long term positive impact on service delivery. This includes delivering a clinically led, provider side focused catalyst, for improvements in quality and reductions in costs; informing the setting up and/or enhancing of robust clinical networks; and supporting the direction of travel being developed by the CRGs guiding specialised commissioning within NHS England. Its basis has been to enhance the quality of care with a consistency of standard delivered to the population.

Orthopaedic procedures are in such high demand because they improve quality of life so dramatically for patients. It is our responsibility to work with government and commissioners to ensure that quality remains high and provision remains timely, affordable and sustainable.

In addition to providing each trust with local commentary, and opportunity for reflection and guidance, it is clear that there are significant issues arising from this pilot that need to be addressed at a national level. The most significant being:

- There is an urgent need to reduce the widespread variation in practice across the country.
- Networks need to be set up for complex orthopaedic procedures to ensure best outcome and best value.
- Rehabilitation services need to be improved and should begin immediately post operation for all hip fracture and TKR patients to restore mobility, function and confidence, reduce the risks of depression, and support a return to living as independently as possible at home. For hip fracture patients, this must continue without disruption after discharge.
- Intensive rehabilitation during the acute phase achieves better outcomes when delivered seven days a week, but there must be sufficient investment to fund this, instead of simply stretching five day services over the longer period.
- Elective orthopaedics requires an environment in which the infection risk is minimised. This will involve 'ring-fenced beds', laminar flow theatres, and improved theatre discipline and appropriate orthopaedic theatre staffing as an essential part of practice for any orthopaedic unit undertaking joint replacement surgery.
- Minimum critical volumes - this needs to be formally addressed by the profession and guidance issued.
- The existence of the capacity gap in elective orthopaedics needs to be acknowledged, training numbers cannot be cut and difficulties with 18 week targets must be seen in the national context.
- NICE, NHS England and CCGs need to formalise the requirement for ring-fenced elective orthopaedic beds, as a basic essential requirement for high quality service provision.
- Surgeons struggling with a 'top down' management relationship are demoralised and disengaged. The command and control methodology doesn't work but still exists. They need a mechanism in which their concerns can be listened to and acted upon. This management methodology is not best for patients. In our view 'shoulder to shoulder' working is the only way forwards for trusts, especially in times of financial austerity.
- Commissioners and Monitor need to emphasise that clinicians should use the evidence base from registries where that exists. The current marketing led trend towards un-cemented implants in patients over 65 years is not supported by the evidence of many registries and is too expensive. Appropriate guidance needs to be issued.
- Orthopaedic surgeons need closer working relationships with clinical coding departments and need to take individual responsibility for understanding, and complying with, the process for PROMs and NJR.
- The NJR needs to review how the issues relating to revision data can be managed/accounted for. With the appointment of the new NJR Medical Director this is now being addressed.

- The NJR needs to ensure that orthopaedic surgeons also receive their trust wide report, it will drive accountability at a more corporate level.
- Providers must use the tariff as a lever to improve a range of behaviours.
- Commissioners should be explicit in requiring and supporting collaboration and communication between their NHS and AQP providers, just allowing the situation to happen organically is damaging.
- Clinical dashboards should be transparent, understandable and reflect the whole patient journey and outcome including the section prior to surgery in the assessment and treatment centres.
- Commissioners should ensure that they have robust transparent data for the success of each stage of a patient's journey.

If these conclusions are followed through in their entirety to optimise the national service, the potential quality improvements and subsequent savings are significant given that trauma and orthopaedic surgeons make up 33% of the surgical workforce and provide 25% of all surgical interventions within the secondary care. The total annual MSK spend is £10 billion, the third highest behind cardiac and mental health, of which 80% is spent in hospitals that are the providers. Across this expenditure of £10 billion on MSK, each year there is a minimum efficiency saving of nearly 4% per annum (£2 billion spread over the next five years) that could be achieved by empowering clinicians through engagement. Examples of the potential savings identified included:

- Loan kit costs varied amongst providers from as little as £50,000 per annum to up to £750,000. Many trusts quoted figures of £200,000 to 400,000. This demonstrates the need to move to detailed consistent national reporting of this cost, however, a broad estimate based on reducing loan kit by 90% suggests in the region of £21 million a year could be saved across the 120 high volume elective providers in England. 90% reduction within next two years = **£108 million over 5 years.**
- Cost of implants (only Hip and Knee Prostheses). The NJR pilot on pricing demonstrated the large variation in price being paid for the same prostheses. The trusts involved in pilot were quickly able to realise very significant savings by challenging pricing. Furthermore, the shift to un-cemented has further driven up the implant budget (with the exception of one implant of similar cost to cemented) and a shift back to usage that more closely models the evidence from the NJR and the Scandinavian registries would drive significant savings. It is proposed based on the experience of the NJR pilot and from collaboration with trust procurement teams that a saving of up to £40 million per annum could be achieved across the 120 elective providers. Saving £40 million per year = **£200 million over 5 years.**
- Orthopaedic litigation costs have risen by £30 million per annum for each of the three years leading up to and including 2011/12. With the totally litigation cost for the final year being in approximately £180 milllion. However analysis of the causes of litigation indicates most are avoidable. It is proposed that a programme of work is undertaken to address rising litigation costs and that a reduction of up to £50 million per year should be achievable. **£150 million over 5 years.**
- Reduction in deep wound infection in TKR / THR which currently runs as high as 5% for a number of units and costs c. £100,000 per patient (based on comparative cost analysis of managing deep wound infection across a number of providers - cost drivers including re-operation, extended length of stay, high cost long term antibiotics and new high cost replacement prostheses) to resolve which equates to an extra £1,000 for each arthroplasty procedure to cover the costs of readmission, reoperation and medication for infected patients, as well as costs in the community = **£1.5 billion over 5 years**. This becomes greater still when rolled out to other orthopaedic procedures.

21. Next steps

This pilot has assessed the quality of existing practice across England and has identified specific aspects of the service where there is an unjustifiable variation in practice and quality. The next stage is to develop a series of specific programmes that will seek to facilitate change and thereby drive improvement in quality, reduce variation in practice and deliver cost savings. The GIRFT team is currently formulating the detailed scope for the next phase focusing on the provision of orthopaedics, and are currently in dialogue with The Department of Health.

The objective is to build on the lessons of the GIRFT pilot, and to focus on the creation and implementation of solutions/improvement programmes in order to:

- Improve the quality of outcome and patient experience.
- Enhance safety.
- Address unacceptable variation in practice and outcome.
- Challenge unacceptable and wasteful practices.
- Identify and disseminate best practice.
- Provide hands on consultancy/intervention to effect rapid change.

This will require leadership from all, especially the BOA, with clinicians standing 'shoulder to shoulder' with managers and commissioners - in order to deliver a timely, workable and financially sustainable model of care that will provide elective orthopaedic service to our population as it ages, within current NHS financial constraints.

It is hoped that the outputs of the next stage of the project will transition orthopaedics through to implementation stage across a range of Provider Enablement Group (PEG) projects involving collaboration across all across the profession and other key stakeholders. Establishing robust quarterly benchmarking to make sure that quality and behavior are monitored to ensure that improvements really are implemented so as to extend the reach and the success of the GIRFT methodology to other disciplines. Figure 11 outlines the outputs for this next phase. The project could also offer practical support for other specialties wishing to implement the approach.

We must not lose this window of opportunity and must act now.

Figure 12 - Outputs for the next phase of the GIRFT programme

Orthopaedic GIRFT 2

- Quarterly dashboard to DH/NHSE, providers, and commissioners. Developed in conjunction with key stakeholders.
- Deep dives - review areas of strength and weakness.
- Link to PEG project.

MSK Pathway GIRFT 1

- Establish a dashboard for the MSK pathway in collaboration with all MSK community stakeholders and professional bodies.
- Reports for each CCG on local functionality.

Orthopaedic PEG

(a guided collaboration with key stakeholders to identify solutions)

Procurement

- Collaborate with DH, NHS Supply Chain and NJR.

Fixation

- Work to implement levers for change.
- Support change at a provider level.
- Drive change via commissioning support.
- Education.

Infection Taskforce

- Link to benchmarking.
- Case studies, education and workshops.
- Implementation consultancy.

Litigation Group

- Collaboration with the six top medical negligence law firms - create guide to the most commons causes of litigation.

Commissioner Support Services

- Contracts and consultancy.

GIRFT Blueprint

- Submit proposals to other specialties and undertake project development.

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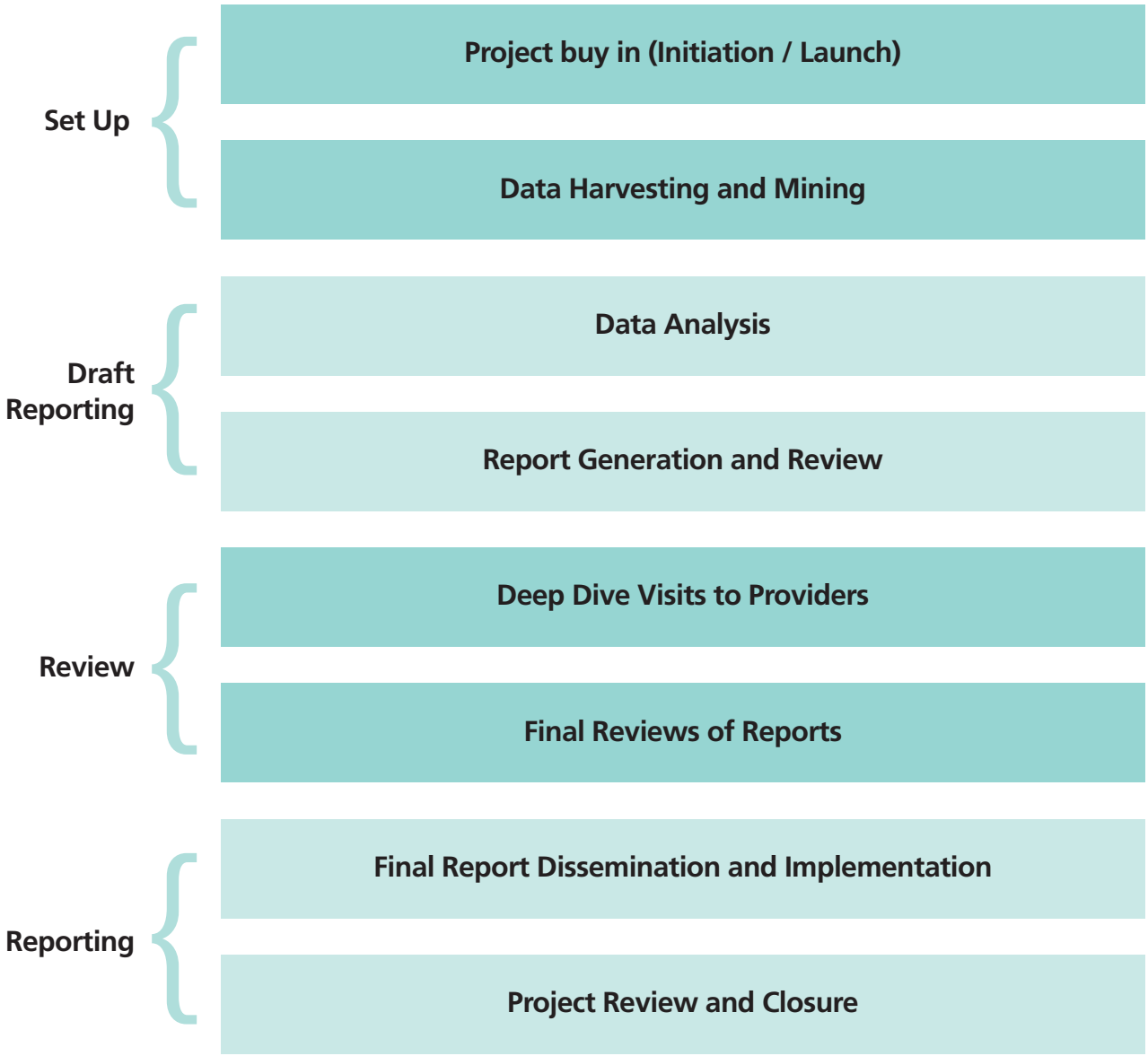
Appendix 1 - GIRFT project structure



Appendix 2 - Stocktake of rehabilitation services Data relating to themes and recommendations

Findings

The findings from the stocktake can be distilled into four major themes:

- Variation in rehabilitation practice, within and across the two pathways.
- Lack of emphasis on rehabilitation in the immediate post surgery period for hip fracture patients on acute wards.
- Variation in seven day service provision.
- A lack of integrated commissioning and provision of rehabilitation and social services, including situations in which multiple providers of community services are involved.

The findings are based on data from 46 survey responses from NHS trusts and in depth interviews undertaken within an additional 15 NHS trusts.

1. Variation in rehabilitation practice

The delivery of rehabilitation to TKR patients and hip fracture patients has different emphases. The length of stay (LOS) for TKR is much shorter (average 3-4 days), with a focus on regaining strength and mobility. For hip fracture patients, rehabilitation is slower - stream (average LOS 20 days), aimed at returning the patient to his or her pre-fracture capabilities and building confidence to prevent further falls.

Table 1 sets out the variation in provision and waiting times for rehabilitation for the two pathways.

Table 1: Variation in provision and waiting times

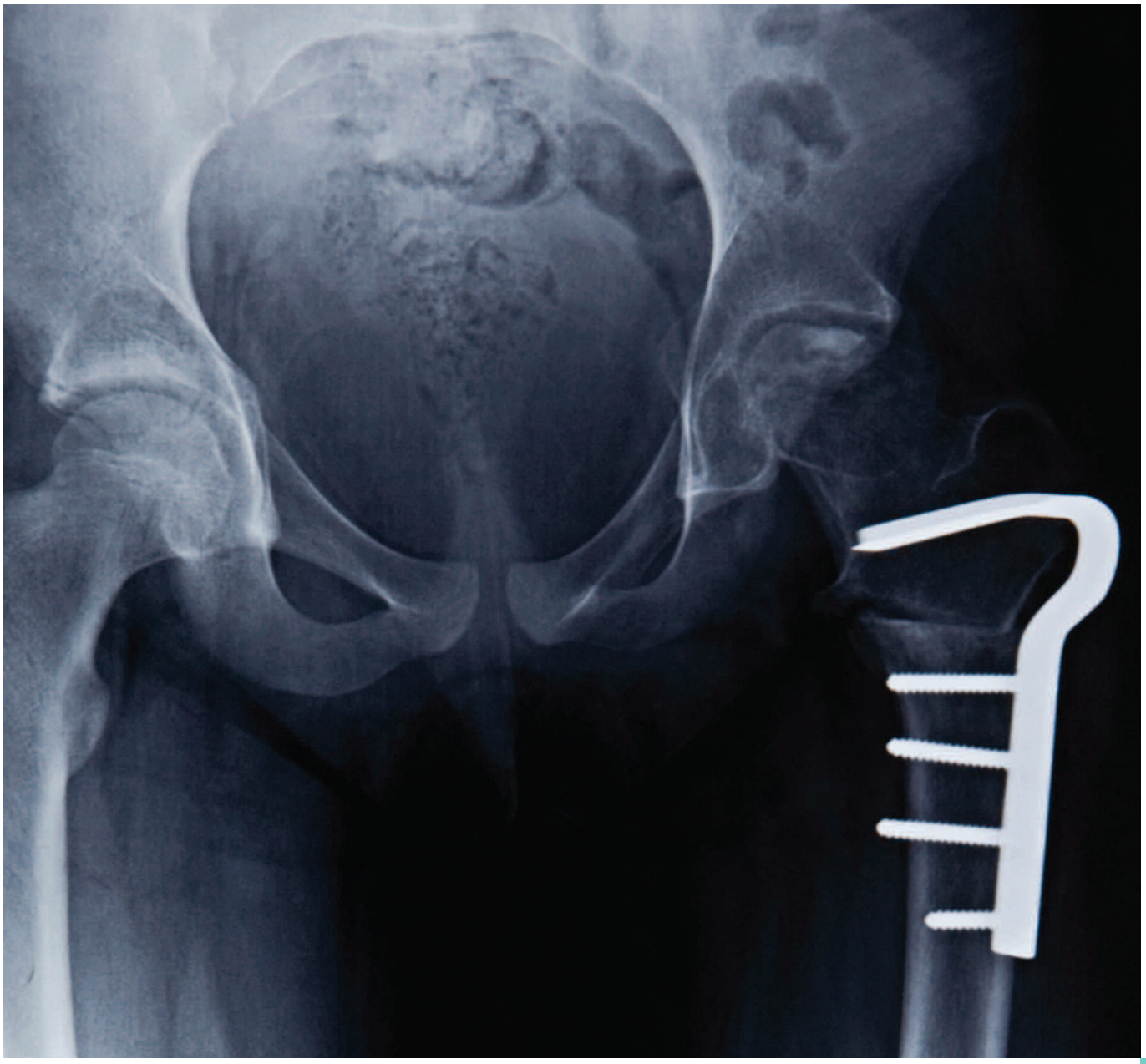
Variable	TKR	Hip fracture
Amount of inpatient rehabilitation	Daily until discharge - 97% of services Average number of times a day = 2 - 65% services	Offered mobilisation at least once a day until discharge - 89% of services
Weekend and public holiday inpatient physiotherapy services	For all patients - 62% of services For some patients - 38% of services	For all patients - 26% of services For some patients - 63% of services For no patients - 11% of services
Delays to discharge - % of patients experiencing delays	0-25% - 97% of services 26-50% - 3% of services	25% - 33% of services 26-50% - 54% of services 51-75% - 13% of services
Post-discharge rehabilitation	All patients - 80% of services	All patients - 41% of services
Waiting time for post-discharge rehabilitation	Up to 1 week - 23% of services 1-2 weeks - 65% services 2-4 weeks - 13% services	Up to 1 week - 26% of services 1-2 weeks - 37% of services 2-4 weeks - 26% of services More than 4 weeks - 11% of services

Interview feedback

For hip fracture patients, thorough pre-operative assessment needs to include a social history, initial discharge planning and falls screening. Discussing expectations and post operative plans with the patient and his or her carers tends to be associated with a shorter length of stay and improvement of outcomes for the patient.

Physiotherapists who are progressing the rehabilitation needs of hip fracture patients require a broad knowledge and range of skills relating to the management of ageing.

Close communication within the whole team, to undertake realistic goal setting is crucial. This enables there to be a strong focus on rehabilitation; to encourage independence, activity and mobility.



2. Lack of emphasis on rehabilitation in the immediate post surgery period for hip fracture and TKR patients on acute wards

Table 2: Variation in inpatient rehabilitation

	TKR	Hip fracture
Inpatient rehabilitation	97% of services offer rehabilitation daily until discharge. 65% offer 2 sessions of rehabilitation per day	89% of services offer mobilisation at least once a day until discharge

Interview feedback

The provision of effective pain management, particularly for patients with dementia, constitutes a challenge in the rehabilitation of patients who have experienced hip fracture.

Physiotherapists are spending a great deal of time organising a safe discharge to home for hip fracture patients. This reduces the amount of time available for rehabilitation. Services with a dedicated discharge coordinator, who is able to work with the patient and carer to plan and organise discharge, are more streamlined and can demonstrate a shorter length of stay for patients.

In most hip fracture services, there is more of a focus on improving mobility than rehabilitation. Whilst this is an essential component of rehabilitation, additional time is needed for improving balance, strength, endurance and rebuilding confidence. This provides longer term improvements, for both independent mobility and to prevent future falls.

Survey feedback

"Not always possible to see day 1 #NOF patients due to staffing at the weekends. Rehabilitation is not always possible daily due to case load pressures."

"Not staffed adequately for every patient to have daily rehab."

"Unsatisfactory at best due to staffing levels."

"Not enough rehab services in terms of community based inpatient beds when patients not independent enough for discharge".

"It helps our practice that we have received training from Dementia team and attended specialist courses on Dementia."

3. Seven-day service provision

Table 3: Seven day service provision

	TKR	Hip fracture
Provided for all patients	62%	26%
Provided for some patients	38%	63%
Not provided	0%	11%

Interview feedback

There was a common view that improving staffing all day Saturday and Sunday results in a decrease in length of stay, particularly if it is then possible to discharge patients over the weekend. Most physiotherapy services that offer seven day provision have not had an increase in staff resource. Rather, the resources for a five day service have been stretched to cover seven days.

Whilst some teams highlighted the benefit of the hip fracture programme in terms of recruitment for rehabilitation, they have been unable to secure resources for seven day services. Those that have secured resources for seven day services highlighted a challenge: management of major traumas takes preference, due to higher prioritisation level.

Survey feedback

"In most services, weekend cover for hip fracture is not routine."

"This [weekend cover for hip fracture not being routine] being a particular problem if a patient had surgery for hip fracture on a Friday. They are unlikely to receive rehabilitation until Monday".

4. A lack of integrated commissioning and provision of rehabilitation services, including multiple providers of community services

Based on the survey data, it appears that fewer than half (41%) of services offer hip fracture patients multi-disciplinary rehabilitation, as part of early supported discharge.

Only half of the services who do offer early supported discharge offer it to patients who are admitted from care or nursing homes.

These Figures compare the waiting times for rehabilitation for early supported discharge and non ESD patients.

Figure 1: Average length of time before physiotherapy assessment following discharge from hospital: ESD hip fracture patients

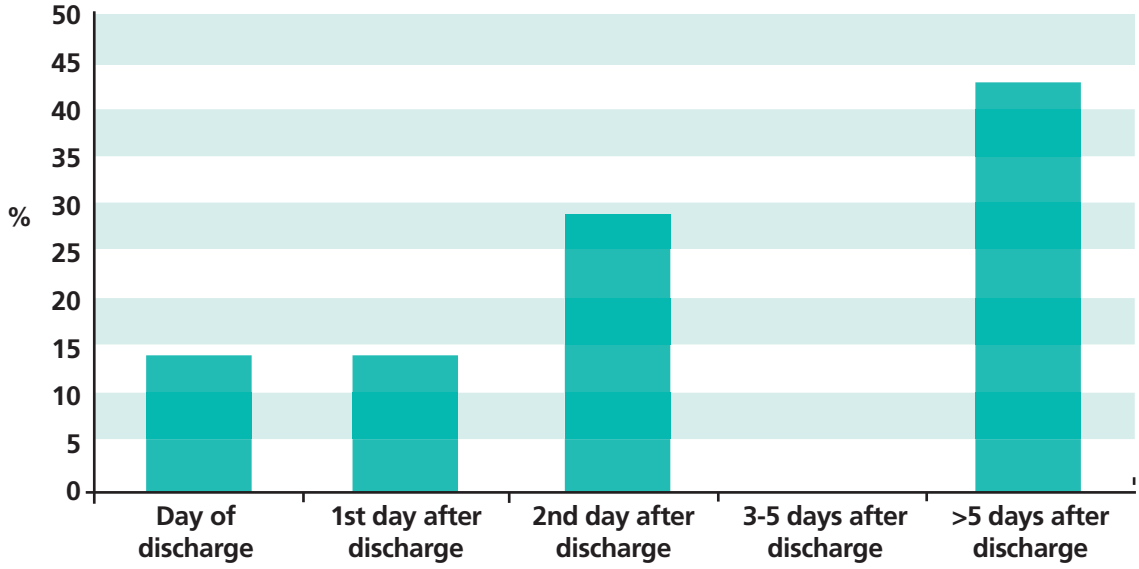
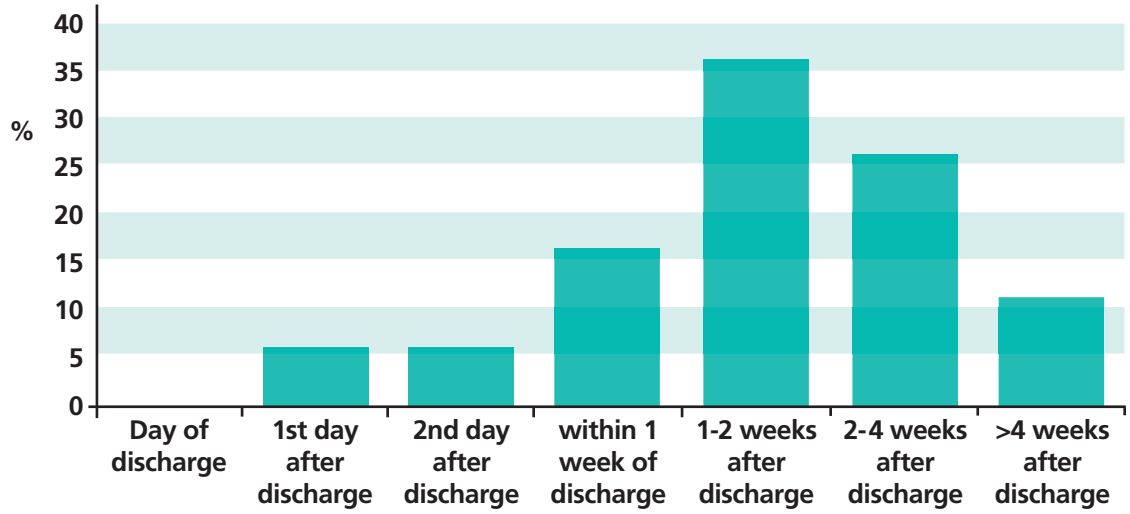


Figure 2: Average length of time before physiotherapy assessment following discharge from hospital: non ESD hip fracture patients



Interview feedback

Interviewees described many challenges associated with managing patients within the community. They feel that a lack of ring-fenced money for rehabilitation means that often patients have to wait a significant length of time before they can access rehabilitation.

The need to work more closely with acute colleagues/commissioners around pathway development, commissioning intention and complete pathway evaluation was raised.

Strengthening 'joined up' thinking on falls management across the whole pathway is an area where further improvements could be made.

There remains a requirement for many hip fracture patients to be able to access a reablement package that includes social care. Delays often arise due to waiting for equipment or house renovations.

Survey feedback

"Community based services are complex, often involving multiple providers and with poor links to social care".

"There is a lack of capacity within community rehabilitation teams, including a lack of availability of rehabilitation beds."