

G I R F T

GETTING IT RIGHT FIRST TIME

February 2020

Getting It Right in Orthopaedics

REFLECTING ON SUCCESS AND REINFORCING IMPROVEMENT

A follow-up on the GIRFT national specialty report on orthopaedics



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Data from the National Joint Registry and Orthopaedic Data Evaluation Panel

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GIRFT has conformed to the NJR's standard protocol for data access and publication. The views expressed represent those of the authors and do not necessarily reflect those of the National Joint Registry Steering Committee or the Healthcare Quality Improvement Partnership (HQIP), who do not vouch for how the information is presented.

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Acknowledgements	2
Table of contents	3
Foreword	6
Endorsing statement	7
Executive summary	8
Introduction	11
Scope	12
Supporting trusts to implement GIRFT recommendations	13
Strong attendance and awareness of data on deep dive revisits	14
Independent providers.....	15
Patterns by trust types and regions.....	16
GIRFT working with the devolved administrations.....	19
Reflections on GIRFT from other sources	21
1. The King's Fund.....	21
2. NHS Providers.....	21
Key outcome data	22
1. Significant reductions in the rate of revisions for total hip replacements and total knee replacements	22
2. Average lengths of stay reduced by a fifth	25
3. Release of £696 million operational and financial opportunities by trusts to date.....	27
Report themes	28
1. Minimum volumes.....	28
2. Service design: Ring-fenced beds.....	35
3. Service design: Hot and cold sites.....	38
4. Choice of implant	42
5. Knee arthroscopy	49
6. Stocktake of rehabilitation services.....	51
7. Training.....	54
8. Litigation.....	56
9. Surgical site infection and theatre environment.....	60
10. Procurement and medical device surveillance.....	65
Appendix - National operational and financial opportunities	75

Contents

Case studies

Case study 1	Nuffield Health's experience of working with GIRFT.....	15
Case study 2	Delivering improvements in orthopaedics at a challenged trust.....	16
Case study 3	Networking: Greater Manchester Orthopaedic Alliance.....	30
Case study 4	Dual operating for complex cases and weekly scheduling meeting to address minimum volumes....	31
Case study 5	East Midlands Specialist Orthopaedic Network (EMSON).....	32
Case study 6	Knee revision surgery South West 'network of networks'.....	33
Case study 7	Ring-fenced elective orthopaedic ward moved to protect against winter pressures.....	36
Case study 8	Gloucestershire Hospitals NHS Foundation Trust, hot and cold sites.....	39
Case study 9	Royal Cornwall NHS Foundation Trust benefits resulting from hot and cold site split	40
Case study 10	United Lincolnshire Hospitals NHS Trust trust-wide cancellations done on day of surgery for elective orthopaedics due to no beds, before and after hot and cold site split.....	41
Case study 11	Increased use of cemented fixation in the North East	43
Case study 12	Trusts increasing use of cemented fixation for patients aged 70 years and over	44
Case study 13	Introduction of 'twilight physio' at Newcastle upon Tyne Hospitals NHS Foundation Trust	53
Case study 14	Investing to save in staffing at Manchester University NHS Foundation Trust	55
Case study 15	Litigation	58
Case study 16	Multidisciplinary approach to reducing SSI rates in hip fracture patients	61
Case study 17	Reducing surgical site infection rates across Newcastle upon Tyne Hospitals NHS Foundation Trust	62
Case study 18	Reducing spending on loan kits at Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust	67
Case study 19	Introduction of a single supplier for lower limb joint replacement at North Tees and Hartlepool NHS Foundation Trust.....	72
Case study 20	Financial and released bed days opportunity at University Hospitals Plymouth NHS Trust.....	73

Data tables

Table 1	GIRFT orthopaedics in numbers	8
Table 2	Follow-up report headings explained	11
Table 3	Summary of national operational and financial opportunities released	27
Table 4	Minimum volumes demonstrated by NJR data.....	34
Table 5	Live, pilot and planned hot and cold site splits.....	39
Table 6	ODEP usage by rating, 2012 and 2018	47
Table 7	Volume and cost of clinical negligence claims against trauma and orthopaedic surgery (excluding spinal surgery) notified to NHS Resolution 2012/13 to 2017/18	59
Table 8	Surgical site infection audit - arrangement of follow-up appointment	63
Table 9	Surgical site infection (SSI) rates by procedure	63
Table 10	Pricing ranges listed in GIRFT pricing letter	66

Implementation reporting

Implementation reporting 1	Minimum volumes implementation (ORT2a, ORT2b, ORT2e).....	28
Implementation reporting 2	Ring-fencing beds implementation (ORT5d)	35
Implementation reporting 3	Hot and cold site implementation (ORT5f)	38
Implementation reporting 4	Cemented or hybrid fixation in patients over the age of 70 (ORT3a).....	42
Implementation reporting 5	Standardised, evidence-based method for implant choice (ORT3b).....	42
Implementation reporting 6	Rehabilitation services implementation (ORT6a-f).....	52
Implementation reporting 7	Litigation implementation (ORT11a-e)	56
Implementation reporting 8	Surgical site infection and theatre environment implementation (ORT5a-c, ORT5e).....	60
Implementation reporting 9	Procurement implementation (ORT4).....	66

Figures

Figure 1	Kaplan-Meier estimates of cumulative revisions by year, in primary hip replacements plotted by year of primary	23
Figure 2	Kaplan-Meier estimates of cumulative revision by year, in primary knee replacements plotted by year of primary	23
Figure 3	Total elective primary hip replacements, elective hip revisions and proportion of revisions, by year	24
Figure 4	Total elective primary knee replacements, elective knee revisions and proportion of revisions, by year	24
Figure 5	Trend in average length of stay and admissions for elective hip replacements (all methods).....	25
Figure 6	Trend in average length of stay and admissions for elective knee replacements (all methods).....	26
Figure 7	Trend in length of stay and admissions for fractured neck of femur	26
Figure 8	Trends in annual SSI incidence for surgical categories, April 2009 to March 2018.....	37
Figure 9	Patients receiving primary knee replacement following arthroscopy on the same knee less than one year prior to replacement.....	50

Foreword

A huge amount has changed both for the GIRFT programme and for the orthopaedics specialty since we held our first deep dive visits at trusts in late 2012. GIRFT has grown from a pilot in orthopaedics to a national programme of 40 specialties, and orthopaedics has led the way in using data and clinical leadership to make significant improvements across many key metrics.

In those early pilot visits, managers and clinicians were sometimes surprised by their data, or even in denial. This culture has changed. Both managers and clinicians are now taking ownership of their data and how they use it. It is clear that between GIRFT visits, clinicians and trusts are already looking at their data to identify and tackle unwarranted variations.

The data and evidence provided in this report on key metrics is testament to this, showing significant improvements on reducing revision rates, reducing average lengths of stay and releasing significant and recurring financial opportunities. These achievements are the product of the hard work and deep commitment of all those working in orthopaedics, including clinicians, managers and other health professionals. In this report we hope to highlight some of the key initiatives supported by the British Orthopaedic Association, National Joint Registry, NHS bodies and many others also working alongside GIRFT. All of the aforementioned have been extremely supportive of the programme and keen to share their data.

As well as celebrating the specialty's successes, this follow-up report identifies that significant opportunities remain, including in minimum volumes, implant choices and service redesign. Delivering on these further opportunities is both achievable and feasible, as demonstrated in the many case studies set out in the report. We have many more examples of best practice and lessons learned, which we are happy to share with trusts on request.

Back in 2012, we secured a grant of £200,000 to undertake a pilot GIRFT review of orthopaedics. The orthopaedics workstream has supported trusts to deliver improved outcomes and recurrent financial opportunities and savings to the NHS of £696 million over the past five years. Given this return on investment, it is exciting to see that the methodology piloted in our specialty is now the benchmark being rolled out over 40 more specialties.

Our specialty has a lot to celebrate in what we have already achieved in identifying and tackling unwarranted variation, but we know there are still huge opportunities out there. I hope this follow-up report serves to encourage and motivate us to keep improving the quality of treatment and care we offer to our patients in the NHS and ensure that we provide best value.



Professor Tim Briggs CBE

*Chair of the GIRFT programme and Clinical Lead for orthopaedics
National Director of Clinical Improvement NHS England and NHS Improvement
Consultant orthopaedic surgeon at the Royal National Orthopaedic Hospital*

Endorsing statement



British
Orthopaedic
Association

The British Orthopaedic Association (BOA) is delighted and proud to support this follow-up report on orthopaedics from the Getting It Right First Time programme. This initiative originally started as a 'pilot' when Professor Tim Briggs was the president of the BOA, and we are pleased to see how it has gone from strength to strength ever since the first work began in 2012, expanding its remit into over 40 other surgical and medical specialties as a clinically-led activity to improve quality and patient safety, and reduce unwarranted variation. Spinal surgery has its own GIRFT workstream that reported last year, which we particularly supported given the close professional inter-relationship between orthopaedics and spinal surgery.

The very first GIRFT publication in 2015 was a landmark report for the orthopaedic specialty, highlighting areas of excellence and areas for focus and improvement. This follow-up document is particularly welcome as it clearly demonstrates the significant progress made since that time. We commend the efforts of the orthopaedic workforce and multidisciplinary teams that have all contributed to the major improvements described here. I would like particularly to highlight the important progress that has been made in improving outcomes for patients, including reductions in complications, rates of hip revision surgery, length of stay and infection. We at the BOA are continuing to work with the GIRFT programme, our specialist societies and our members to further develop areas of work proposed in this document.

The original report was based on data from England so it is important to note that this document includes work in Wales, Northern Ireland and Scotland, which have also now engaged with the GIRFT programme.



Don McBride

President of the British Orthopaedic Association

Consultant orthopaedic foot and ankle surgeon at the University Hospitals of North Midlands NHS Trust

Executive summary

This follow-up report shows that the orthopaedics specialty has undergone a major cultural shift over the lifetime of the GIRFT programme. In the earliest GIRFT deep dive visits, senior managers and clinicians were often surprised with the data presented, and the initial response was frequently one of disbelief in the data. Once aware that the data was theirs, put out there by the trusts themselves, it allowed a conversation, driven by a respected clinician, about their data and how they compared to other trusts in England. Subsequently, managers and clinicians have taken ownership of their data, and used it to inform actions to improve the quality of their service. Repeat deep dive visits were undertaken to embed the GIRFT methodology and assess the impact of the initial visits.

The orthopaedics specialty has demonstrated improvement against its major metrics at a national level: hip and knee replacement revision rates have fallen and average lengths of stay have been reduced by a third. Orthopaedics has supported trusts to release operational and financial opportunities of £696 million over the past five years and £165.3 million over 2018/19. These opportunities arise from bed days saved, reductions in costly emergency readmissions and low-efficacy operations and cost savings in procurement and litigation. Many of these savings should be recurrent, so trusts will continue to benefit in future years.

This report has been developed with a stringent focus on the core recommendations of the GIRFT orthopaedic workstream, since its inception in 2012. These areas of focus, such as avoiding ineffective surgery, using appropriate implants, driving down length of stay and so on, are the central tenets of this work. This analysis has therefore focused on these areas that GIRFT can reasonably claim as those it has influenced directly and that the impact on the NHS is most likely attributable to the GIRFT programme.

Table 1: GIRFT orthopaedics in numbers

336	Deep dive re-visits to trusts
26,880	GIRFT orthopaedics metrics shared with trusts in deep dive visits
3,064	Actions agreed by trusts
1,028	Actions completed by trusts
£696m	Operational and financial opportunities released by trusts over the course of the programme to date
£165.3m	Operational and financial opportunities released by trusts in the last year, 2018/19

These improvements have been delivered across trusts of different types and different circumstances. Even the most challenged trusts can deliver high quality orthopaedic care, with support from GIRFT, the BOA and other professional bodies, the NHS bodies and vital insights from their National Joint Registry (NJR) and other data. One such example is the case study of Medway NHS Foundation Trust on page 16, and there are many other case studies from different trusts throughout this follow-up report.

One of the strongest testaments to the success of the GIRFT orthopaedics workstream has been the appetite to reproduce this in the devolved administrations, and further afield, as well as in over 40 other specialties. This report looks only at orthopaedics, but it is worth noting that several aspects of the original report including litigation, surgical site infections and procurement, have since grown into separate projects in their own right.

“ GIRFT has provided a wealth of information on variation in practice, process and outcomes across the specialty. We have found that by sharing the data we can shine a spotlight on both underperformance and excellence that enables evidence-based improvements in patient safety, outcomes, efficiency and cost effectiveness. The recent developments in data presentation mean that the impact of interventions can be followed in almost real-time, providing further encouragement to improve the way we provide our services.

Professor Philip Turner, consultant orthopaedic surgeon at Stockport NHS Foundation Trust

Orthopaedic GIRFT in the devolved administrations

Following our report on orthopaedic surgery in England in 2015, GIRFT was invited to conduct similar reviews in Scotland, Wales and Northern Ireland. Many of the findings in the devolved administrations echoed the experience in England and there were many opportunities for sharing learnings across the UK. In Northern Ireland, patients were facing very long waiting times. Part of the problem was that annual spikes in spending on waiting list initiatives did not address the long-term issues of increasing capacity.

In all the devolved administrations, as well as in England, it was very clear from the deep dive visits that clinicians, managers and allied health professionals were working hard to provide high-quality orthopaedics services and improve where necessary, but that they required believable data sets to do this.

Reports on GIRFT from other sources

The GIRFT programme has been open and transparent and welcomed reviews of its methodology. Both the King's Fund and NHS Providers have published rigorous and in-depth reports on the programme, including comments on the orthopaedics pilot. These are informative reading for understanding the programme, but were both completed at an early stage. University College London and the National Institute for Health Research (NIHR) Applied Research Collaboration (ARC) North Thames are currently undertaking a mixed methods evaluation of the GIRFT programme and improvements to NHS orthopaedic care in England. The evaluation protocol is available online and the findings will be published in due course.¹

Minimum volumes

Evidence in the journals has continued to show that operations delivered by surgeons who perform a very low volume of that surgery type are associated with increased lengths of stay, complications and cost, and this evidence has now been incorporated into the guidance published by the professional bodies and specialty or sub-specialty associations. Many trusts are working as part of networks or implementing occasional dual operating, which enable surgeons to deliver sufficient volumes of operations (as well as providing mechanisms for training and professional development). The NJR data shows a significant reduction in low-volume operations in most operation types, but also showed significant opportunity for further improvement, particularly in understanding the number of surgeons performing very small numbers of operations.

Service design: ring-fenced beds

An increasing number of trusts report rigorously enforcing the ring-fencing of beds and, anecdotally, orthopaedic service managers have reported using the GIRFT recommendation to underline the importance of maintaining the ring-fence in their trust. This is despite the increasing pressures on trusts to make more beds available to deal with winter pressures. Surgical site infection rates are influenced by a number of factors, but it is likely that the maintenance of ring-fencing has contributed to the decreasing infection rates in the orthopaedics specialty.

Service design: hot and cold sites

The implementation of a 'hot and cold' site split has proved transformative for several trusts. By separating their 'hot' unplanned emergency work from their 'cold' planned elective work, these trusts have seen reductions in average length of stay, reductions in cancellations of surgery and increased elective activity despite winter pressures. The GIRFT programme supported these hot and cold site splits and is continuing to work with a number of other trusts who are seeking to implement similar changes.

Choice of implant

Usage of the Orthopaedic Data Evaluation Panel (ODEP) ratings has continued to increase, with the vast majority of implants used holding a rating and clear evidence of implants progressing to the new higher A star ratings. The trend has seen the proportion of hip replacements in patients aged 70+ years using either cemented or hybrid fixation rising to 76%, just under the target of 80%. These trends need to be maintained so that this target is met, and there is an opportunity to increase the use of fully cemented hip replacements for this group of patients as the evidence becomes even more compelling.

Knee arthroscopy

The GIRFT orthopaedics report cited clear findings in literature that knee arthroscopy was not a clinically effective intervention for many patients with knee osteoarthritis. Since then, the proportion of patients with knee osteoarthritis receiving primary knee replacement following arthroscopy of the same knee within a year has continued to fall, from an average of 3.13% in 2012/13 to 0.39% in 2017/18. It is thought that while these rates have fallen in the NHS, there might continue to be unwarranted variation in independent providers and the GIRFT programme will seek to reduce this in its work with AQPs.

¹ <https://bmjhealthservres.biomedcentral.com/articles/10.1186/s12913-017-2012-y>

Stocktake of rehabilitation services

The original GIRFT report set out detailed recommendations on the provision of physiotherapy services. On revisits, we have seen evidence that trusts have understood that they need to invest in physiotherapy in order to achieve savings and improve outcomes and quality of care for patients.

Training

The GIRFT report highlighted concerns about the numbers of senior and experienced consultants approaching age of retirement and, combined with the growing demand and pressure on surgeons, there was a risk of a capacity gap increasing if the numbers and experience of trainees could not be increased sufficiently. Case studies in this report show how trusts are implementing dual operating and investing in staffing.

Litigation

When the original GIRFT report was written, trauma and orthopaedics had the highest claims volume of any specialty and the cost of litigation was continuing to rise. That trend changed in 2014/15, and since then there has been an annual fall in the volume of claims and in most years, a fall in the total cost of claims. Orthopaedics is no longer the most litigated specialty and represents total costs of 4% as against 10% before the GIRFT visits began. In addition to the GIRFT litigation workstream and NHS Resolution providing data to the trusts on their claims, they have also worked alongside the professional societies to develop guidance and advice on documentation.

Surgical site infection and theatre environment

The GIRFT report's findings on unwarranted variation in surgical site infection (SSI) rates has initiated a wider project to look into infection rates. A programme wide SSI survey, including orthopaedics and other specialties, has been established. This complements the SSI surveillance work of Public Health England (PHE), which has found that there has been a gradual decrease in inpatient and readmission SSI incidence. Most of this decrease is accounted for by reductions in inpatient SSI. As participation in the SSI survey increases, trusts will have more detailed data in future to drive improvement. Even in the face of this incomplete data, evidence suggests a reduction in SSIs by 160 cases with a saving of £3.5 million associated with this.

Procurement and medical device surveillance

The safety of orthopaedic devices has been under greater scrutiny in recent years and the specialty has responded with increased clinical expert review of device safety, outcomes and innovation. This has taken the form of the Orthopaedic Data Evaluation Panel (ODEP) ratings (described under implant choice) and the Beyond Compliance initiative. In addition, GIRFT has supported the establishment of National Clinical Technology Advisory Panels in key specialties.

GIRFT continues to support transparency of pricing, costs and opportunities through tools such as the recently launched Spend Comparison Service. This has already delivered annual and recurring cost savings estimated between £15.6million to £18.1million for some of the most common implants, with many trusts reporting additional cost savings at the local level.

GIRFT will continue to support embedding clinical leadership into device safety and procurement processes, including an imminent breakthrough of linking pricing data to clinical outcomes data from the NJR. Collaboration with the NHS Spend Comparison Service, NHS Digital, the NJR, ODEP and other key stakeholders will continue to deliver pricing and cost transparency.

Average lengths of stay

Average lengths of stay have fallen for elective hip replacements by 19%, elective knee replacements by 17.8% and for fractured neck of femur by 5.6%, since 2013/14. This means that in these elective procedures, orthopaedics is now using almost a fifth less bed resource than in 2013/14. These reductions in length of stay were achieved despite increases or fluctuations in the volume of activity and show that patients are making better and quicker recoveries from operations, as well as getting back home sooner.

“

The Trauma and Orthopaedic Care Group here at Walsall has been able to make significant service improvements with the support of our personalised GIRFT report and the support the team has provided. Using the recommendations as a foundation, we have been able to successfully redesign our elective arthroplasty pathway, which has not only led to winning local service improvements awards, but benefited staff morale. Our length of stay has reduced to below the national average, which has been maintained since implementation. We are now able to offer an average of 144 more joint procedures than before implementation which, in turn, has reduced waiting times by around three months for surgery and improved our financial position.

Lucy Beech, Trauma & Orthopaedic Care Group support manager at Walsall Healthcare NHS Trust

”

Introduction

Evaluation, based on frontline observation and data, is an ongoing and continuous part of all GIRFT workstreams. This approach is integral to the programme, by nature of the GIRFT methodology. This applies not only to our clinically-led deep dives and national reports, but also to our ongoing work on delivering improvement and implementing the recommendations of our national reports.

The clinicians, hospital managers, NHS bodies and professional societies we work with will be well aware that the process of evaluation and improvement set in train by a GIRFT workstream is continuous. However, we recognise that because much of this work involves complex and confidential data and tools, it is not visible or accessible to the wider public and stakeholders.

This follow-up report provides a concise overview of what has happened in the orthopaedics specialty since we published our first GIRFT report in 2015. This follow-up report contains a chapter on each of the key themes in the original report. Within each of these themes, we have set out five headings to recap the contents of the original report and provide an update on developments since. The purpose of these sections is set out in the table below.

Table 2: Follow-up report headings explained

Heading	Purpose of section
1. The findings of the original report	To provide a concise recap of the key findings of the original report and deep dive visits.
2. The report's recommendations	To list the recommendations made in the original report.
3. Developments since the original report	To describe the clinical practice and policy developments that have taken place since the original report, including the progress reported by trusts in implementing GIRFT orthopaedics recommendations. This includes both GIRFT led developments as well as work undertaken by trusts or other key partners. Changes to the pressures and context of orthopaedics services, for example the impact of winter pressures, are also noted.
4. The change seen	To provide, where possible, an update on the data that was set out in the original report, including national data and data on outcomes. Case studies relating to the theme are also included.
5. Next steps	To identify and highlight any further steps being taken or to be taken in future.

The information for this follow-up report has come from a range of sources:

- Professor Briggs' observations from his deep dive visits to trusts
- The observations of GIRFT project managers and analysts
- Data and analysis from the NJR and ODEP
- Case studies and reports on implementation in trusts from the GIRFT regional teams

Scope

The scope of this follow-up to the first GIRFT orthopaedic national report will be strictly limited to the direct impact of the orthopaedic workstream within its specialty of orthopaedics, and not the full extent of its impact on the NHS.

The GIRFT orthopaedics workstream was the pilot for the GIRFT methodology and it was on the basis of the success of the GIRFT workstream that the programme was extended to cover over 40 specialties. To appreciate the full impact of the orthopaedics workstream would require an evaluation not only of its impact within the specialty of orthopaedics, but across all the specialties and indeed the entire health system.

This evaluation report is looking specifically at the orthopaedics workstream, the original report's findings in its specialty and the implementation work that has followed.

“

There are few national programmes that have had the positive impact on services and staff which characterises the GIRFT programme. On arriving in Gloucestershire three years ago, we quickly found ourselves in financial special measures and needing to do things differently – cue Professor Tim Briggs and team. Tim and his team provided support to the trust to tackle a longstanding and contentious issue in the guise of orthopaedic service configuration; the service was full of great people but was going backwards and losing activity to a growing independent sector as activity reduced and waiting times grew. Thanks to the support of GIRFT we have a new service model, elective productivity has soared and our latest consultant vacancy attracted more applicants than we can ever remember. The GIRFT journey continues, with many other specialties now benefitting from the unique combination of practising clinicians leading the visits, data provided by the trust and a truly multi-disciplinary model.

Deborah Lee, Chief Executive of Gloucestershire Hospitals NHS Foundation Trust

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Supporting trusts to implement GIRFT recommendations

GIRFT has in place a comprehensive programme to help implement the recommendations highlighted in the national report on orthopaedics, including support to individual providers to implement these recommendations locally.

Following their GIRFT deep dives and revisits, trusts have developed their own specific implementation plans. These implementation plans are based on the national report's recommendations, their trust data pack and their conversations with the clinical lead.

The programme has established GIRFT regional teams across England, which act as a focus of GIRFT support for England's provider trusts, STPs and commissioners in delivering their respective GIRFT implementation plans. Through regular visits to each trust, they provide hands-on support and encouragement for clinical and management staff to deliver their GIRFT implementation plans as well as being a route for monitoring progress. These teams also help to disseminate best practice across the country, matching up trusts who might benefit from collaborating in selected areas of clinical practice.

The GIRFT regional teams have provided information, data and analysis from trusts implementation plans as well as their conversations and observations, to provide evidence for this evaluation report.

“

Over five years through GIRFT, the trust has:

- Reduced length of stay by over 50% for elective hip (to 2.6 days), and elective knee (to 2.3 days), and by over 35% for revision Hip (to 6.8 days), and revision knee (to 5.0 days).
- Increased use of prosthesis type for cemented hip replacements for patients aged 70+ to 80%, and cemented or hybrid to 98%.
- University Hospitals Plymouth (UHP) has stopped low-volume procedures, reduced loan kit spend by 50%, and further reduced our litigation cost per activity by a quartile, below national average.
- From November 2018, UHP entered into an Any Qualified Provider (AQP) hot/cold pilot to mitigate winter escalation pressures, protecting delivery of elective activity.

Dr Phil Hughes, Medical Director of University Hospitals Plymouth NHS Trust

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Strong attendance and awareness of data on deep dive revisits

Following the publication of the GIRFT national report on orthopaedics, Professor Tim Briggs has revisited all trusts. For these revisits, the GIRFT data set was 'refreshed' so that clinicians were being provided with the most up-to-date data possible, which would reflect any early changes they had delivered since their first visit. These revisits provided an opportunity for clinicians and managers to reflect on how they had used their original visit, the national report and their work with the GIRFT regional teams. Professor Briggs' findings from these revisits have also informed this evaluation report.

“

The GIRFT programme embodies all the qualities that the Princess Elizabeth Orthopaedic Centre in Exeter has aspired to over its 90 year history as a specialist orthopaedic unit - excellence in patient care, a focus on sub-specialty working, responsible research-driven innovation coupled with strong clinical leadership and a desire to improve outcomes in orthopaedics in a wider sense. A lot of programmes have concentrated their attention on negative outliers, however the GIRFT process, by the sharing of best practice, encourages units to strive to become positive outliers which is a much more supportive and, in my view, helpful approach.

***Professor Andrew Toms, consultant trauma and orthopaedic surgeon at Royal Devon & Exeter NHS Foundation Trust.
Honorary Clinical Professor and NIHR South West orthopaedic lead.***

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Attendance at the orthopaedic deep dive revisits has been very strong, with attendance from surgeons, Allied Health Professionals and the trust senior leadership including Medical Directors, Chief Executives and Chief Operating Officers. In the first pilot GIRFT visits, clinicians and managers were sometimes surprised at their own data and seeing it for the first time. Now trusts now looking at their data regularly ahead of and between their deep dive visits. There is a far greater sense of 'ownership of data' from clinicians, managers and other NHS staff, with far less denial of what the data can show.

This increased use of the NHS's own data and tools has had an impact beyond GIRFT deep dive visits, and marks a cultural shift in the NHS that should be beneficial to other quality improvement initiatives as well as 'business as usual' work in trusts to improve patient outcomes.

Compared to the very first pilot visits in 2012, there has been a vastly increased appetite and willingness to change. One factor in this may have been the appointment of Professor Briggs as National Director of Clinical Improvement for the NHS, alongside his role as GIRFT Programme Chair and clinical lead for orthopaedics. This national role has meant that GIRFT is considered a conduit for experience and expertise from the frontline to be fed into the national NHS bodies.

In addition to the beneficial national recognition resulting from Professor Briggs' joint role, the closer working of GIRFT and NHS England and NHS Improvement, both nationally and regionally, opens up new opportunities for GIRFT insights to feed into the national NHS bodies.

Independent providers

The introduction of any Any Qualified Provider (AQP) in 2012 means that when a patient is referred for a particular service, they will be given a choice of 'qualified providers' who meet NHS service quality standards. One of the stated principles of AQP is that competition should be on quality and not on price.

The GIRFT programme has been invited by some AQPs to provide similar peer review as in the NHS providers, which can help improve quality and value in AQPs. It has been encouraging to see this work welcomed in the independent sector and this augurs well for other specialties.

“

GIRFT and Nuffield Health have aligned visions as we aim to reduce unwarranted clinical variations and deliver best outcomes for the patients that we are privileged to look after.

Mahmood Shafi, Medical Director and Responsible Officer, Nuffield Health

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CASE STUDY 1

Nuffield Health's experience of working with GIRFT

“

Nuffield Health has a stated purpose to 'build a healthier nation' and we take clinical quality seriously. Our culture of continual improvement has led to 94% of our hospitals being rated as good or outstanding by national regulators, and we recognise the importance of peer review to assure the quality of service we offer NHS patients.

We were therefore delighted at the opportunity for GIRFT to review our orthopaedic and spinal services. Collaboration with GIRFT's peer review process was an opportunity for our hospitals to reduce and tackle unwarranted clinical variation and strive for best achievable outcomes. We anticipated that hospitals providing exemplary practice would be identified, allowing the sharing of best practice with other hospitals in a continual spiral of improvement. Nuffield Health shares GIRFT's culture of continual improvement and transparency and we look forward to continuing this important partnership to deliver best value care to our patients.

Mahmood Shafi, MB BCh, MD, DA, FRCOG
Medical Director and Responsible Officer, Nuffield Health

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Patterns by trust types and regions

The improvements of orthopaedics outcomes and quality of care for patients have been seen across all types and sizes of trusts, from large teaching hospitals and specialist hospitals to smaller district general hospitals. In some teaching hospitals, certain practices could be strongly ingrained, whereas smaller district general hospitals were more likely to be proactively seeking support to change. Overall, there was little difference between trust types.

Improvements have also been seen across all the regions, with no significant differences noticed across geographies. It has been particularly encouraging that even the most challenged trusts have delivered significant improvements, using support from the GIRFT programme.

CASE STUDY 2

Delivering improvements in orthopaedics at a challenged trust

Medway NHS Foundation Trust has delivered significant improvements in its services, despite continuing to tackle major challenges overall as a trust. The trust was placed in special measures from July 2013 until March 2017 and in 2018 the CQC rating was elevated to “requires improvement”.

Within the orthopaedic service, the trust faced a range of problems including:

- Surgeons performing low volumes of work and complex cases
- Implant choice not based on evidence, as highlighted in the GIRFT national report on orthopaedic surgery
- Inadequate data recording into the NJR and capture of patient report outcome measures
- Litigation costs higher than the England average
- Limited achievement of the Best Practice Tariff (BPT) in orthopaedic work

These problems were evident in the initial GIRFT orthopaedics deep dive visit in May 2016, and the two subsequent revisits. Following the second revisit in February 2019, the orthopaedic team (clinicians and managers) accepted that major changes in their service were necessary. GIRFT revisits would be scheduled every six to nine months to monitor progress.

Since then, the trust has seen significant improvements across its orthopaedic care, including:

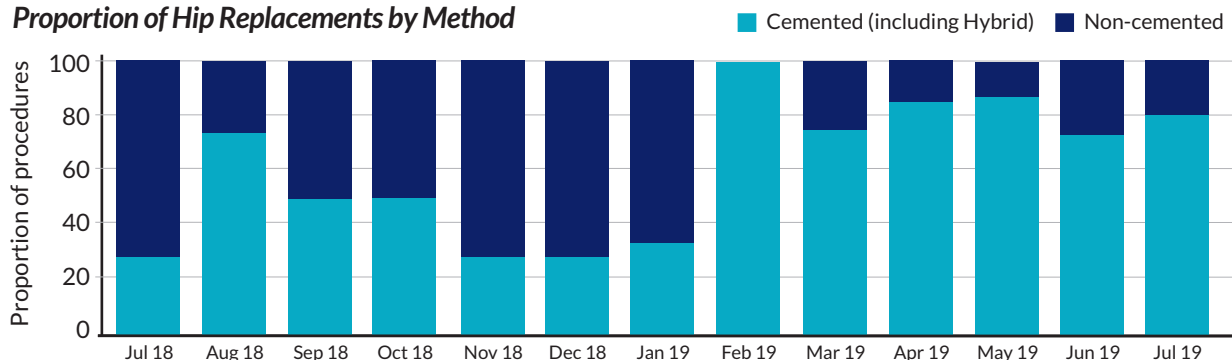
Minimum volumes

- Agreement has been reached between surgeons to allocate work on revision hips and knees to ensure minimum volumes. These numbers will be monitored and, if necessary in future, complex cases will be referred to another provider.
- The trust is part of a Complex Case & Revision Network, recently established through the STP with the support of all providers. The network will meet to discuss 20 – 30 complex cases and all revisions as a system.
- The STP will support the Kent trusts to provide opportunities to improve access to developed sub-specialist services, more effective use of resources and procurement, balance workloads across the network’s facilities and maintain and improve skill sets and knowledge.

Implant choice

The trust has seen a significant increase in use of cemented fixation for total hip replacements for patients 70+.

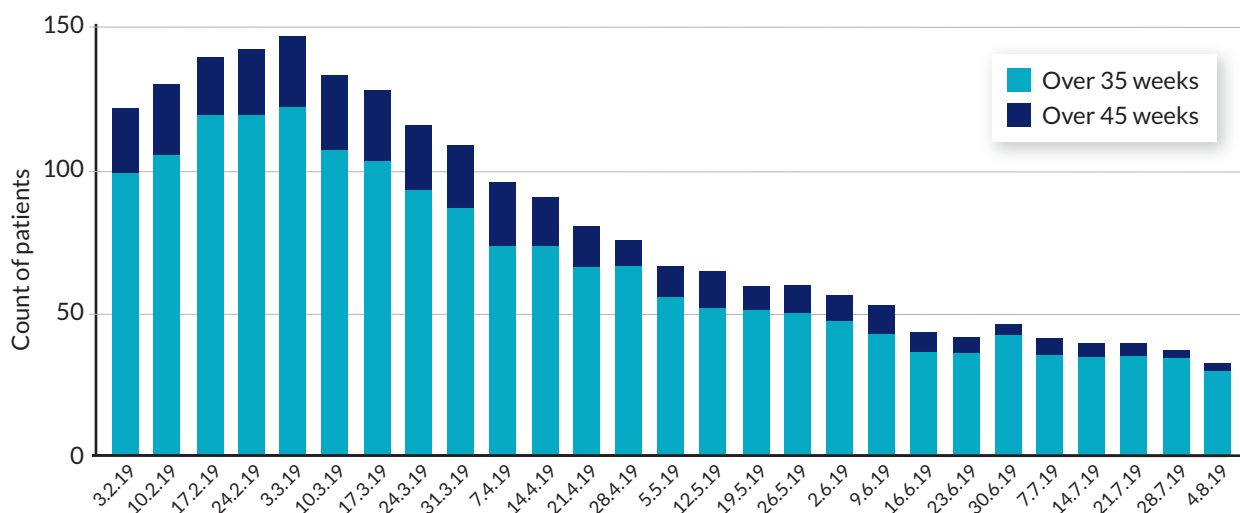
Proportion of Hip Replacements by Method



Service design and increased theatre capacity

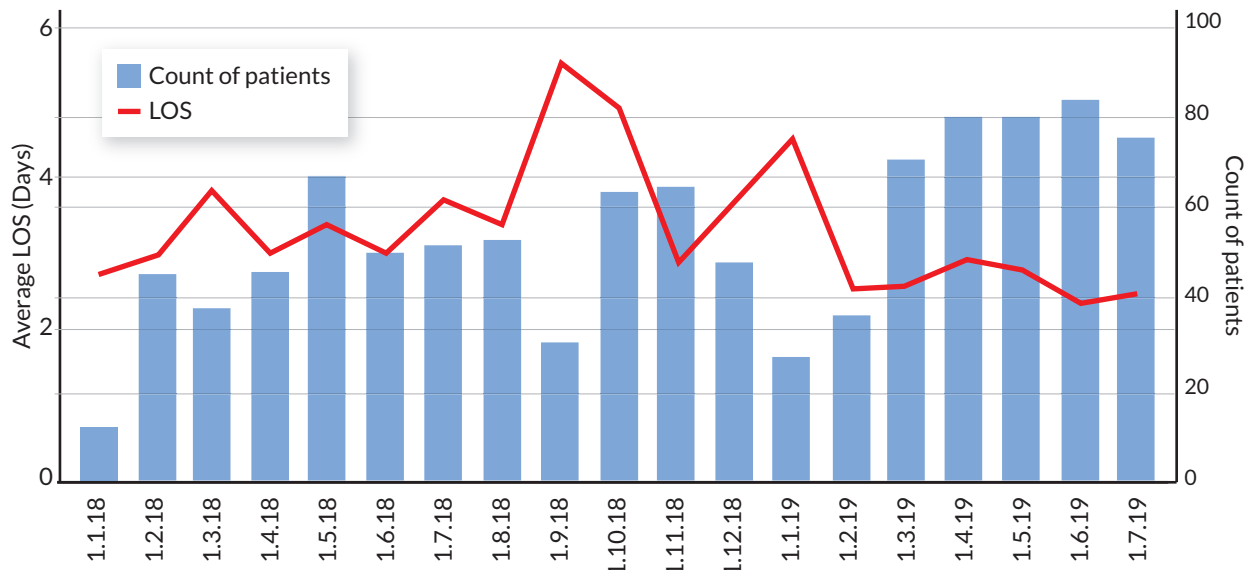
- By maintaining a dedicated orthopaedic elective ward, the trust has seen a reduced length of stay and therefore increased throughput of patients
- The introduction of weekend operating and increase in procedures per list, has resulted in an improving performance against referral to treatment time standards and a reduction in the backlog of patients waiting

Incomplete RTT PTL History



Improved physiotherapy and rehabilitation

- The introduction (pilot) of a 7-day physiotherapy service, has led to a reduction in the average length of stay (for both trauma and elective cases) from 8.21 days to 6.69 days
- Other changes include that the physiotherapy team is now seeing patients on day 0 and that a member of the therapy team is present at multidisciplinary meetings. An occupational therapist is now attending joint school for all total hip replacements, working with patients to set out hip precautions, order equipment and adjustments for home and completing pre-assessment home visits and discussing expectations
- The trust has established a Surgical, Medical Acute Response Team (SMART), which strives to continue high standards of nursing and physiotherapy care in the patient's own home following surgery. The team links into recovery to start rehabilitation and discharge process as soon as possible.
- Following a visit to South Warwickshire NHS Foundation Trust in May, the trust has also initiated an Enhanced Recovery Pathway and incorporated suggestions from South Warwickshire into its process.
- An MDT approach to the management of fractured neck of femur patients has resulted in significant improvements in length of stay and increase in best practice tariff reporting.
- An orthogeriatric (frailty) team provides regular rounds and a referral service, supporting fractured neck of femur pathway patients and checking their investigations and results. This enables a good flow from the ward or emergency department to the theatre.
- Improvements in theatre utilisation and efficiency include a dedicated orthopaedic team leader, additional recruitment of staff and rostering, team training and revamped daily huddles.



Procurement

- Working alongside another trust, Medway has secured a joint competitive prosthetic contract, significantly reducing its prices against the national average in the Purchase Price Index and Benchmark tool (PPIB).

Construct	PFC Sigma 3 part cemented knee	Cemented metal-on-poly hip	Hybrid metal-on-poly hip	Uncemented metal-on-poly hip	Uncemented ceramic-on-poly hip	Uncemented ceramic-on-ceramic hip
Medway NHS Foundation Trust Price	£770.00	£455.75	£800.42	£1,087.56	£1,268.58	£1,444.48
PPIB Median Price	£919.55	£490.69	£935.85	£1,282.94	£1,484.91	£1,685.99

Other improvements

- The Hospital Standardised Mortality Ratio for fractured neck of femur has improved from 126 to 79.9 for the most recent 12 months and the crude mortality rate has almost halved, from 9.7 to 5.3.
- A standardised anaesthetic pathway for primary hip and knee arthroplasty has now been agreed amongst the anaesthetic consultants, incorporating evidence-based best practice.

Training

- The trust has agreed to a two-year junior doctor rotation across the STP, in order to improve recruitment and retention.

GIRFT working with the devolved administrations

Scotland

At the request of the orthopaedic community in Scotland, expressed via the Scottish Committee for Orthopaedics and Trauma, Professor Tim Briggs and the GIRFT team were commissioned to replicate and expand upon the GIRFT methodology in Scotland.

Peer review visits were undertaken at each of the 12 Health Boards in Scotland and the NHS Golden Jubilee National Hospital. Colin Howie, consultant orthopaedic surgeon at NHS Lothian and past president of the British Orthopaedic Association (BOA), led the visits alongside Professor Tim Briggs. A clinical and managerial peer from other hospitals around Scotland accompanied them. In advance of their visit, each health board was encouraged to provide an update of its Access QI programme progress so far, and a copy of its on-going action plan for embedding further change.

The peer review visits were informed by the new trauma and orthopaedic dashboard and a quality report containing the GIRFT indicators. The dashboard contains a wide range of clinical quality, pathway process, patient outcome and capacity utilisation indicators and enables users to access regularly updated data for their own hospital/Board and gauge their quartile position compared to others.

The peer review visits were well attended by clinicians and managers, with the Chief Executive, Medical Director, AHP Director, Quality Drive Executive Lead, other senior managers, Orthopaedic Clinical Director and the multi-disciplinary improvement team at each hospital all invited to take part. Attendees were encouraged to review the data for their hospital(s) with colleagues so that they could prepare for discussion on areas requiring action. The sessions were constructive, with multi-disciplinary colleagues together discussing, challenging and using evidence to address issues. Messages were heard at a senior level.

Following its visit, each health board was sent a feedback report with recommendations. Each team was encouraged to enhance its action plan to take account of the recommendations and focus attention on priority areas of clinical quality and capacity utilisation for greatest gain. There is evidence of good practice across all sites in Scotland and areas where services in Scotland excel. The action plans capture these examples and, alongside the dashboards, generate momentum for their subsequent delivery.

Wales

Professor Tim Briggs and the GIRFT programme were invited by Dr Ruth Hussey, Chief Medical Officer for Wales, to undertake a review of the quality and format of orthopaedic surgical services across Wales in 2014.

This review took the form of peer-to-peer reviews of orthopaedic care across the six health boards in Wales, covering 21 hospitals, during November and December 2014. These peer-to-peer reviews included face-to-face meetings with 114 surgeons and 45 senior managers, to work through orthopaedic care and outcome datasets. These datasets covered over 27,454 episodes of care, using metrics from the Patient Episode Database for Wales, the NJR, the NHS Wales Shared Services Partnership (NWSSP) Legal and Risk Services and assorted clinical dashboards.

The review focused on the opportunities for quality improvement and increasing effectiveness, but noted that the evidence collected demonstrated that overall, dedicated staff were providing high quality orthopaedics care to patients in Wales.

The review identified that balancing capacity and demand across Wales was a major challenge and that long waiting times were one of the most pressing areas of concern for managers and clinicians.

The review expressed concern about evidence of some surgeons undertaking low annual volumes of certain procedures, associated with less favourable outcomes and increased costs. The establishment of networks for complex orthopaedic procedures was recommended, alongside formal guidance to the profession.

There were also cases of failure to follow the evidence of the NJR and other registries in decision making around implant choice, especially in patients aged over 68 years. The review recommends the reduction of widespread variation in practice across Wales, in particular in the use of cemented and uncemented fixation in implants.

Surgeons and managers in some hospitals reported the loss of ring-fenced beds, laminar flow theatres and experienced orthopaedic theatre teams, which had a detrimental effect on morale and outcomes. The review recommended an ideal environment for elective orthopaedics, which would involve ring-fenced beds, laminar flow theatres, improved theatre discipline and appropriate staffing, in order to minimise infection risk.

In common with the rest of the UK, there was a need for greater availability of orthogeriatric expertise for fractured neck of femur services. The review noted that work was already underway to tackle variation in selection and cost of implants in Wales.

Northern Ireland

The Northern Ireland Department of Health, Social Services and Public Safety (now known as the Northern Ireland Department of Health) invited the GIRFT programme to undertake a review of the quality and format of orthopaedic surgical services across Northern Ireland in 2016.

This review included peer-to-peer reviews of orthopaedic care across four health and social care trusts in April 2016 as well as a report on the Northern Ireland project overall.

The reviews with the four health and social care trusts were conducted in face-to-face meetings with local senior management and orthopaedic teams. These meetings worked through datasets on clinical outcomes, processes, revisions, patient experience, patient pathways, network arrangements, financial impacts, waiting times and other data on orthopaedic care and outcomes. Significant unwarranted variation was identified across several parts of the orthopaedic pathway, which could not be explained by differences in obvious drivers in demand such as age or incidence of osteoarthritis.

The review found that Northern Ireland had 66 orthopaedic consultants, a shortfall of 24 against the 93 expected according to the then recommended levels. This shortfall was for the current population, and didn't factor in likely retirement levels and growing future demand. This constraint, alongside a requirement to invest in beds, theatre and step-down facilities, was thought to be a major factor in the very long waiting lists experienced by Northern Irish patients for orthopaedic surgery.

The review found that the current pattern of investments in waiting list initiatives within the private sector towards year end was expensive and failed to address the underlying reality of insufficient capacity. The review suggested that a long-term plan to increase capacity was needed, which would take a view on training more orthopaedic surgeons and moving the spending cycle away from waiting list initiatives into investing in long-term sustainable capacity within the NHS.

Overall, the report found that orthopaedic care was delivered to a high standard in Northern Ireland and staff were dedicated and well trained. While the quality and evidence challenge was met, the resource allocation challenge appeared to be the cause of significant problems in delivering access to care.

Reflections on GIRFT from other sources

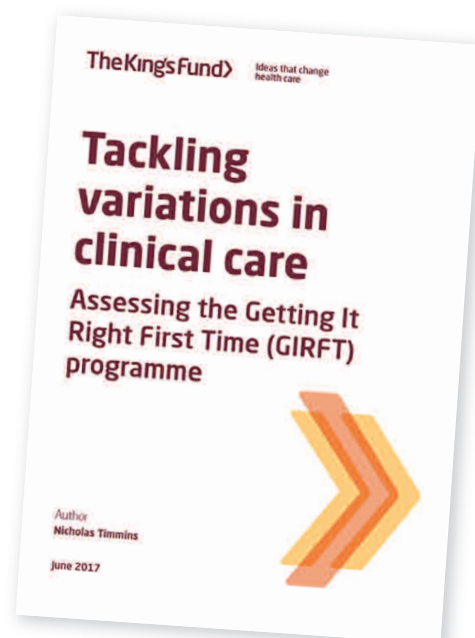
1. The King's Fund

The King's Fund, an independent think tank working to improve health and care in England, published an independent report on GIRFT, with a particular focus on the orthopaedics workstream alongside vascular and general surgery.

Available online at:

<https://www.kingsfund.org.uk/publications/tackling-variations-clinical-care>

The evidence to date suggests that the GIRFT programme is achieving what it has set out to achieve – higher-quality care in hospitals at lower cost – with the engagement of both clinicians and management in the process. However, buy-in varied, and sustained success will depend on engagement of both clinicians and managers and commitment to taking action.'



2. NHS Providers

NHS Providers published a report on early views on GIRFT from the provider sector. The report is available online at: <https://nhsproviders.org/the-getting-it-right-first-time-programme>

Available online at:

<https://www.kingsfund.org.uk/publications/tackling-variations-clinical-care>

'NHS trusts support the Getting It Right First Time (GIRFT) programme and, overall, their experiences and early engagement with the central and regional teams have been positive. Trusts value the GIRFT programme for its clear emphasis on quality improvement, clinical engagement and better outcomes for patients. An open and constructive dialogue will be an important cultural determinant of the programme's credibility with clinicians. Trusts welcome that the GIRFT programme is a data driven collaboration between trusts and the national level. Clinical engagement is most effective when data and analysis have been presented as the beginning of a conversation with clinicians, rather than as the 'final word' on performance.'



Key outcome data

1. Significant reductions in the rate of revisions for total hip replacements and total knee replacements

National data on the cumulative revision percentage for total hip replacements and total knee replacements, from 2003 to 2018, shows that revision rates decreased every year since 2012 when reviewed at 1 year, 3 years, 5 years and 7 years.

These data, which show a major success, reflect the concerted and sustained effort of the orthopaedics specialty to improve safety, quality and outcomes. The factors in this success are complex and multi-factorial, but will include:

Factor in success	Further detail
The clear commitment from the orthopaedic profession to providing world-class treatment and care and continually improving NHS orthopaedic services	Evidence throughout report in case studies
Continual work on guidance, standards and developing the specialty by professional bodies such as the BOA, the sub-specialty societies and the Royal College of Surgeons	See sub-headings 'Developments since the original report'
The availability of data at surgeon, unit and trust level, thanks to the National Joint Registry and other data sources used in GIRFT deep-dive data packs for trusts. This data has equipped clinicians and managers to make informed decisions to improve the quality of care	The same data has been used throughout report in tables and figures
The improvement in the quality of implants used, thanks to the ODEP rating system and technological advances from industry, and an evidence-based choice of cemented or uncemented implant types	See '4. Choice of implant' on page 42
The significant reduction in low-volume operating in the specialty	See '1. Minimum volumes' on page 28
The impact of trusts rigorously maintaining the ring-fencing of beds, a vital step to reducing surgical site infections	See '2. Service design: ring-fenced beds' on page 35
Building the specialties' understanding of surgical site infections, through PHE's mandatory surveillance and the complementary GIRFT Surgical Site Infection audit	See '9. Surgical site infection and theatre environment' on page 60
The work done by clinicians, clinical support staff and managers to reduce surgical site infections and improve the theatre environment	See '9. Surgical site infection and theatre environment' on page 60

Figure 1: Kaplan-Meier estimates of cumulative revisions by year, in primary hip replacements plotted by year of primary

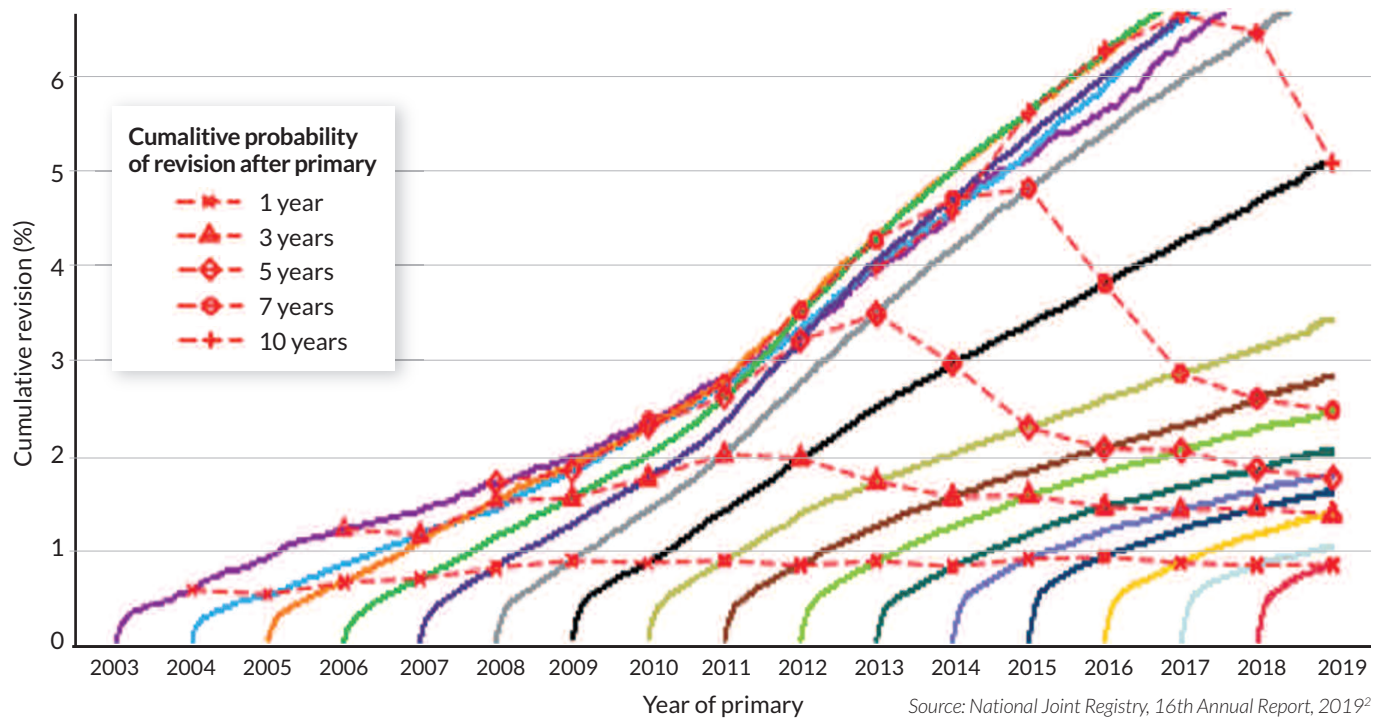
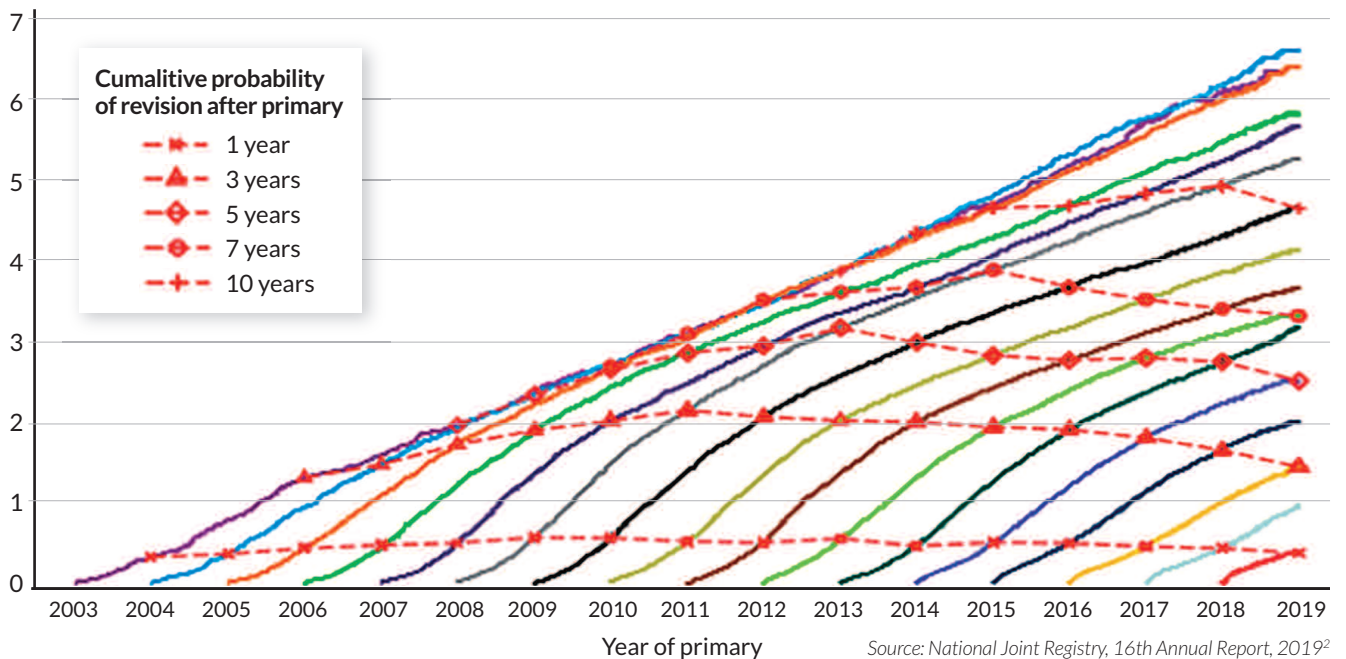


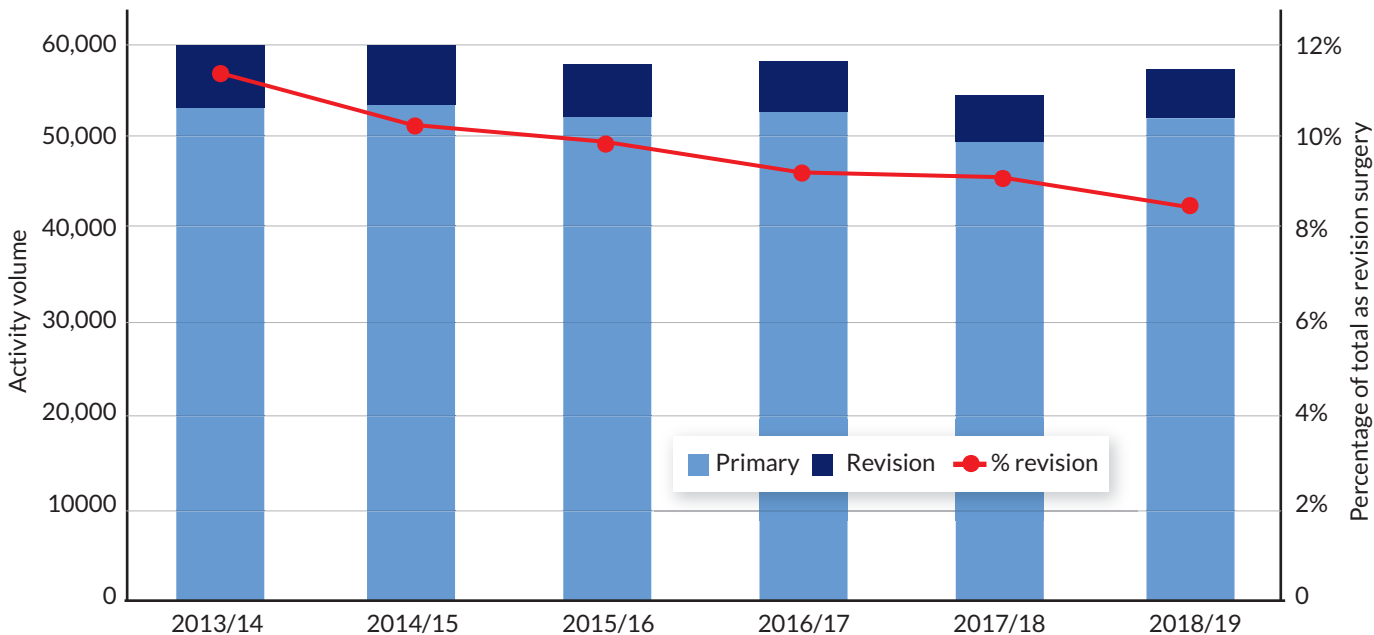
Figure 2: Kaplan-Meier estimates of cumulative revision by year, in primary knee replacements plotted by year of primary



The NJR observes that early increases up to 2008 might be partly the result of under-reporting in the earlier years of the registry and, for hip revisions, the usage of metal-on-metal bearings. However it is also noted that a similar pattern of falling revisions from 2008 is observed in knee revisions, suggesting improved outcomes overall as a result of clinical improvements and adoption of evidence-based practice.

² <https://reports.njrcentre.org.uk/Portals/0/PDFdownloads/NJR%2016th%20Annual%20Report%202019.pdf>

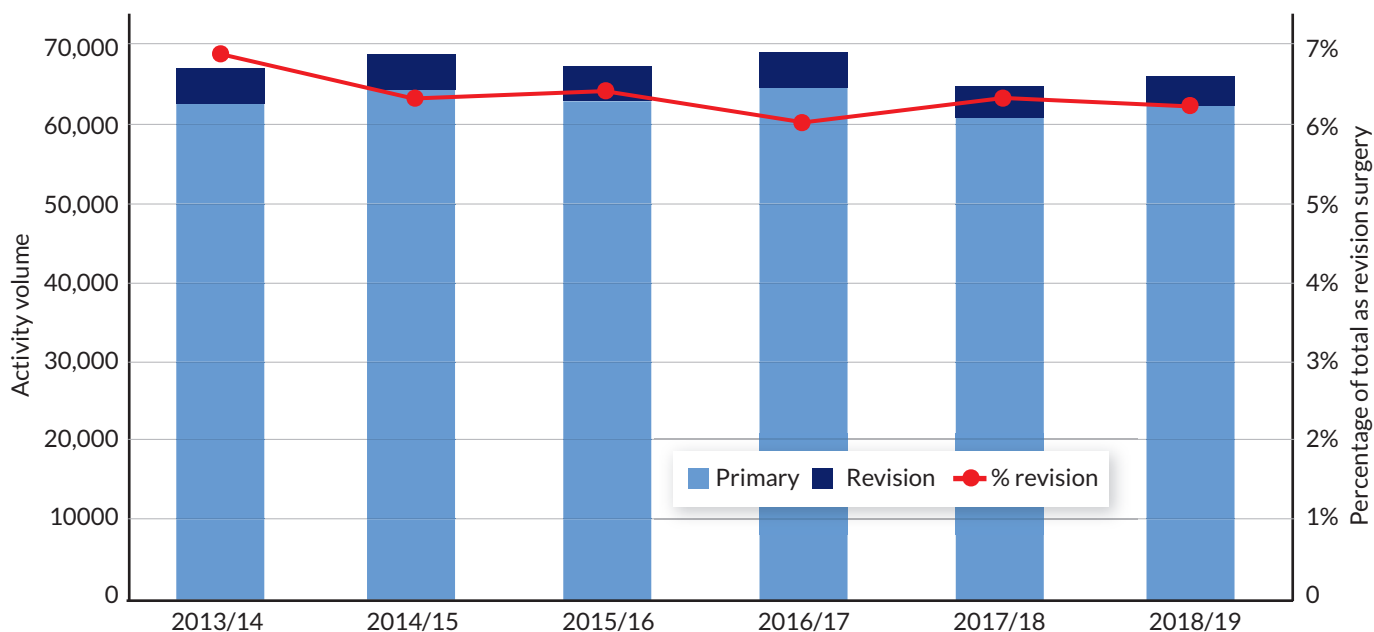
Figure 3: Total elective primary hip replacements, elective hip revisions and proportion of revisions, by year



Source: NHS Digital³

The total count of primary elective hip replacements undertaken nationally between the financial year 2013/14 and 2018/19 has fluctuated slightly but remained at similar levels (52,326 procedures in 2013/14 compared with 52,739 in 2018/19). On the other hand, revision hip replacements have steadily fallen over time, with year-on-year falls in both the number of procedures and the proportion of the total this comprises (6,839 in 2013/14 to 4,946 in 2018/19). This points towards a substantial improvement in patient outcome that is likely attributable both to improvements in care, and to increased use of best-practice prostheses.

Figure 4: Total elective primary knee replacements, elective knee revisions and proportion of revisions, by year



Source: NHS Digital³

The total count of primary knee replacements undertaken nationally between the financial year 2013/14 and 2018/19 has fluctuated but remained at similar levels (63,387 procedures in 2013/14 compared with 62,063 in 2018/19). Revision knee replacements have fallen over the same period (4,639 in 2013/14 to 4,177 in 2018/19). While not as pronounced as the comparable changes in hip replacements, this improvement is again likely attributable both to improvements in care, and to increased use of best-practice prostheses.

³ Figures calculated using procedures and discharge dates from HES data. Only elective and day case points of delivery considered. Data for all NHS funded patients across NHS providers. A year is defined as a financial year, lasting from 1 April to 31 March.

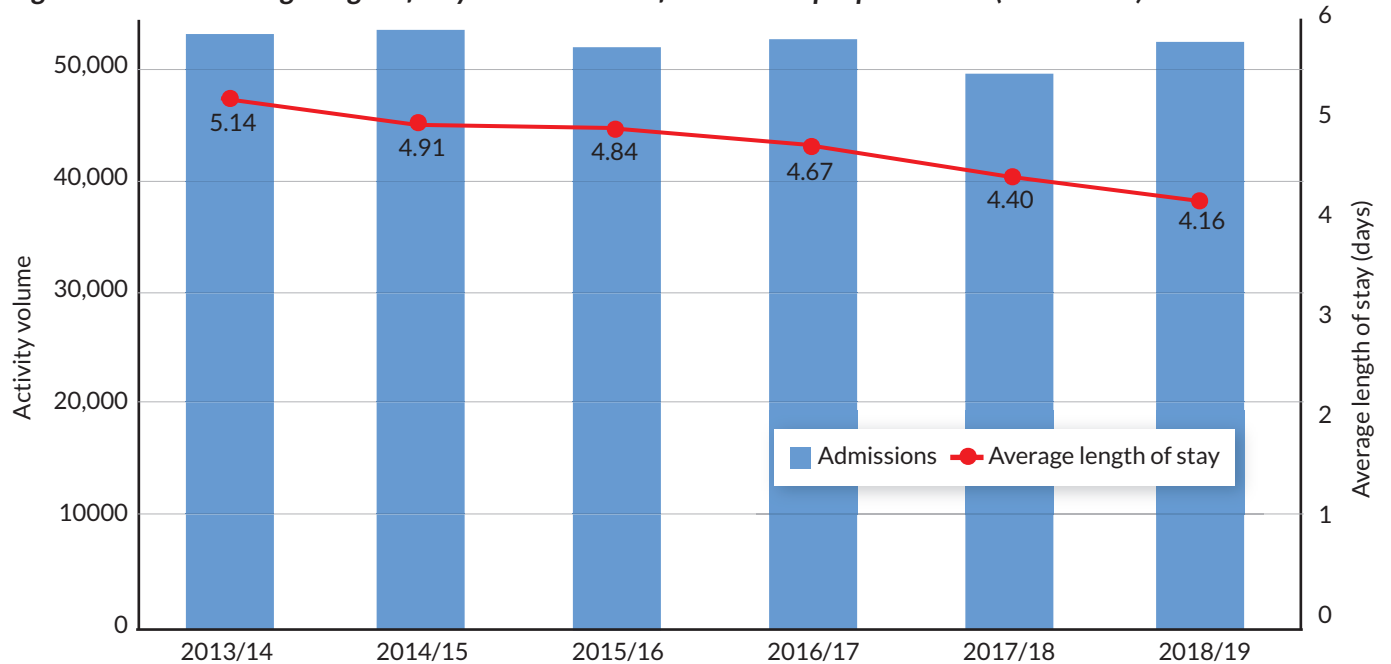
2. Average length of stay reduced by a fifth

The national data shows that the average length of stay for patients having total hip replacements or total knee replacements have been reduced substantially between 2013/14 and 2018/19, meaning that elective orthopaedic procedures are using about a fifth less bed resource now than in 2014. This demonstrates an important success for the orthopaedics specialty, showing that patients are making better and quicker recoveries from operations, as well as getting back home sooner.

The factors in this success are complex and multi-factorial, but will include:

Factor in success	Further detail
The commitment of clinicians, physiotherapists and other health professionals to providing world-class rehabilitation and recovery for patients and the development of enhanced recovery models by musculoskeletal units and services	See '6. Stocktake of rehabilitation services' on page 51
Significant work by the Chartered Society of Physiotherapists (CSP) to develop training, guidance and standards to improve the rehabilitation for orthopaedic patients	See '6. Stocktake of rehabilitation services' on page 51
The significant reduction in low-volume operating achieved by surgical teams and the specialty	See '1. Minimum volumes' on page 28
An increased understanding from trusts that investing in physiotherapy will lead to savings in reduced length of stay	See cases studies, starting from page 51

Figure 5: Trend in average length of stay and admissions for elective hip replacements (all methods)

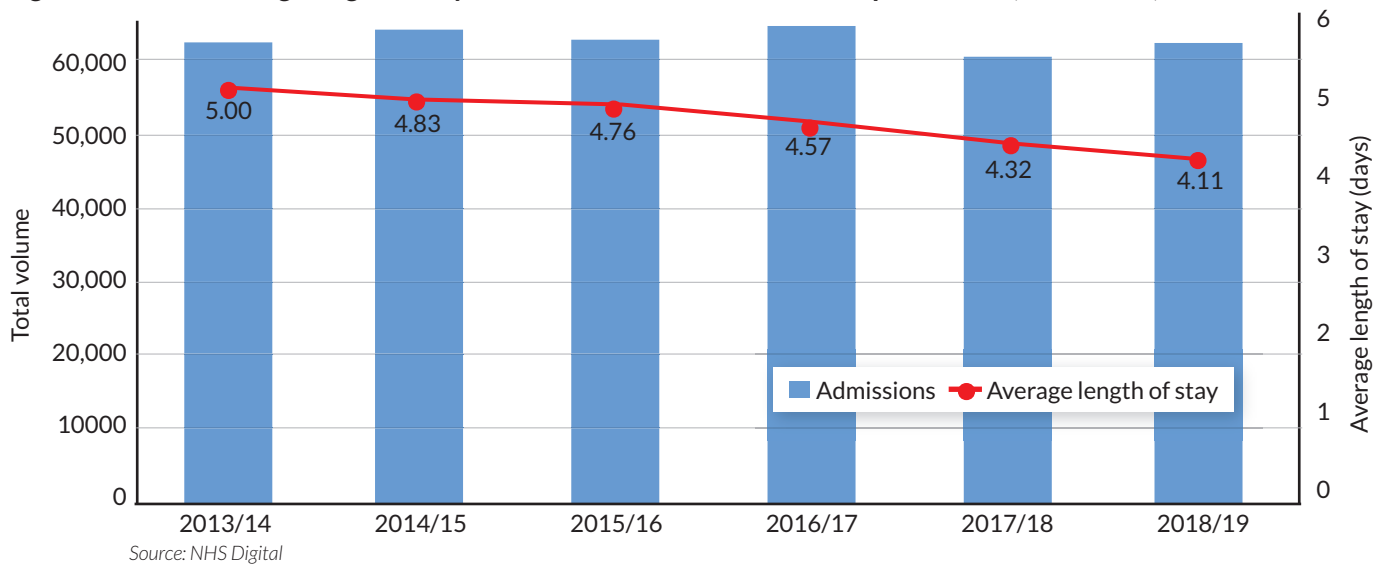


Source: NHS Digital⁴

The total elective admission count for all hip replacements undertaken nationally between the financial year 2013/14 and 2018/19 has remained stable (53,326 admissions in 2013/14 compared with 52,728 in 2018/19). The average length of stay for these admissions has fallen every year, with the fall in average length of stay of 0.98 days over this period representing a significant reduction of 19% for that particular resource type, meaning that bed resource use is about a fifth less now than in 2013/14. The progressive decline in average length of stay, with fluctuating admission counts is particularly encouraging, as it demonstrates continuity in practice improvements in the face of variation in activity.

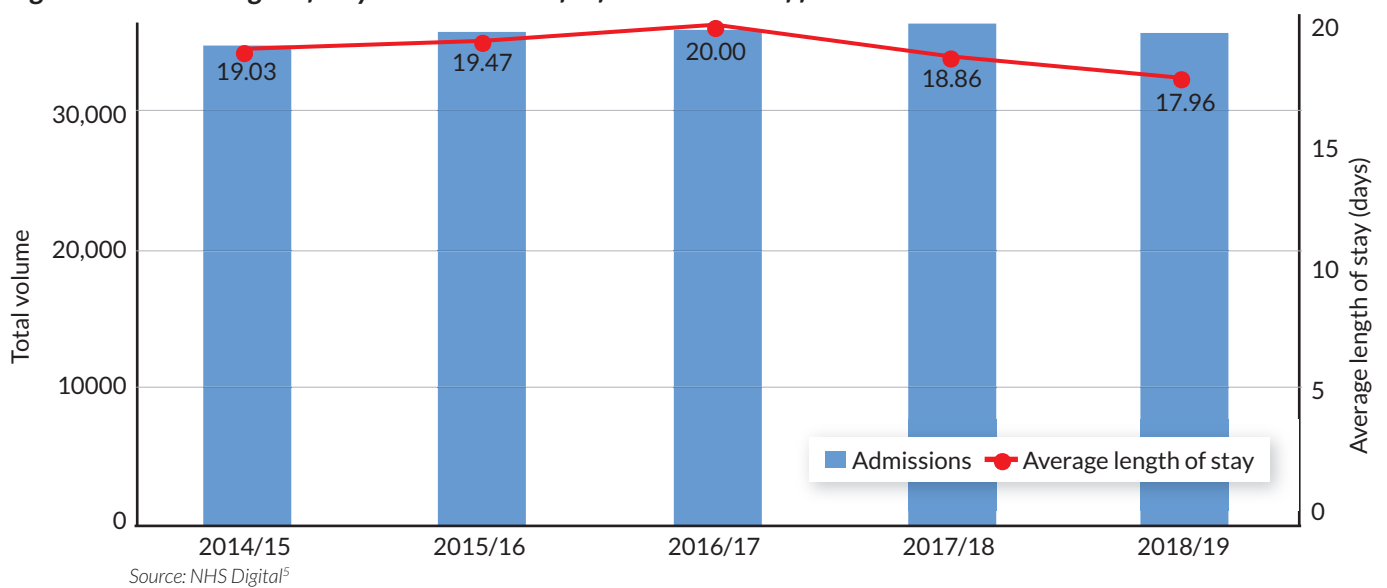
⁴ Note: Figures calculated using procedures and discharge dates from HES data. Only elective and day case points of delivery considered. Data for all NHS funded patients across NHS.

Figure 6: Trend in average length of stay and admissions for elective knee replacements (all methods)



The total elective admission count for all knee replacements undertaken nationally between the financial year 2013/14 and 2018/19 has remained stable (62,387 admissions in 2013/14 compared with 62,043 in 2018/19). The average length of stay for these admissions has fallen every year (from 5.00 days in 2013/14 to 4.11 in 2018/19). The fall in average length of stay of 0.89 days represents a significant reduction of 17.8% for that particular resource type, meaning that as with hip replacements, bed resource use is close to a fifth less now than in 2013/14. The progressive decline in average length of stay with fluctuating admission counts, in the same way as with hip replacements is particularly encouraging as it again demonstrates continuity in practice improvements in the face of variation in activity.

Figure 7: Trend in length of stay and admissions for fractured neck of femur



The total activity for fractured neck of femur admissions undertaken nationally between the financial year 2013/14 and 2018/19 has increased slightly (34,764 admissions in 2013/14 compared with 35,666 in 2018/19). The average length of stay for these admissions has shown a reduction overall (from 19.03 days in 2013/14 to 17.97 in 2018/19). The fall in average length of stay of 1.06 days represents a significant reduction of 5.6% for that particular resource type, meaning that bed resource has again fallen from 2013/14 levels. The trend shows that non-elective admissions for fractured neck of femur are increasing steadily.⁶ The average length of stay for this admission type did rise between 2013/14 to 2016/17, but has since fallen by a larger amount over the subsequent two financial years. The key observation here is that since the GIRFT programme has been running, the procedure count has gone up, but the bed utilisation has gone down by 3.2% (2013/14 total bed days consumed against 2018/19).

⁵ Note: Figures calculated using procedures and discharge dates from HES data. All points of delivery considered. Data for all NHS funded patients across NHS and private providers. A quarter is defined as a financial quarter, with Q1 from 1 April to 30 June, Q2 from 1 July to 30 September, Q3 from 1 October to 31 December, and Q4 from 1 January to 31 March. Only Q1 values are labelled.

⁶ In recent years, the identification of patients undergoing surgery for fractured neck of femur has become increasingly difficult. This is due to a decreasing use of the ICD-10 classification codes identifying a fracture of the femoral neck on HES episodes where the fixation procedure is undertaken. It is not clear why this shift in practice has taken place, although the increasing management of elderly fractured neck of femur patients by geriatricians may have altered admission pathways and inadvertently caused a change in how these patients are documented, and thus coded. It is reasonable to presume that activity numbers for fractured neck of femur repair are in fact higher than those quoted here, but there is no evidence to suggest that there is a sampling error introduced by this discrepancy.

These figures all demonstrate a high-level efficiency trend for the orthopaedics specialty in general; in every case the time patients spend in hospital has fallen. This is seen across these key admission types in elective and non-elective streams. The overall effect is that more can be done for the same bed resource as previously, or the same amount can be done with less.

3. Release of £696 million of operational and financial opportunities by trusts to date

A key message of the GIRFT programme is that improving the quality of treatment and care and achieving better outcomes for patients will release substantial operational and financial opportunities for trusts. Trusts can redeploy this capacity and resource released as part of their efforts to meet growing demand.

GIRFT has supported trusts and their orthopaedic services to achieve a cumulative release of operational and financial opportunities of £696 million over the past five years. These opportunities released represent unnecessary or undesirable activity avoided, bed-days saved by reducing the average length of stay for operations and increasing the use of the day case surgery, and reductions in emergency readmissions, surgical site infection rates, and litigation and procurement costs.

Not all of the opportunities achieved by trusts and orthopaedic services can be quantified, but a conservative estimate has been offered in the table below. The data used spans a five-year period and does not include work that happened before that. The calculations are based on the GIRFT estimated cost of a bed-day at £300, but in practice variation in the type of bed means costs can be multitudes higher than this. The litigation figure is also a conservative estimate, as it compares orthopaedics to NHS-wide trends but does not adjust for the fact that those NHS-wide trends would be even higher if trauma and orthopaedic litigation costs had not been reduced. These savings calculations have been restricted to those areas originally commented upon during the deep dive visits and initial national report, to ensure their alignment with the objectives and recommendations outlined by the programme.

Trusts released £165.3 million operational and financial opportunities in the past year, 2018/19. Many of these opportunities released should be recurrent, and trusts should continue to release opportunities from bed-days, readmissions prevented and savings in procurement and litigation each and every year in future.

Table 3: Summary of national operational and financial opportunities released
For definitions, details and notes on the table below, please read the appendix on page 75.

Opportunity	Comments	Life of programme value delivered (£)	Latest year value delivered (£)
Reductions in activity ^A	49,026 fewer procedures undertaken	£169.6m	£72.6m
Reductions in average length of stay	368,792 bed-days released	£110.6m	£48.3m
Avoided emergency readmissions	4,967 emergency readmissions avoided	£12.4m	£4.1m
Increased use of day case surgery	16,700 bed-days released	£5.0m ^B	£1.5m
Reductions in surgical site infection rates	160 fewer infections presenting	£3.5m ^C	£
Reductions of inappropriate arthroscopies within 1 year prior to total knee replacement	2,917 fewer arthroscopies performed prior to a total knee replacement	£5.9m ^D	£2.3m
Reductions in litigation costs	Data from 2013/14 to 2017/18, showing 264 cases avoided	£67.4m	£16.8m
Savings from reductions in loan kit costs		£23m	£1.6m
Savings in procurement costs	Data for three year period from 2016/17 to 2018/19	£78m	£18.1m
Savings against medical inflation		£220.6m	£
Total opportunity		£696m	£165.3m

Table notes:

^A As detailed in the section on activity reduction, this analysis is limited to procedures cited by the programme as appropriate for reducing due to clinical concerns over efficacy, or those acknowledged as non-preferable as suggesting a separate failure in practice.

^B The highly conservative value of a bed-day as used by GIRFT since its inception as a programme is £300, variation in the type of bed and the cost of this across organisations makes a realistic figure hard to create, given that bed-days are not an easily cashable benefit, this conservatism with regards to valuation is appropriate.

^C Please see the section below titled, 'Reductions in surgical site infection rates'

^D This has been analysed specifically and is not included within other figures in this list

^E Opportunities from surgical site infection rates and against medical inflation cannot be meaningfully attributed to one year with current data

Report themes

1. Minimum volumes

1.1 The findings of the original report

'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' (p18)

'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.' (p18)

The original report cited literature suggesting that for total hip replacements, 35 cases performed per year annually is the critical minimum number, above which complications significantly reduce. For unicondylar knee replacements, the literature at that time suggested that for better results and lower revision rates, surgeons should be carrying out 20 such procedures per year. The report suggested that specific guidelines should be sought from the specialist societies. The specialist societies have since agreed that 10 unicondylar knee replacements is the minimum number advised.

1.2 The report's recommendations

The original report recommended that:

- Each provider unit has an overview of individual surgeon volumes by procedure
- 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, and that the use of loan equipment could be used as a performance metric (p22)

1.3 Developments since the original report

Implementation reporting 1: Minimum volumes implementation (ORT2a, ORT2b, ORT2e)

Improve patient outcomes by introducing minimum numbers of procedure type and networking complex activity.

43.3% of applicable trusts report that they have reviewed individual surgeon volumes by procedure action. A further 52.9% of trusts have agreed to take forward this action. This action is not applicable to 10.8% of trusts.

34.4% of applicable trusts report that they now work in a network to reduce low-volume, complex procedures; such that orthopaedic equipment is on the shelf for a minimum of 90% of cases and critical mass is achieved for complex activity. A further 60.3% of trusts have agreed to take forward this action.

40.5% of applicable trusts report that complex work is undertaken by two operating surgeons, to support training and mentoring and encourage greater patient safety. A further 55% of trusts have agreed to take forward this action.

Since the publication of the original report, evidence has continued to show that cases performed by low-volume surgeons were associated with increased length of stay, longer operating room time, increased in-hospital complications, and increased cost.⁷

There have been many conversations in units about minimum volumes, including the discussions that take place during GIRFT revisits. Anecdotally, awareness of volumes of activity has increased significantly.

A clinical director in a north-west hospital at a very well-attended orthopaedic revisit says: 'We had five surgeons doing revision hips, but it is down to four and it will be three. Revision knees – we had six and that is dropping to four. We had three doing ankles and now it is two. We have had a gradual rationalisation over three years.'⁸

The British Orthopaedic Association (BOA), the specialty body for orthopaedic surgeons, included a section on 'optimising procedure volumes in planned care' in its guidance on implementing GIRFT. This guidance sets out the BOA's view, aligned with GIRFT, of how trusts can use the GIRFT dashboard and a diagram illustrating satisfactory and unsatisfactory distributions of procedure numbers. This guidance also sets out two-surgeon operating as a means to ensure the maintenance of skills for more than one surgeon without losing the benefits of optimal procedure volumes.

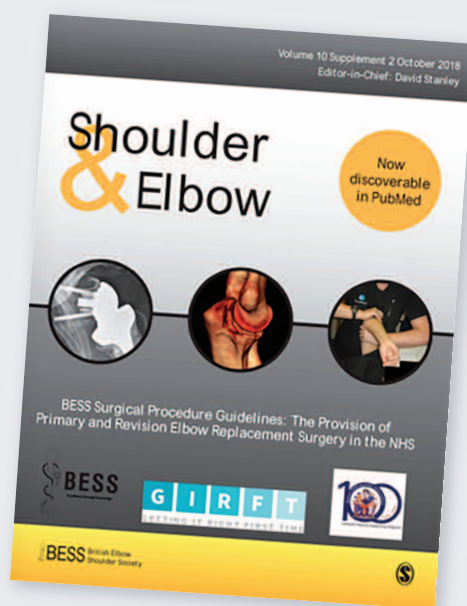
Following the original GIRFT report, the British Elbow and Shoulder Society (BESS) has published a 'Surgical Procedure Guideline', with the aim of standardising and improving the quality of patient treatment pathways. This guideline is fully endorsed by both the BOA and GIRFT.

The guideline cites the evidence that higher volumes of surgical procedures in lower limb replacement leads to better patient results. Evidence on elbows specifically is limited, but early findings suggest that the same pattern applies.

According to the UK NJR data for 2016, the average centre performed only 2 – 3 total elbow replacements and 73 surgeons performed only one. The guidelines recommend concentrating expertise and experience in a small number of centres, suggesting that those that already carry out complex revision work should function as 'hubs' for organised referral networks.

Available online at:

http://europe.nextbook.com/nxteu/sageuk/sel_201810/index.php



Networking: Greater Manchester Orthopaedic Alliance

The Greater Manchester Orthopaedic Alliance (GMOA) is an alliance of orthopaedic and trauma clinicians, academics and service providers in Greater Manchester.

The alliance works to ensure Greater Manchester NHS providers deliver world-class orthopaedic service, education, training and research.

The alliance was established in light of the GIRFT national report on orthopaedic surgery findings that changes could be made to improve pathways of care, patient experience and outcomes, with significant cost savings.

The findings of the GIRFT reports for the trusts in Greater Manchester (GM) were widely accepted and acted as a catalyst for change in orthopaedic practice across the conurbation.

It was realised that individual trusts could not address these issues and a citywide forum was needed to implement service transformation. The GM Orthopaedic Alliance was formed by several GM trusts.

GMOA Members

The meetings are clinician-led and chaired by Professor Phil Turner, consultant orthopaedic surgeon at Stepping Hill Hospital. Trusts in the Greater Manchester Orthopaedic Alliance are:

- Bolton NHS Foundation Trust
- East Cheshire NHS Trust
- Manchester University NHS Foundation Trust
- Pennine Acute Hospitals NHS Trust
- Salford Royal NHS Foundation Trust
- Stockport NHS Foundation Trust
- Tameside Hospital NHS Foundation Trust
- Wrightington, Wigan and Leigh NHS Foundation Trust

The alliance meetings occur every three months and are held under the umbrella of the Manchester Academic Health Science Centre with administrative support.

Key Aims

GMOA's key aims are to:

- Improve the MSK health of GM
- Improve the care of the orthopaedic patient
- Reduce variation
- Raise standards with the aim of all GM trusts being within the top 10% of performers in objective measures for trauma and orthopaedics
- Raise the academic profile of orthopaedic provision nationally and internationally
- Enhance the training and education of all those involved in MSK care
- Control or reduce costs

Ultimately, the aim is to be seen as a beacon site for the organisation and integration of MSK services.

Further information is available on the GMOA website: <https://healthinnovationmanchester.com/our-work/gmoa/>

Dual operating for complex cases and weekly scheduling meeting to address minimum volumes

Leeds Teaching Hospitals NHS Trust has introduced dual operating for complex cases and low-volume revisions. This system is peer planned and discussed in a weekly scheduling meeting.

It was felt that patient safety and outcomes from complex arthroplasty cases would be improved by having two consultants present in the operating theatre. This also disseminates good practice and effective techniques within the department as well as supporting less experienced colleagues as they are gaining this experience.

Patients are identified during the weekly Arthroplasty Governance Meeting and listed at the appropriate time when the selected surgeons are available to operate.

The governance behind the decision-making for complex cases as well as the outcomes have improved, although it is difficult to evidence the latter. All surgeons feel this is a very positive development and that they are better supported during difficult cases, making the procedure less stressful.

The process is limited by the availability of the surgeons who have to deliver service at two different sites. It will also benefit greatly by having more administrative support to collate and document decisions made during the MDT meeting and in organising the appropriate operating list.

The service also introduced a new theatre scheduling tool in 2018, which enabled effective planning and scheduling of patients and surgeon availability to ensure capacity is used as effectively as possible.

East Midlands Specialist Orthopaedic Network (EMSON)

Five hospitals in the East Midlands have established the East Midlands Specialist Orthopaedic Network, which has built up a critical mass of revision arthroplasty cases, improved communication between the hospitals, facilitated discussion between revision arthroplasty surgeons and, when required, facilitated the transfer of patients to a more appropriate surgical environment.

The network was established in response to national concerns, highlighted in the GIRFT report, that many surgeons and units were performing small volumes of revision surgery. Nottingham Elective Orthopaedic Service, part of Nottingham University Hospitals NHS Trust, provides the hub for the 'hub-and-spoke' network.

In establishing the network, informal meetings were held with the spoke units at Sherwood Forest Hospitals NHS Foundation Trust, Grantham and District Hospital, Lincoln County Hospital and Boston Pilgrim Hospital. Referral frameworks and protocols were agreed at later formal meetings.

A dedicated network coordinator was recruited and video-conferencing facilities established, including desktop and radiograph sharing. The network holds weekly meetings, which are chaired by a revision hip surgeon and revision knee surgeon, and attended by other arthroplasty surgeons and a specialist orthopaedic microbiologist. Other specialties such as radiology, plastic surgery, vascular or general surgery can be called upon as required.

In the first six months of the network, 166 cases were discussed. In 43% of cases, there was a recommendation to change the management plan in some way. In most cases changes were minor, to use a different implant or ensuring a standby option was available. In several cases there were more significant alterations to plans, including changing from single-stage to two-stage approach, cancelling planned surgery to aspirate the affected joint or obtain a microbiological diagnosis prior to revision.

Only seven cases (4%) were transferred to the hub during the first six months and this pattern has remained over time. There has, however, been an 18% increase in tertiary referrals to clinics at the hub since the network started. It isn't known whether these patients previously did not receive surgery, or if spoke units offered this complex revision work. The hub would need to consider financial impacts of increasing revision surgery, as it could be difficult to cover the higher costs of these operations and they also displaced other elective surgery capacity that was relatively better reimbursed.

Feedback from surgeons involved in the network has been positive, saying that it has improved surgical confidence and helped with planning. In one case, the surgeon suggested that before the network, they had not had anyone else readily available to discuss complicated cases with. Due to time pressures, not all hub cases were being discussed by the network. In order to avoid a perception that the hub was 'checking up' on the spokes, or there was differential treatment, steps were taken to rectify this.

The network has also conducted analysis on loan kit costs and cases where required instrumentation is unlikely to be available. The future direction of the network might be to transfer these cases to the hub hospital. The network has been expanded to cover complex and revisions shoulder and elbow replacements, and also runs MDT meetings for foot and ankle surgery.

Knee revision surgery South West 'network of networks'

In 2017, Devon had its first regional GIRFT feedback session. The sessions discussed in depth the complex arthroplasty workload and the picture across the South West peninsula, and how they could best support each other and organise care. Professor Briggs subsequently gave permission to run a trial of a revision knee 'network of networks'. This 'network of networks' would consist of several local multi-disciplinary team meetings that would feed into a regional one only as necessary. Coupled with this, the annual South West Knee meeting supported the use of a complexity classification tool, to enable greater understanding of case mix and to build a picture of activity based on real data.

This data audit was run by the South West Orthopaedic Research Directorate (SWORD) the regional registrars' research collaborative, and cross-checked to NJR data. This meant that by the 2019 GIRFT regional inspection, the region had two years of solid data illustrating the current situation, as well as a groundwork of excellent communication and confidence in its ability to work together across a large geographical area.

Thanks to this work, as the region moves to a 'hub-and-spoke' trauma network model in revision knee arthroplasty, it already has in place a strong regional understanding of the potential effects on workload and open and supportive relationships and lines of communication structures.

1.4 The change seen

NJR data of the number of procedures delivered by surgeons from 2012 to 2018 shows that for primary hip replacements and total knee replacements, more procedures are being delivered by surgeons who have performed at least the minimum volume of that procedure associated with improved outcomes.

The changes have varied by type of surgery, with the largest reductions in low-volume operating seen in unicondylar knee replacements, and a small increase seen in the proportion of surgeons performing low volumes of hip revision surgery.

In 2012, 27.4% of unicondylar knee replacement surgeries were performed by surgeons who had delivered fewer than 10 such operations that year. In 2018, this was the case for 16.8% of these operations. This shows progress being made, with more operations being delivered by surgeons who have performed at least the minimum number research suggests should lead to better results and lower revision rates.

For total hip replacements in 2012, 21.8% of operations were performed by surgeons who had delivered fewer than 35 that year, considered to be the critical minimum number above which complications significantly reduce. In 2018, 15.4% of primary total hip replacements were performed by surgeons who had carried out less than 35 that year.

A surprising number of surgeons were recorded as performing very small numbers of primary hip replacements. It appears likely that many of these cases might be the result of miscoding of procedures, as well as the inclusion of emergency procedures in the data as well as elective. This has the effect of exaggerating the level of low-volume operating in the specialty.

However, the fact that there has been more progress from the perspective of volume of procedures than from the perspective of number of surgeons shows that despite the apparently increasing number undertaking very small numbers of operations, other surgeons who deliver high volumes of surgery compensate for this.

Table 4: Minimum volumes demonstrated by NJR data

Operation	2012 Total Ops	2018 Total Ops	2012 Total Surgeons	2018 Total Surgeons	2012 Surgeons Delivering 5 or fewer* (%)	2018 Surgeons Delivering 5 or fewer* (%)	2012 Surgeons Delivering 10 or fewer* (%)	2018 Surgeons Delivering 10 or fewer* (%)
Primary hip	76,003	92,125	2,503	2,405	824 (32.9)	742 (30.9)	1,138 (45.5)	996 (41.4)
Hip revision	9,549	7,558	884	887	432 (48.9)	460 (51.9)	578 (65.4)	618 (69.7)
Total knee replacement	75,365	86,148	2,698	2,549	756 (28%)	634 (24.9)	1,070 (39.7)	933 (36.6)
Unicondylar knee replacement	6,950	10,320	783	790	467 (59.6)	356 (45.1)	598 (76.4)	492 (62.3)
Patello-femoral knee replacement	1,183	940	382	279	329 (86.1)	225 (80.6)	365 (95.5)	267 (95.7)
Knee revision	5,540	5,881	1,073	1,103	742 (69.2)	746 (67.6)	933 (87.0)	962 (87.2)

Note: Since the publication of the original GIRFT report, additional procedures from 2012 have been added to the NJR data. The table above uses the most complete data from the NJR rather than the figures that were available at the time of the original GIRFT report

Source: NJR Data.

1.5 Next steps

Trusts must continue to tackle the issue of low-volume operating, replicating the success seen in unicondylar knee replacements across other procedure types. While the NJR data shows that there has been improvement in most types of surgery, it still shows that an unacceptable number of surgeons continue to operate at very low volumes for even the more common procedures.

2. Service design: ring-fenced beds

2.1 The findings of the original report

On ring-fencing, the report noted that the clinical advantages of a genuine elective orthopaedic ring-fence were already well known but that it was very apparent during GIRFT visits that such an approach was denied, removed or regularly breached in many trusts. This was often perceived by the orthopaedic teams as a failure of the system to plan appropriately and as clear evidence of a lack of commitment to the service by their management teams. The GIRFT visits also identified excellent examples of rigorously maintained dedicated elective orthopaedic (ring-fenced) units.

2.2 The report's recommendations

The original report recommended that:

- A genuine elective orthopaedic ring-fence is one that is rigidly enforced, and this is essential if best outcomes are to be achieved. If there is a breach of the ring-fence of any kind – including supposedly 'clean' surgical patients – 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.

2.3 Developments since the original report

Implementation reporting 2: Ring-fencing beds implementation (ORT5d)

40.3% of applicable trusts report that ring-fenced provision of orthopaedic beds is provided for elective joint replacement patients. A further 56.6% of trusts have agreed to take forward this action.

The GIRFT programme has worked extensively on improving service design and in particular supporting the establishment of ring-fenced beds. Anecdotally, many orthopaedic service managers and clinicians report being able to cite the GIRFT recommendation and Professor Tim Briggs when convincing their managers and other hospital staff of the importance of maintaining a rigorous ring-fence on elective beds.⁹ In particular, consultants who are concerned about ring-fences being breached or a lack of progress in establishing ring-fencing have raised these issues during deep dive revisits.¹⁰

2.4 The change seen

Despite unprecedented pressures on bed capacity in recent winters, most trusts have improved or maintained rigorously enforced ring-fencing of beds.

⁹ *Tackling variations in clinical care, The King's Fund, p17*

¹⁰ <https://www.bodsorthopaedics.co.uk/discussion-forum-summary/ring-fenced-beds/>

Ring-fenced elective orthopaedic ward moved to protect against winter pressures

St Richard's Hospital in Chichester, part of Western Sussex Hospitals NHS Foundation Trust, avoided a significant number of elective operation cancellations by maintaining a ring-fenced elective ward. This was possible by relocating the ward during winter to mitigate the impact of operational pressures.

The trust usually provides orthopaedics from its ring-fenced 22-bed Chilgrove ward. It can be problematic having a large number of beds on this site ring-fenced during winter pressures when emergency admissions rise and space is at a premium.

To guard against having to cancel elective activity because of having to use the ring-fenced ward for emergency patients, it was decided that the elective activity would temporarily be moved to a lesser number of ring-fenced beds on the Chichester Suite (a 26-bedded ward normally used for private and bariatric patients).

This was possible due to the configuration of the Chichester Suite, which is 'U-shaped', and could be split using a fire curtain. Private and bariatric patients could continue to be seen using the 14 beds on one side of the suite whilst elective orthopaedic patients could be seen using the 12 beds on the other side, without any cross-over.

Thanks to the protection of the ring-fenced ward, it was possible to maintain elective activity throughout the winter period whilst having the flexibility to manage an increased emergency workload. As a result, the orthopaedic team only had to cancel two electives in the winter of 2018/19 in comparison to the 210 electives cancelled in the winter of 2017/18.

It is envisaged that the ward move will take place on an annual basis.

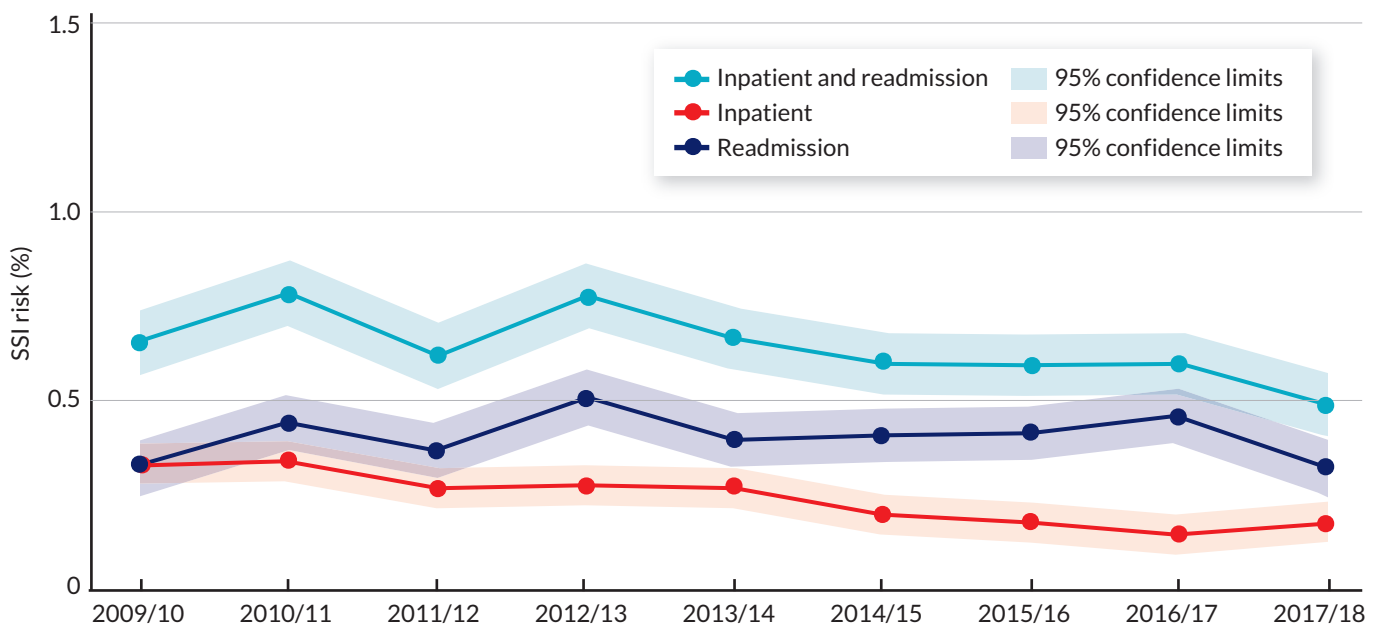
The PHE SSI surveillance report has found that from 2016, inpatient and readmission surgical site infection incidence has remained relatively stable. There was a slight decrease in 2017/18 for both hip and knee replacement. The trend has been for greater decreases for infections occurring among inpatients compared to those detected in readmission; however in 2017/18 a decrease in the latter was also noted.¹¹ (see Figure 8)

For context, in most other specialties no discernible trend was noted and, in some specialties, the surgical site infection incidence had increased. An important caveat to this is that the numbers of trusts reporting for other specialties is often lower because, unlike for orthopaedics, such reporting is not mandatory.

The PHE SSI surveillance report found that there was less variation in surgical site infection incidence between trusts in orthopaedics than in the other specialties recorded. This has been the case since the introduction of surveillance.

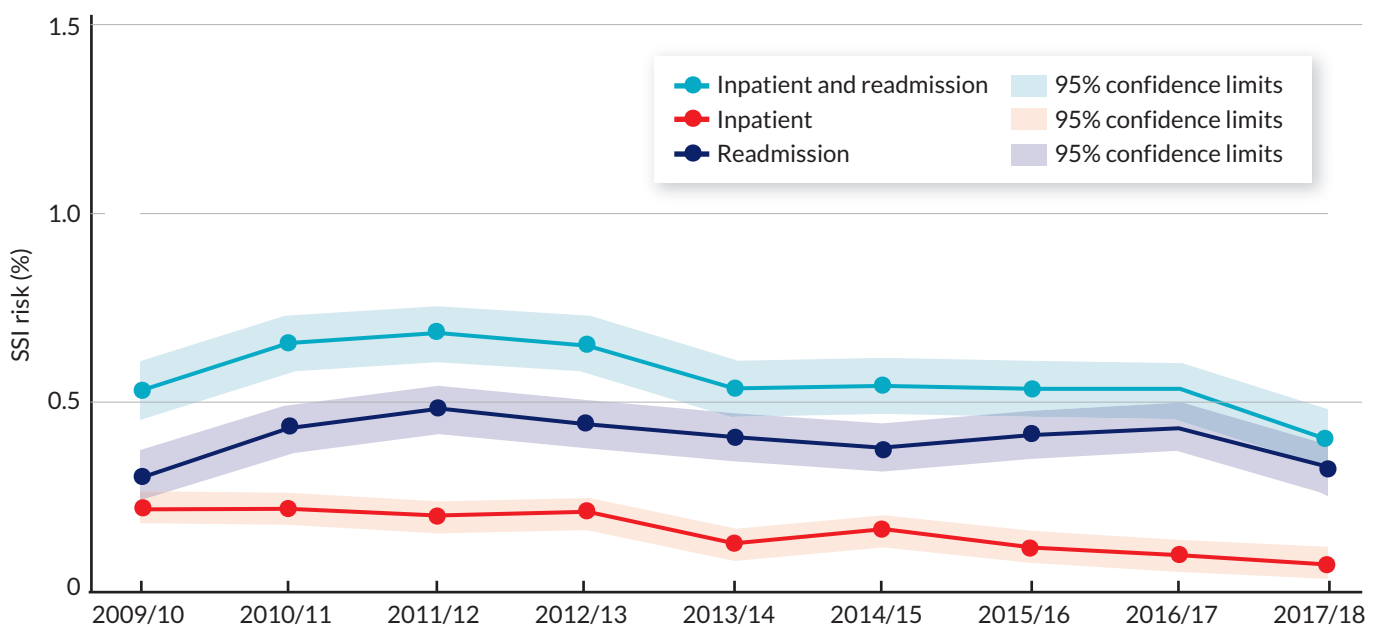
One trust was a high outlier for both the hip and knee replacement surgical categories and the low outlier trust was a low outlier for both hip replacement and repair of neck of femur. Two trusts had been notified as outliers in the previous year as well for the same surgical categories.

Figure 8a: Trends in annual SSI incidence for surgical categories, April 2009 to March 2018 - Hip Replacement



Source: Public Health England, Surveillance of surgical site infections in NHS hospitals in England, 2017/18¹²

Figure 8b: Trends in annual SSI incidence for surgical categories, April 2009 to March 2018 - Knee Replacement



Source: Public Health England, Surveillance of surgical site infections in NHS hospitals in England, 2017/18¹²

2.5 Next steps

The GIRFT deep dive revisits have found that ring-fencing has been increasing, and that existing ring-fences are being improved and more rigorously maintained. This is particularly encouraging given that this has happened in an environment of winter pressures and the resulting increased demand for bed capacity in trusts.

There remains a risk that progress in ring-fencing beds will slow or even reverse if demand for beds continues to outstrip capacity. To mitigate against this, GIRFT will continue to work directly with clinicians and managers in trusts to reinforce the benefits of maintaining ring-fencing and finding solutions to pressures on bed capacity. Further research on the impact of ring-fencing beds would also support clinicians and managers to maintain ring-fences in their trusts.

¹² Surveillance of surgical site infections in NHS hospitals in England, 2017/18 page 26, accessed 25/11/2019 at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765967/SSI_annual_report_NHS_hospitals_2017_18.pdf

3. Service design: hot and cold sites

3.1 The findings of the original report

The original report set out findings and recommendations on several major areas of service design, including: ring-fenced beds, theatre environment, hot (emergency, unplanned care) and cold (elective, planned care) site and networking.

The original report worked with a number of 'nascent' networks to understand variations in quality and practice across their regions and this had already presented interesting findings for clinicians and managers considering reconfiguration of services. It was clear that some providers needed to collaborate locally to determine if there was a case for the creation of a hot and cold site model, as well as to take decisions on minimum volumes and the centralisations of complex activity. Examples of local conflict, professional competition and refusals to collaborate or network were also reported. The report showed how spread some truly specialised activity was, underlining the need to focus this activity into a smaller number of networks.

3.2 The report's recommendations

The original report recommended:

- The creation of a 'cold' elective orthopaedic centre, either with an existing hospital environment or separate on the same site

3.3 Developments since the original report

Implementation reporting 3: Hot and cold site implementation (ORT5f)

33.7% of applicable trusts report that they have, where appropriate, created a 'cold' elective orthopaedic centre, either within an existing hospital environment or separate on the same site. A further 41.1% of trusts have agreed to take forward this action.

The GIRFT programme has worked extensively on improving service design and in particular supporting the establishment of ring-fenced beds and hot and cold site models.

The importance of the GIRFT recommendation to establish hot and cold site models for trauma and orthopaedics was highlighted in the NHS Long Term Plan chapter on improving care quality and outcomes which included the case study on Gloucestershire Hospitals set out below.

The need for trusts to consider moving to a hot and cold site model and maintain ring-fencing acquired a new importance in 2018, following the unprecedented decision taken by NHS England in January 2018 to cancel all elective operations. In areas with established hot and cold sites, trusts were able to improve their performance against A&E targets while maintaining or even increasing their elective work.

We were able to show the benefits of the hot and cold site model as part of our Getting It Right In Emergency Care advice pack, published ahead of winter 2018/19.

The Getting It Right In Emergency Care advice pack is available from our website at <https://gettingitrightfirsttime.co.uk/emergency-care/>



Table 5: Live, pilot and planned hot and cold site splits

Live hot and cold site split or pilot site	Planning stage	In discussion
<ul style="list-style-type: none"> ■ King's College Hospital NHS Foundation Trust ■ United Lincolnshire Hospitals NHS Trust ■ Royal Cornwall Hospitals NHS Trust ■ Gloucestershire Hospitals NHS Foundation Trust ■ East Kent Hospitals University NHS Foundation Trust ■ Southport & Ormskirk Hospital NHS Trust ■ University Hospitals Plymouth NHS Trust, Care UK ■ Maidstone and Tunbridge Wells NHS Trust ■ Royal Free London NHS Foundation Trust 	<ul style="list-style-type: none"> ■ Hampshire Hospitals NHS Foundation Trust ■ Manchester University NHS Foundation Trust ■ York Teaching Hospital NHS Foundation Trust 	<ul style="list-style-type: none"> ■ University Hospitals Birmingham NHS Trust ■ Torbay and South Devon NHS Foundation Trust ■ North West Anglia NHS Foundation Trust ■ Sherwood Forest Hospitals NHS Foundation Trust

3.4 The change seen

CASE STUDY 8

Hot and cold site at Gloucestershire Hospitals NHS Foundation Trust

Gloucestershire Hospitals NHS Foundation Trust was formed in 2005 by the merger of Gloucester and Cheltenham Hospitals, nine miles (30 minutes) apart by road. Since 2017, GIRFT has supported the trust to split trauma and orthopaedic services across the two sites, with Cheltenham designated the main cold (elective orthopaedic) site and Gloucester the hot (trauma) site. Prior to this separation of services, the A&E department across the two hospital sites was failing all constitutional standards.

Over 10% of A&E attendances at both Cheltenham and Gloucester hospitals were for musculoskeletal issues.

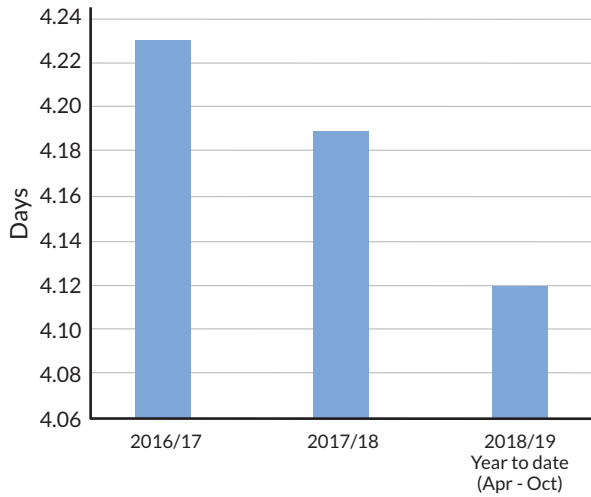
Trauma services were upgraded and improved at Gloucester and senior decision makers now review all trauma admissions on a daily basis, and are available within 30 minutes of being called to see or offer guidance to trauma patients. Since its inception, the breaches in A&E attributable to trauma and orthopaedics have fallen from over eight per week to one or two.

This has resulted in a significant reduction in trauma admission and overall usage of trauma beds, whilst ensuring that patients requiring admission are seen quickly and admitted.

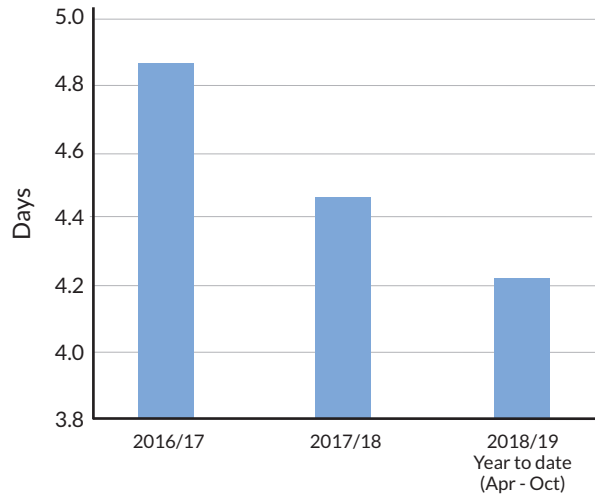
Elective paediatric surgery and some day case elective work still continues at Gloucester. This elective work continues to be affected by winter pressures but there is significant improvement in elective performance at Cheltenham, such that the trust significantly outperformed its contract in the final quarter of the financial year. It performed 19% more lower limb joint replacement surgery after reconfiguration and when on a block contract as compared to the final quarter of the previous year when it was on a variable contract. Similarly in the final quarter, the trust had a planned inpatient activity of 2,102 cases but actual activity delivered was 2,758 cases.

Benefits resulting from hot and cold site split at Royal Cornwall NHS Foundation Trust

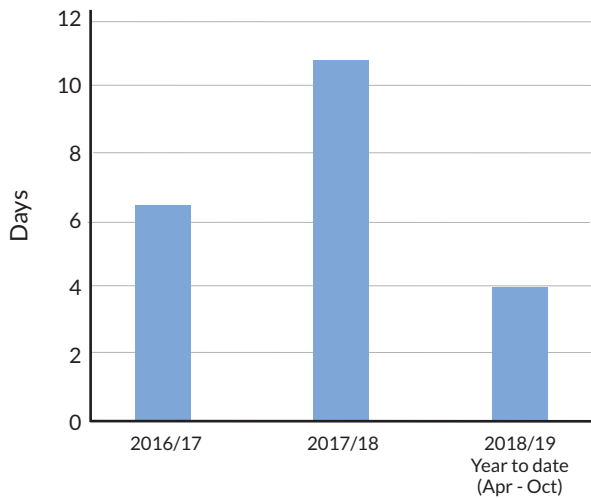
LOS for patients receiving elective primary hip replacement



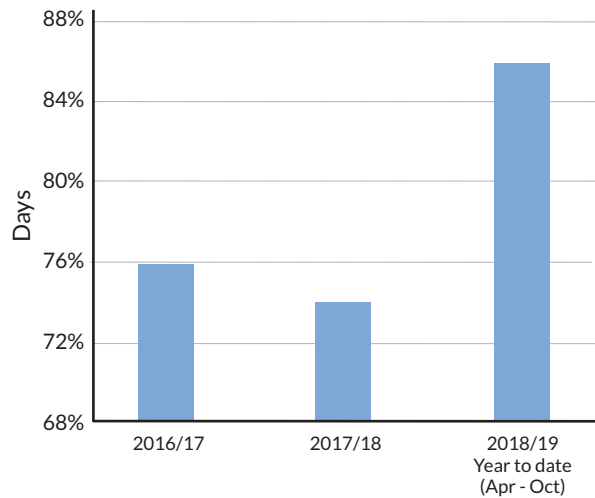
LOS for patients receiving elective primary knee replacement



LOS for patients receiving elective revision knee replacement



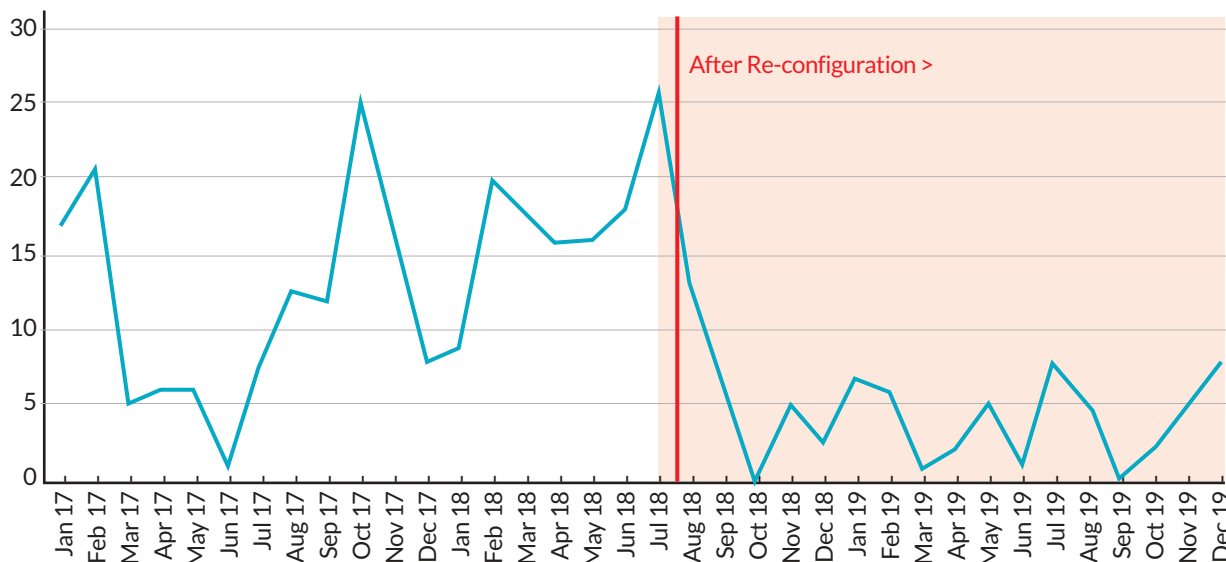
% of elective primary hip replacement with cemented or hybrid fixation for patients 70+ years



Source: Data provided by Royal Cornwall NHS Foundation Trust

Reduced day-of-surgery cancellations for elective orthopaedics after hot and cold site split at United Lincolnshire Hospitals NHS Trust

Trust-wide hospital initiated cancellation done on the day of surgery for elective orthopaedics due to no beds



Source: Data provided by United Lincolnshire Hospitals NHS Trust

3.5 Next steps

Evidence of the benefit of hot and cold site arrangements has now been collected and verified from several sites, alongside guidance on implementation. In order to share this guidance more widely, the GIRFT programme will develop and publish an advice pack for trusts.

4. Choice of implant

4.1 The findings of the original report

'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.' (p24)

In addition to its prominent findings of unwarranted variation in the choice of cemented or uncemented implants, the report addressed variation in the use of the ODEP rated implants.

- Average ODEP 10A Acetabular use is 20.2% (range 0% to 100%)
- Average ODEP 10A femoral use is 79.8% (Range 13% to 100%) (p7)

4.2 The report's recommendations

The original report recommended that:

- 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. (p25)

4.3 Developments since the original report

Implementation reporting 4: Cemented or hybrid fixation in patients over the age of 70 (ORT3a)

31.4% of applicable trusts report that at minimum, 80% of primary hip replacements in patients over the age of 70 should use cemented or hybrid fixation and beyond this the percentage of cemented fixation in the age group should be increased. A further 58.7% of trusts have agreed to take forward this action.

Implementation reporting 5: Standardised, evidence-based method for implant choice (ORT3b)

35.7% of applicable trusts report that they review the whole cost of procedures, accounting for prosthesis cost, and the patient's expected need for revision. A further 61.3% of trusts have agreed to take forward this action.

The GIRFT team has continued to monitor changes in trusts in the percentage of cemented and uncemented primary hip replacements, and regularly discuss these rates with the relevant service leads both at revisits and at other opportunities.

The GIRFT regional teams have been discussing choice of implant, in particular cemented and uncemented, in their meetings with orthopaedic services and managers in trusts.

The original report noted the belief amongst some surgeons that uncemented implant usage increased theatre productivity, though other surgeons reported that cementing only added 24 minutes to total theatre time. Since the publication of the original report, competition for theatre time has continued to increase, and if combined with misconceptions about the impact of cementing on productivity this might have hindered improvement in this respect.

NHS England and NHS Improvement has supplemented the BPT for primary hip replacement to support appropriate fixation methods. Specifically, a new criterion has been added to require that 80% of primary hip replacements in patients aged 70 and over would receive a cemented or hybrid prosthesis.

The BOA has published guidance on the rationalisation of implant selection, which specifies amongst other principles that there should be a clear, evidence-based rationale for using a device which is not at the cheaper end of the scale and which has less than a 10A ODEP rating. The guidance also includes a letter listing the all-cause risk of requiring a revision for six of the most common systems for knee implants alongside information on how to implement rationalisation of prosthesis use. All of this guidance is fully aligned with the recommendations of the GIRFT report.

ODEP has added a star to its ratings system, which is awarded to products which have complied with the benchmark replacement rate of less than 1 in 20 (5%) at 10 years, as defined by revised NICE guidelines published in February 2014. With most hip implants now lasting over 10 years, and an ageing population, ODEP has now been extended to offer 13A* ratings. This followed inquiries from manufacturers seeking to extend the minimum follow-up from 10 to 15 years. ODEP felt that a five-year gap would be too large, as a number of implants may fail sooner, but decided that a 13-year benchmark was feasible and would keep pace with joint registries.¹³ It should be noted that B rated implants have provided acceptable evidence and sufficient data to demonstrate compliance, but for smaller numbers of patients than the A rating, giving less confidence in the results than A. These are normally 'boutique' implants used for very specific patient needs.

ODEP commenced benchmarking certain shoulder devices in 2017, and is looking to extend ratings to cover most types of shoulder prostheses in the nearest future.

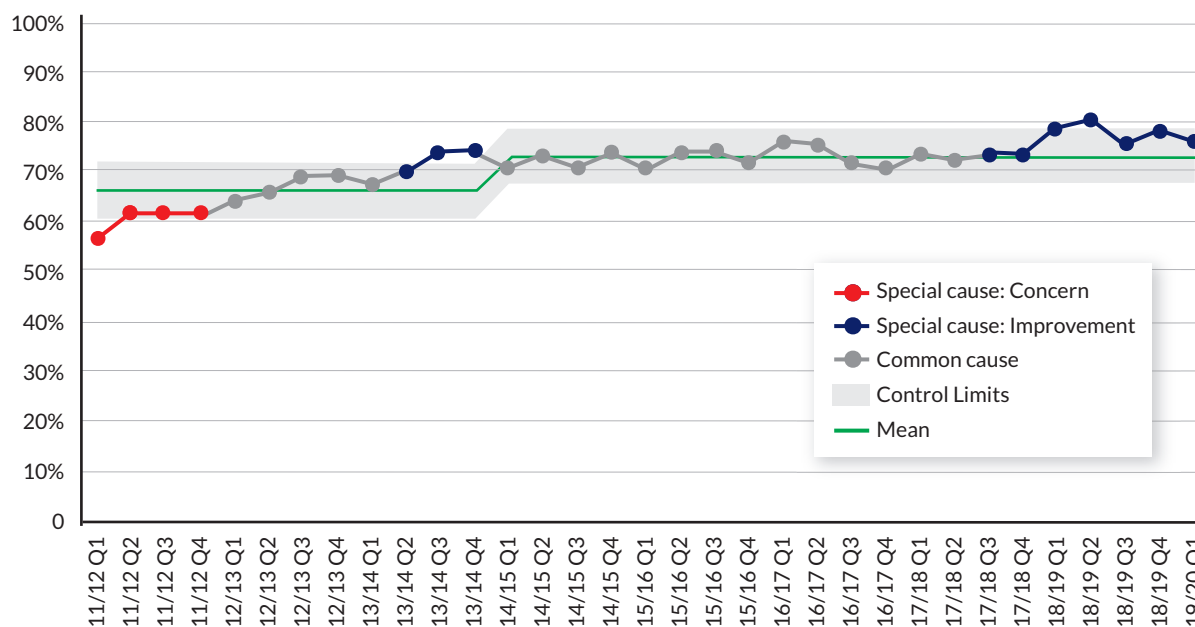
CASE STUDY 11

Increased use of cemented fixation in the North East

Out of 22 trusts in the North East, 14 have seen significant increases in the proportion of primary hip replacements for patients aged 70 years and over using cemented fixation, with only four seeing a decline. Several other trusts remained unchanged, including four trusts that have maintained cemented fixation rates at over 90%.

North East and Yorkshire (Y63)

% of elective primary hip replacement with cemented fixation for patients aged 70 years and over



Source: GIRFT Data

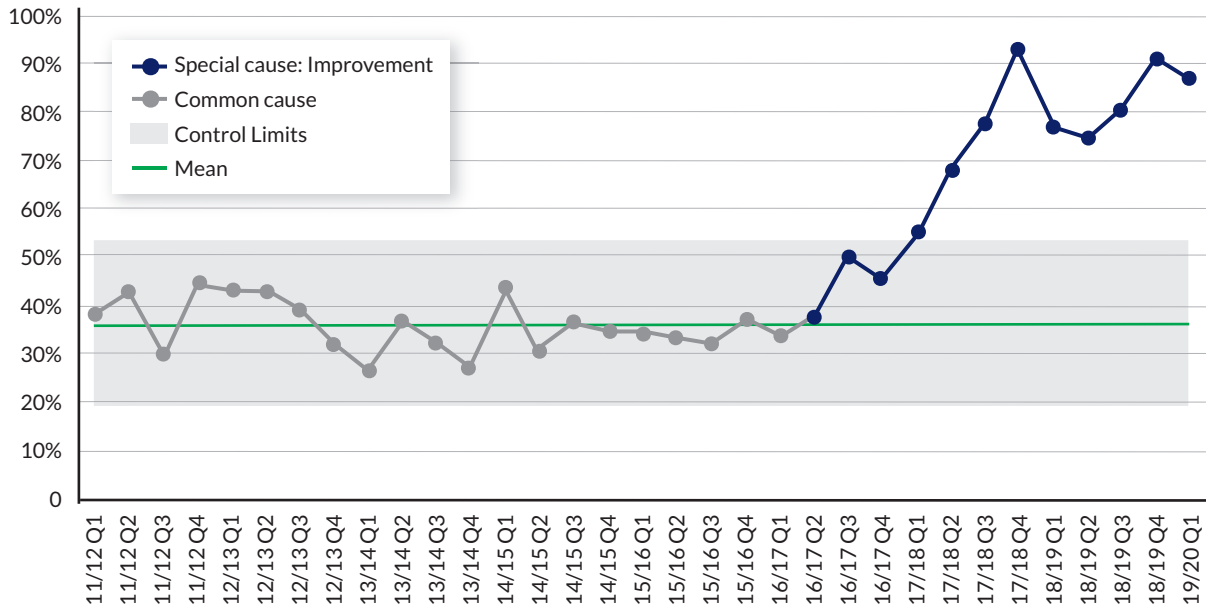
¹³ <http://www.opnews.com/2016/07/knees-and-before/12721>

Trusts increasing use of cemented fixation for patients aged 70 years and over

United Lincolnshire Hospitals NHS Trust has seen a dramatic increase in the proportion of hip replacements for patients aged 70 years or over using cemented fixation, which followed an orthopaedics deep dive visits held in February 2017.

United Lincolnshire Hospitals NHS Trust (RWD)

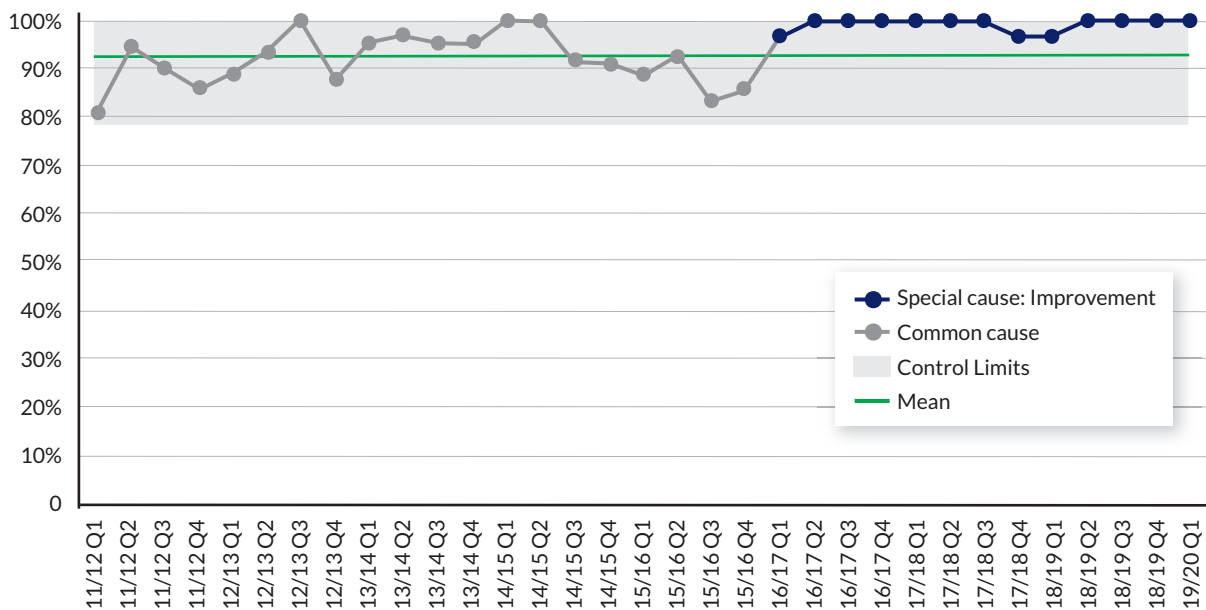
% of elective primary hip replacement with cemented fixation for patients aged 70 years and over



Airedale NHS Foundation Trust has consistently met and exceeded the target, but even within this high performance the trust has found scope to reduce the variability in its use of cemented fixation.

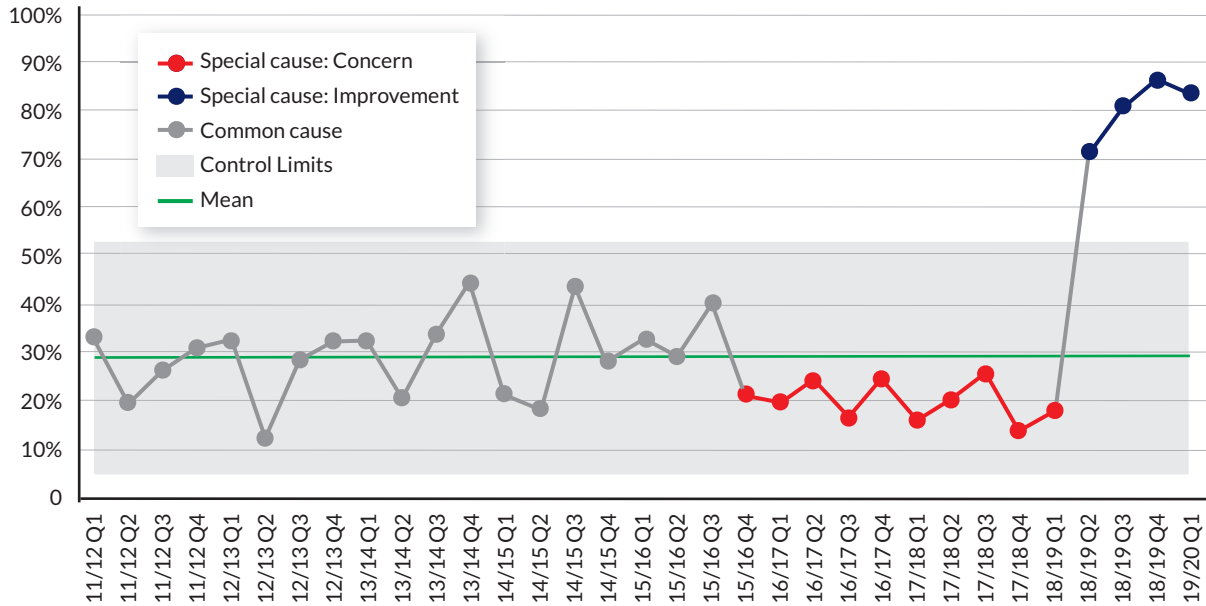
Airedale NHS Foundation Trust (RCF)

% of elective primary hip replacement with cemented fixation for patients aged 70 years and over



Salisbury NHS Foundation Trust initially saw a drop in its use of cemented fixation from an already low level, but has recently seen a significant increase from below 20% to over 80%. This has been sustained for several consecutive quarters. A GIRFT visit was held in the trust during the first quarter of 2018/19.

Salisbury NHS Foundation Trust (RNZ)
% of elective primary hip replacement with cemented fixation for patients aged 70 years and over



Source: GIRFT Data

4.4 The change seen

The proportion of hip replacements using either cemented or hybrid fixation has increased to 76%, just below the national target that 80% of primary hip replacements in patients aged 70 years and over should use cemented or hybrid fixation.

It is important to note that the major growth has been in the proportion of hybrid hip replacements.

Table 6: ODEP usage by rating, 2012 and 2018

	Total Usage	Total 10A and above	Total unrated	13A*	13A	10A*	10A	10B	7A*	7A	5A*	5A	5B	3A*	3A	Pre-Entry A*	Pre-Entry	Not ODEP Rated Product	Unclassified	Discontinued	Unacceptable
Hip - Stems Cemented	38,381	88.43%	0.93%				88.43%	1.39%		0.26%		7.15%	0.00%		0.36%		0.28%		0.93%		
Hip - Cups Cemented	26,950	34.26%	15.35%				34.26%	0.58%		3.93%		34.93%	1.04%		9.86%		0.04%		15.35%		
Hip - Stems Cementless	36,430	68.86%	3.08%				68.86%	0.00%		2.56%		1.70%	0.24%		4.07%		8.64%		3.08%		
Hip - Cups Cementless	47,630	2.74%	4.55%				2.74%	0.17%		39.94%		30.29%	0.00%		3.99%		18.13%		4.55%		
Resurfacing Head	1,075	63.16%	0.00%				63.16%	0.00%		0.00%		10.88%	0.00%		16.93%		9.02%		0.00%		
Resurfacing Cup	1,117	63.65%	0.63%				63.65%	0.00%		0.00%		2.42%	0.00%		16.83%		16.47%		0.63%		
Hip - Stems Cemented	58,215	96.26%	0.13%	19.80%	0.69%	70.95%	4.83%	0.00%	0.00%	0.48%	0.00%	0.61%	0.00%		0.72%	0.94%	0.23%	0.03%	0.07%	0.03%	0.00%
Hip - Cups Cemented	29,356	44.83%	1.77%	42.30%	0.40%	1.01%	1.11%	0.00%	24.09%	18.12%	7.84%	2.80%	0.03%		0.17%	0.00%	0.03%	0.01%	0.71%	0.00%	1.05%
Hip - Stems Cementless	38,400	68.88%	0.63%	61.32%	2.18%	3.98%	1.41%	0.02%	14.11%	0.60%	4.10%	9.51%	0.00%		0.83%	0.31%	0.16%	0.17%	0.43%	0.03%	0.00%
Hip - Cups Cementless	67,292	67.90%	0.75%	8.94%	0.63%	57.80%	0.54%	0.00%	16.70%	2.18%	10.20%	0.25%	0.00%		1.78%	0.23%	0.00%	0.10%	0.62%	0.00%	0.03%
Resurfacing Head	564	97.16%	0.00%	0.00%	0.00%	85.28%	11.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	2.84%	0.00%	0.00%	0.00%	0.00%
Resurfacing Cup	550	99.45%	0.00%	0.00%	0.00%	87.09%	12.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.55%	0.00%	0.00%	0.00%	0.00%

Source: ODEP and NJR Data

4.5 Next steps

An increased awareness of the need to rationalise implant choices has opened conversations about other interventions, such as choices between ankle fusion and replacement.

While the introduction of the new criteria in the Best Practice Tariff (BPT) is welcome, we would encourage the future tariff to go further and require 80% of patients aged 70 or over to have a fully cemented replacement on both femoral and acetabular sides. All the evidence from the NJR supports this direction of travel.

Inquiries received by ODEP show that its ratings are being used worldwide. ODEP reports that the next step for the benchmark will probably be at 16 years and that this might 'come round more quickly than we expected'. Following the introduction of ratings for certain shoulder devices in 2017, ODEP is looking to extend ratings to cover most types of shoulder prostheses in the near future. A discussion regarding ODEP for revision devices is underway.

5. Knee Arthroscopy

5.1 The findings of the original report

'...it is not good practice, nor cost effective if a high number of arthroscopies are being undertaken on patients who then require a total knee replacement within one year.' (p12)

At the time of the original report's publication, the literature was already clear that knee arthroscopy was not a clinically effective intervention for many patients. However, there had continued to be significant variation between the numbers of these arthroscopies being performed in NHS providers.

5.2 The report's recommendations

The original report identified a need to reduce use of knee arthroscopy where the procedure was not an appropriate surgical option. The percentage of patients aged 60 and over who had an arthroscopy less than a year before elective knee replacement was used as proxy measure to identify inappropriate arthroscopy use. This reflects NICE and BOA guidance which provides limited indications for arthroscopy for patients with osteoarthritis.¹⁴

5.3 Developments since the original report

The number of arthroscopies being undertaken on patients aged 60 and over who require a total knee replacement within one year continues to be included in trust dashboards and data packs, and is discussed on revisits. GIRFT regional teams also raise the issue with trusts.

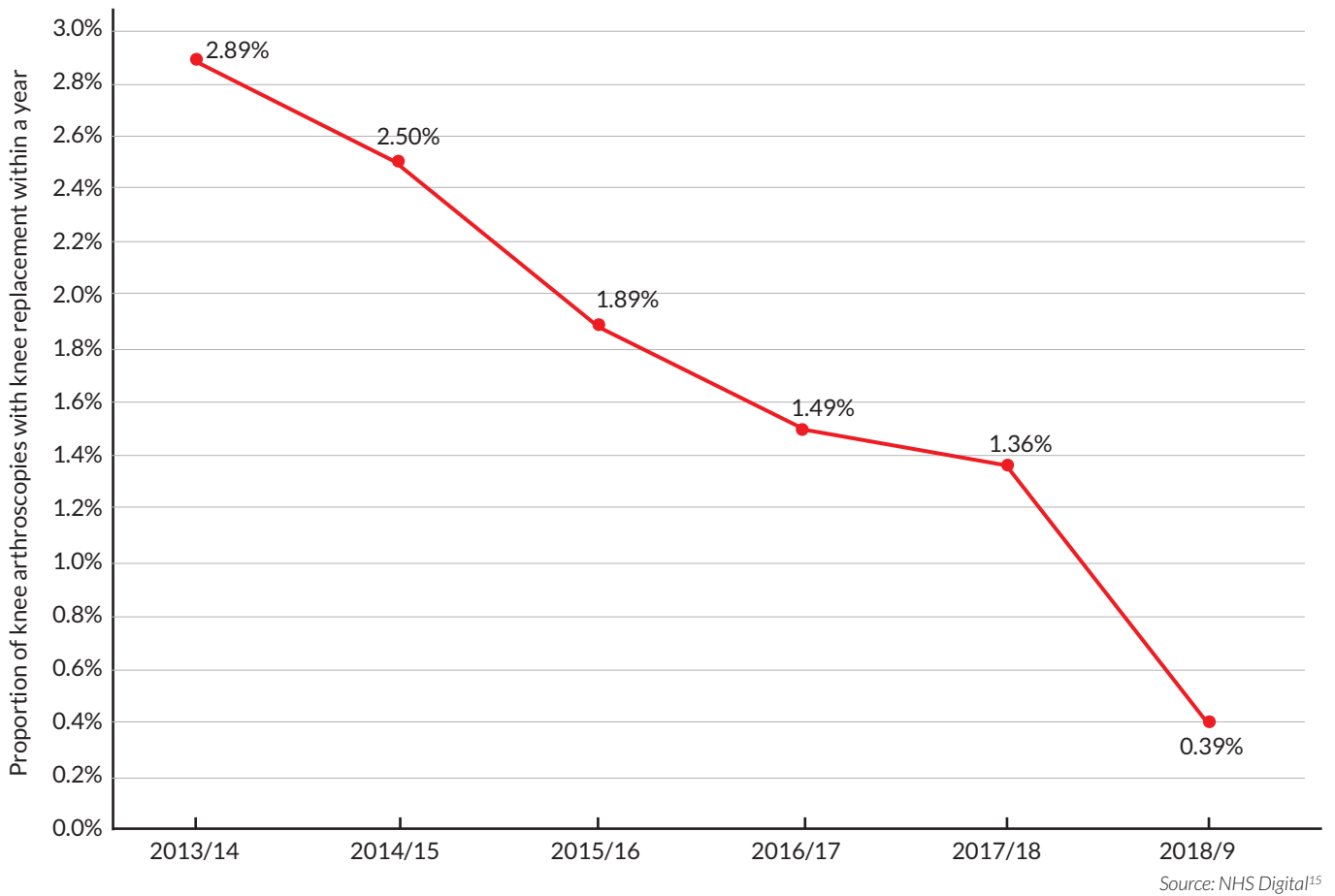
Clinical Commissioning Groups have been exerting pressure to reduce unwarranted variation in knee arthroscopies through local commissioning policies. This has culminated in the inclusion of knee arthroscopy for patients with osteoarthritis in NHS England's 'Evidence-Based Interventions' guidance, as a 'Category 1' intervention, meaning that it should not be routinely commissioned or performed. This guidance for local commissioners was published in November 2018 and also set out plans to introduce changes to national tariffs so that providers will not receive payment for knee arthroscopies for patients with osteoarthritis, unless an individual funding request has been made.

GIRFT has also been working to reduce unwarranted intervention in other areas of orthopaedic surgery. Specifically, GIRFT is working to reduce unnecessary shoulder surgery for patients with subacromial shoulder pain without six weeks of physiotherapy in the first instance. GIRFT has supported the development of patient information to improve shared decision making and self-managed physiotherapy for patients with this condition. GIRFT has also supported funding for research in Oxford on appropriate indications for arthroscopy in cases of meniscus tear.

¹⁴ <https://www.boa.ac.uk/wp-content/uploads/2014/01/Painful-OA-Knee-Guide-Final-.pdf>;
<https://www.nice.org.uk/guidance/cg177/chapter/1-Recommendations#referral-for-consideration-of-joint-surgery-2>

5.4 The change seen

Figure 9: Patients receiving primary knee replacement following arthroscopy on the same knee less than 1 year prior to replacement



There is a stark reduction in the number of knee arthroscopies being undertaken up to one year prior to a knee replacement since 2013/14. In the 2013/14 financial year 2.89 arthroscopies per 100 were undertaken within a year of that knee being replaced. The figure in the 2018/19 financial year was 0.39%, and has fallen by 85% overall. The incidence of these procedures has fallen progressively, year after year. As these procedures are simply not being undertaken, direct savings result and the strength of the clinical engagement with the programme in areas of best practice guidance is demonstrated.

5.5 Next steps

While the number of these interventions has reduced among NHS providers, the same reduction has not yet been seen in the independent sector. GIRFT is now working with the independent sector and unwarranted variation in knee arthroscopies will be addressed as part of this work, so we expect to see a reduction in future mirroring that achieved by NHS providers.

6. Stocktake of rehabilitation services

6.1 The findings of the original report

'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 were 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.' (P35)

The report's section on rehabilitation services, developed in collaboration with the Chartered Society of Physiotherapy, investigated whether physiotherapy services in England were delivering optimal rehabilitation and set out 11 recommendations on rehabilitation.

Despite the knowledge that rehabilitation after hip fracture, for example, improves results, fewer than 50% of hip fracture patients were receiving physiotherapy.

6.2 The report's recommendations

The original report recommended that:

- All hip fracture and total knee replacement patients should receive a multidisciplinary assessment pre-operatively to determine achievable goals of rehabilitation
- For total knee replacement 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
- More intense rehabilitation in the hospital immediately after hip fracture surgery, focusing not just on improving mobility, but on strength, balance and endurance
- 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
- 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
- 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 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 their rehabilitation – either by extending the ortho geriatrician role, or creating a new post that bridges acute and community health and social care
- Community rehabilitation services should be adequately resourced to provide early, intense and frequent rehabilitation to all hip fracture patients
- All total knee replacement 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
- Community physiotherapy services should divert resources away from total knee replacement rehabilitation to focus more on hip fracture patients
- Rehabilitation data should be routinely collected in the National Hip Fracture Database and the NJR to monitor patient across the whole pathway

6.3 Developments since the original report

Implementation reporting 6: Rehabilitation services implementation (ORT6a-f)

- 38.1% of applicable trusts have reported that all hip fracture and total knee replacement patients receive a multi-disciplinary assessment pre-operatively to determine achievable goals of rehabilitation, and a further 55.2% have agreed to take forward this action.
- 41.0% of applicable trusts have reported that for total knee replacement patients, pre-operative care includes education, post-operative protocol, identifying patients at risk of a poor functional outcome and organisation of rehabilitation equipment at home. A further 52.1% have agreed to take forward this action.
- 23.8% of applicable trusts have reported that rehabilitation services are resourced and designed as seven day services, to ensure quality of care in terms of intensity and frequency of rehabilitation across the whole week. A further 67.9% have agreed to take forward this action.
- 28.6% of applicable trusts have reported that as routine practice, hip fracture patients are discharged from acute care as soon as they are medically fit, to continue their rehabilitation in the most suitable environment (without a break). A further 62.2% have agreed to take forward this action.
- 32.8% of applicable trusts have reported that as routine practice, all total knee replacement patients should have follow-up with a specialist physiotherapist within three weeks post discharge to assess post-operative progress. A further 57.1% have agreed to take forward this action.

6.4 The change seen

When the first orthopaedic deep dive visits took place, many trusts had been reducing their physiotherapy provision as part of their Cost Improvement Programmes (CIPs). While this led to savings on staff in the short run, it was driving up length of stay, thereby reducing efficiency and costing significantly more in the medium and long run.

On revisits, trusts now recognise that they need to invest in physiotherapy to deliver greater savings, at the same time as improving patient outcomes and the quality of care. Many trusts are now investing in their physiotherapy services, in particular increasing therapies on wards in order to provide an efficient service, reduce length of stay and improve flow.

Introduction of 'twilight physio' at Newcastle upon Tyne Hospitals NHS Foundation Trust

Newcastle upon Tyne Hospitals NHS Foundation Trust had identified the positive impact of physiotherapy on the flow of patients through the elective orthopaedic wards during the winter period. An intervention was agreed that would extend the physiotherapy hours for a pilot period of 12 weeks. This model drew on the experience of implementation in other trusts.

The main aims of the pilot were to mobilise patients on the day of surgery (where appropriate), facilitate patient discharges and provide increased physiotherapy interventions to those who would benefit in order to meet their goals in a more timely manner.

The team, including physiotherapists, matron, surgeons and business managers, agreed a model that would slot into the current routine of the ward. The model runs Monday – Friday, 1630-1930 and is staffed by a physiotherapist and a physiotherapy assistant. Twilight sessions were covered voluntarily by staff who had received training and were competent to assess and treat orthopaedic patients. Although sessions were generally staffed there were a small number of occasions where cover could not be provided. If permanent funding is agreed the twilight shift will be staffed from within the current orthopaedic team as part of their normal working hours. A real team approach has been demonstrated with the implementation of twilight physio. Both nursing and medical staff have been really enthusiastic and supportive about the service extension.

Using temporary funding from the musculoskeletal directorate the service commenced in January 2018, in the midst of the busy winter period when the trust experienced high numbers of emergency admissions whilst trying to maintain elective activity.

Initial pilot data was collected and demonstrated a potential to reduce length of stay through earlier assessment and more timely discharge. Due to the success of the initial pilot the musculoskeletal directorate was eager to continue the service and look at ways to make this a permanent solution. The service continues to run today and has been submitted as an investment proposal for permanent funding.

7. Training

7.1 The findings of the original report

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.'

The report identified a risk that as these surgeons move into the second half of their careers and reduce their caseload, this would mean fewer of the highly productive surgeons described as 'the current engines of many elective orthopaedic services'. The concern was that the cohort following them might have had less surgical experience, because of changes in training and the Working Time Directive (WTD). The report pointed to work in progress by the Manchester Academic Health Science Centre to review surgeon productivity data and assess the impact of changes in training.

Other issues identified in training were that a significant portion of younger surgeons favoured predominantly uncemented implants, so would require a period of retraining or mentoring from senior surgeons in the art of cemented fixation techniques.

7.2 The report's recommendations

The original report recommended that

- 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.
- 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.
- 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, 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.

7.3 Developments since the original report

For implementation reporting, see ORT2e on page 28, under

'Implementation reporting 1: Minimum volumes implementation (ORT2a, ORT2b, ORT2e)'.

Since the publication of the report, a key focus of work has been on highlighting the best trusts for trainees to be sent, in order to ensure they not only gain sufficient surgical experience but do so in the trusts with the best outcomes.

7.4 The change seen

On deep dive revisits, it is becoming clear that more trusts are appreciating the need to invest in staffing in order to deliver the longer term savings that will result from improving patient outcomes and quality of care, including reductions in length of stay.

Investing to save in staffing at Manchester University NHS Foundation Trust

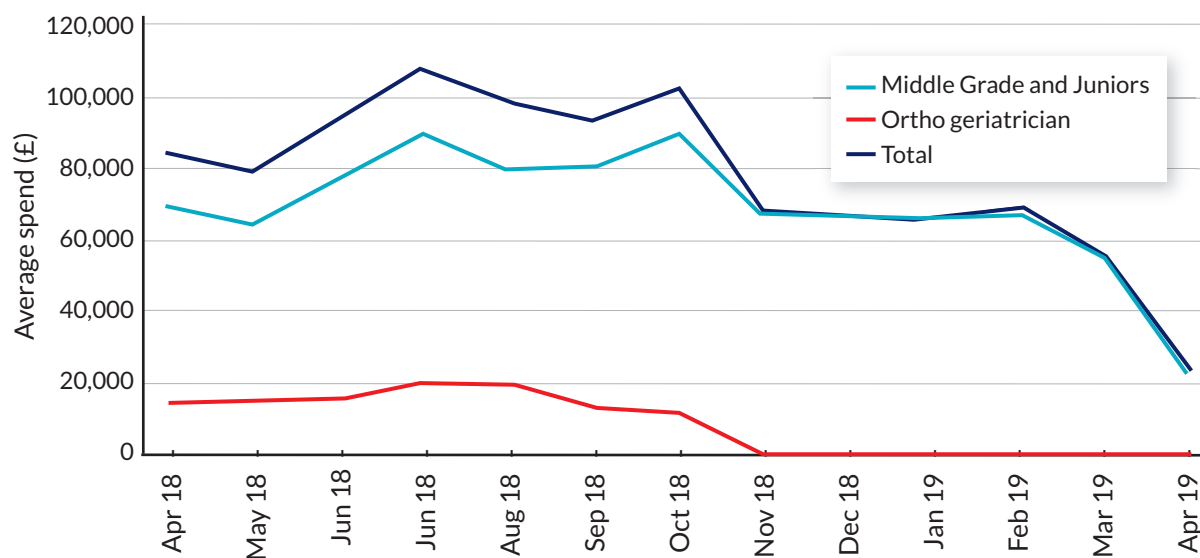
Manchester University NHS Foundation Trust invested £1million additional money into staffing and in doing so has improved patient outcomes and quality of care.

Additions to the workforce include:

- 2 Trauma Fellowship Consultants (£250k).
- 3 Middle Grade Doctors (£220k).
- Orthogeriatrics –Consultant (£130k) & Middle Grade (£80k)
- AHP support in clinics – 1.10 wte band 8A (£64k)
- AHP support to trauma consultants (£106k)
- Administrative support for the above – 2.75 wte (£64k)
- Governance Manager – 1.00 wte band 8B (£66k)
- Clinical Governance Lead – 1PA (£12k)
- Junior Doctor Clinical Lead – 1PA (£12k)
- Extended weekend trauma sessions at MRI (£50k)

This investment in staffing will in the long term produce savings, as agency spending has fallen significantly.

Trafford / MRI Agency Medical Staffing Expenditure



Source: Data provided by Manchester University NHS Foundation Trust

8. Litigation

8.1 The findings of the original report

'Litigation in healthcare has dramatically increased over the last ten years, yet remains rare given the volume of operations undertaken. However, the current potential liabilities are huge and the rise in claims is greater than the proportional increase in activity.'

'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.' (P42)

At the time of the first orthopaedic visits, the incidence of litigation in orthopaedics was rising rapidly. Orthopaedic litigation costs had risen by £30 million per annum for each of the three years leading up to and including 2011/12. The total litigation cost for the final year was approximately £180 million. Analysis of the causes of litigation indicates most are avoidable.

To allow trusts to benchmark their performance a litigation metric was created (estimated cost of claims per orthopaedic spell [£] [3 years]), with data restricted to claims where the incident occurred in the years 2008, 2009 and 2010. Both open and closed claims were included, with events described as 'incidents' removed. Estimated costs were calculated using the actual value for 'closed' claims and the calculated unit cost for 'open' claims. The total cost values for each trust for the three years (2008, 2009 and 2010) were used as numerator values for the third metric. The average litigation claim cost per spell was £59.56 with a range from £0 to £151.

8.2 The report's recommendations

The original report recommended that

- Trusts to review their litigation claims in orthopaedics for learning. (P42)
- It is proposed that a programme of work is undertaken to address rising litigation volume and costs. (P57)
- A working party has been established involving the BOA, the NHS Resolution (formerly the NHS Litigation Authority), medical defence organisations, NHS Patient Safety and leading law firms for both defence and claimants, to reduce litigation in trauma and orthopaedics within the NHS. The initial phase will look at litigation in hip and knee surgery which is responsible for 32% of all orthopaedic claims in 2007/08-2011/12. (P55)

Analysis of the causes of litigation indicated most were avoidable and the original report a programme of work to address rising litigation volume and costs.

8.3 Developments since the original report

Implementation reporting 7: Litigation implementation (ORT11a-e)

- 30.6% of applicable trusts report that clinicians and trust management assess their benchmarked position compared to the national average when reviewing the estimated litigation cost per activity. A further 61.9% have agreed to take forward this action.
- 29.9% of applicable trusts report that clinicians and trust management discuss with the legal department or claims handler the claims submitted to NHS Resolution included in the data set to confirm correct coding to that department, and inform NHS Resolution of any claims which are not coded correctly to the appropriate specialty. A further 64.2% have agreed to take forward this action.
- 31.7% of applicable trusts report that once claims have been verified, clinicians and trust management further review claims in detail, including expert witness statements, panel firm reports and counsel advice as well as medical records to determine where patient care or documentation could be improved. A further 62.3% have agreed to take forward this action.

- 33.1% of applicable trusts report that claims are compared with learning themes from complaints, inquests and serious untoward incidents (SUI). Where a claim has not already been reviewed as SUI, this should be carried out to ensure no opportunity for learning is missed. A further 61.7% have agreed to take forward this action.
- 29.6% of applicable trusts report that where the trust is in the top quartile for litigation costs per activity, GIRFT national clinical leads and GIRFT regional team managers follow-up and provide support in the steps taken to learn from claims and share examples of good practice where it would be of benefit. A further 64.4% have agreed to take forward this action.

Since the orthopaedic GIRFT report, litigation has been developed into a full workstream, led by Professor Tim Briggs and John Machin, an orthopaedic Specialist Registrar at Nottingham University Hospitals NHS Trust.

The litigation workstream has helped develop understanding of the scale of the problem facing the NHS. The projected cost of the clinical negligence scheme is £2.4billion for 2018-19, over 2% of the NHS budget in England and marking a 105% increase in cost from 2014-15. The impact of this is felt in trust finances, with one trust paying over £40million per year, a third of their deficit, to cover litigation.

The GIRFT team has worked with NHS Resolution to drill down into the top reasons for litigation in orthopaedics: unsatisfactory outcome to surgery, judgement/timing, tissue damage, mobility, interpretation of results/clinical picture; all of which are potentially preventable.

Data on litigation claims was included in data packs shared with trusts before deep dive visits. It was also shared with the heads of trusts' legal departments and senior managers as part of the GIRFT and NHS Resolution Litigation in Surgical Specialties data pack covering all the surgical specialties. These packs allowed trusts to benchmark their performance and facilitate learning from claims notified 2012/13-2016/17. The pack also separated spinal surgery claims from orthopaedic and neurosurgery claims recognising the impact of this high cost sub-specialty within orthopaedics.

Trusts were asked to complete a 'five point plan' by using their data pack.

1. Clinicians and trust management to assess their benchmarked position compared to the national average when reviewing the estimated litigation cost per activity.
2. Clinicians and trust management to discuss with the legal department or claims handler the claims submitted to NHS Resolution included in the data set to confirm correct coding to that department. Inform NHS Resolution of any claims which are not coded correctly to the appropriate specialty via CNST.Helpline@resolution.nhs.uk
3. Once claims have been verified clinicians and trust management to further review claims in detail including expert witness statements, panel firm reports and counsel advice as well as medical records to determine where patient care or documentation could be improved. If the legal department or claims handler needs additional assistance with this, each trusts panel firm should be able to provide support.
4. Claims should be triangulated with learning themes from complaints, inquests and serious untoward incidents (SUI)/serious incident (SI) and where a claim has not already been reviewed as SUI/SI we would recommend that this is carried out to ensure no opportunity for learning is missed.
5. Where trusts are outside the top quartile of trusts for litigation costs per activity GIRFT we will be asking national clinical leads and regional team managers to follow up and support trusts in the steps taken to learn from claims. They will also be able to share with trusts examples of good practice where it would be of benefit.

An NHS Resolution and GIRFT orthopaedics working party has worked with expert contributors from British Hip Society, British Association for Surgery of the Knee and the British Orthopaedic Association, NHS Patient Safety, NHS panel law firms, claimant law firms, expert witnesses and the medical defence organisations to develop professional standards guidance for hip and knee arthroplasty documentation. The guidance documents provide advice on aspects of surgery that should be available and clearly document in a hip or knee arthroplasty operation record.

The guidance documents on learning from clinical negligence claims are available from the GIRFT website at: www.gettingitrightfirsttime.co.uk/litigation



Litigation

Trust A

- On initial receipt by the trust of the GIRFT data pack, it was apparent that the orthopaedic speciality was of concern and that this speciality required immediate focus.
- As a direct result of the findings in the data pack, the clinical lead of orthopaedics undertook a review of the claims data from the past five years and presented his findings to the Audit/Quality Improvement meeting, which included the orthopaedic clinicians and the Acting Medical Director, on 20 March 2018.
- As part of the presentation, a range of cases were used as examples and the review of the main areas of concern was discussed, with the lessons to be agreed.
- Since the production of the data pack and the review undertaken by the clinical lead of orthopaedics, the trust now holds monthly audit/quality improvement meetings to ensure that the focus on the areas of concern identified is maintained.

Trust B

- Since receiving the data pack, the trust has appointed a head of legal services in order to streamline the trust's claims process and ultimately reduce the trust's medico-legal burden.
- The trust has also implemented a new process to review all new requests for disclosure of medical records. When formal notifications of claims are reported to NHS Resolution, these are immediately shared with the Patient Safety Lead, the Divisional Clinical Governance Manager and facilitators as well as with the clinical leads and staff involved, for their comments and input.
- Care and attention is given to supporting and securing input from the clinical teams and staff involved.
- Where expert opinion is critical of the care given by our staff, there is a process of reflection on any lessons that could be learnt by the individuals or teams involved including whether any practice can or should be changed.
- The legal department has undertaken a review of claims data against the national average for comparable trusts, which included an analysis of themes identified where two deep dives into the litigation were recommended.
- The data contained in the data pack was said to have provided a further layer of analysis, complementing the existing analysis, which continues to be undertaken.

8.4 The change seen

Many clinicians and managers were seeing their litigation data for the first time and there is clearly an appetite for change now that this data is being made available in an easily readable form. After the initial provider visits, a fall in claim numbers has been observed. In the context of the national clinical negligence bill increasing exponentially, orthopaedics has bucked the trend, with no rise in costs over the six year period (see Table 7).

The positive change in trauma and orthopaedics, relative to other specialties, is seen in the 2017/18 NHS Resolution annual report and accounts with the specialty falling from its historical top ranking in claims volume. It is now second, behind Casualty/A&E. The trauma and orthopaedics share of clinical negligence costs across the NHS from fell respectively, from 10% to 4% compared to 2013/14.

Our experience and the data produced by NHS Resolution suggests there has been a significant change in trauma and orthopaedic surgery compared to other specialties. Comparing the fall in trauma and orthopaedic claims to clinical claims in all specialties we see that following the global peak in 2013/14 there are an estimated 264 fewer trauma and orthopaedic claims than would have been expected based on the performance of all clinical specialties. When we use the average cost of a claim in each respective year to calculate the cost saving this translates to an estimated saving of £67.4 million.

It seems apparent that notifying clinicians of claims to facilitate and ensure learning from the incidents behind them is a key factor in the improvement of patient care and limiting future litigation costs. In addition, some specialist orthopaedic trusts have seen a fall of over 15% in their premium (over £650, 000) despite the overall cost of clinical claims rising by 30.5% to £2.2billion in 2017/18.

Table 7: Volume and cost of clinical negligence claims against trauma and orthopaedic surgery (excluding spinal surgery) notified to NHS Resolution 2012/13 to 2017/18

Year of claim Notification	No. of claims	% change in claim volume	Estimated cost of claims (including cost paid and reserve values)	% change in cost of claims
2012/13	1,467	-	£173.0m	-
2013/14	1,617	10.22	£175.9m	10.22
2014/15	1,519	-6.06	£147.7m	-6.06
2015/16	1,386	-8.76	£143.5m	-8.76
2016/17	1,261	-9.02	£162.2m	-9.02
2017/18	1,202	-4.68	£146.8m	-4.68

In response to the Litigation in Surgical Specialties data pack, 100 (65%) of the 153 trusts have completed the five point plan to learn from claims and also confirmed that they have made changes to their safety and governance processes. Examples of this are given in case study 15 above.

The GIRFT and NHS Resolution working party proposed in the initial report met and decided to focus on primary total hip replacements and total knee replacements as two of the highest volume procedures in orthopaedics which also contribute to a high volume of claims. This best practice guidance documentation is designed to provide advice on various aspects of surgery, which should be available and clearly documented in a hip and knee arthroplasty operation record.

The documents were produced from the analysis of medical negligence claims notified to NHS Resolution by NHS trusts, the experience of leading expert witnesses in orthopaedic surgery and a review of existing guidance. The complete documents including case studies should be read in parallel with the one page summaries of key points to document in each procedure. These documents are co-badged by British Hip Society (BHS) and British Association of Surgery of the Knee (BASK) respectively.

The aim of this guidance is to promote good clinical practice based on lessons learnt from previous claims and to ensure that practice is clearly documented so that in the event of a claim being brought against good clinical practice there would be sufficient documentation for the NHS to defend it in an efficient and cost-effective manner. In the future other high volume areas for claims will be reviewed based on the feedback from this guidance.

8.5 Next steps

- Refresh litigation in surgical specialties data pack to capture the corrections communicated by trusts to NHS Resolution in response to the first data pack. Trusts will be asked to repeat the five point plan for this updated data set to ensure they have been able to investigate claims as SIs and triangulate learning between claims, complaints, incidents and inquests
- Hold deep dive visits to the top five and bottom five performing providers in orthopaedics, based on the GIRFT litigation metric of estimated cost of claims over activity for a five-year period, to determine 'what good looks like' in claims handling and learning from claims and how that relates to the clinical performance/organisation of department
- Develop best practice, in collaboration with NHS Resolution, for claims handling and learning from claims, based on the experience from the litigation deep dive visits
- Work with NHS Improvement and NHS Resolution to make the national tariff allocation for each provider more representative of premiums paid and create an environment to incentivise best practice in claims handling and learning
- Improve NHS Resolution's data collection and coding to maximise clinical learning from claims at the national level
- Refine the GIRFT litigation metric into a product suitable for the NHS Model Hospital dashboard
- Distribute the hip and knee documentation guidance and review feedback, with a view to producing guidance for lessons learnt at a national level in other high volume areas
- Continue to work with the Ministry of Justice, NHS Resolution, Department for Health and Social Care and other government departments to tackle the legal factors for the rise in costs, to enable more money to be spent on frontline services

9. Surgical site infection and theatre environment

9.1 The findings of the original report

The GIRFT report found that SSI rates varied from less than 0.2% to 5%, a 25 fold variation described as ‘eye-watering’ by the King’s Fund. It was apparent in the GIRFT orthopaedic visits that in some cases the infection rates for the specialty were not known to trusts and surgeons.

The report set out the improvements that could be achieved through ring-fenced beds, the theatre environment and hot and cold sites. Further details on the implementation of these is provided elsewhere in the report.

The GIRFT visits heard that clinicians routinely raised concerns about the theatre environment and lack of discipline. In some hospitals, joint replacement was being undertaken in theatres with no laminar flow, or with staff constantly moving in and out of the theatre or not wearing masks.

9.2 The report’s recommendations

- 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

9.3 Developments since the original report

Implementation reporting 8: Surgical site infection and theatre environment implementation (ORT5a-c, ORT5e)

- 36.6% of applicable trusts report that as routine practice, walk through does not occur and excess staff are not in theatres. A further 55.2% trusts have agreed to take forward this action.
- 35.5% of applicable trusts report that dedicated experienced specialist orthopaedic scrub nurses are standard practice, and any new trainee is adequately supervised by an experienced scrub nurse. A further 57.0% trusts have agreed to take forward this action.
- 42.3% of applicable trusts report that they have dedicated orthopaedic theatres with laminar flow. A further 54.7% trusts have agreed to take forward this action.
- 35.0% of applicable trusts report that the whole theatre nursing team know the procedure, are experienced in elective orthopaedic procedures (especially joint replacement) and work regularly in teams with the orthopaedic clinicians. A further 56.8% trusts have agreed to take forward this action.

Following the GIRFT orthopaedics report, it was clear that similar issues with surgical site infection rates would arise in other surgical specialties, so a programme wide audit was established in April 2017 to review SSI rates in surgical units in England. The objectives were for frontline clinicians to:

- 1) collect data and review the rates of SSI within their surgical unit
- 2) examine the likelihood of significant complications developing following SSIs
- 3) review current practice in the prevention of SSI

Thirteen surgical specialties were included in the survey, including orthopaedic surgery, which was sent to all participating trusts, asking clinicians to record SSIs that developed following surgical procedures delivered between 1 November 2016 and 31 October 2017.

A total of 861 healthcare professionals, mostly doctors in training, registered to take part in the survey. Data was received from 95 NHS trusts, encompassing 198 surgical units in England. This was a highly encouraging level of participation for a programme in its first year. The novel approach of involving doctors in training had the additional benefits of educating future surgeons in SSI surveillance and encouraging a sense of ownership of infection surveillance amongst surgical staff, which we expect to drive both reduction in infection rates and improved collection of data.

It is difficult to interpret the results with a great deal of confidence due to the relatively low volume of responses in any specific procedure, specialty and trust. For this reason, the analysis, observations and recommendations made were limited.

Since April 2004, NHS trusts performing orthopaedic surgery have been mandated by the Department of Health and Social Care to carry out surveillance for a minimum of three consecutive months per financial year in at least one of four orthopaedic categories. Participation in other categories remains voluntary. The GIRFT SSI programme aims to complement the work of PHE by engaging frontline clinicians in the data collection process and exploring variation in surgical practice and outcomes for a wider range of procedures and specialties. We plan to conduct annual GIRFT SSI surveys allowing trusts in England to draw comparisons over time for procedures, including those procedures not currently included in the PHE programme.

The BOA has published guidance on avoiding infection, which advises trusts to verify their infection data, assess the scope for reduction of the infection rate, determine whether GIRFT recommendations for reducing infection are currently being implemented and develop a plan to implement those recommendations. The guidance also sets out a chart of steps to discuss and address infection rates.

CASE STUDY 16

Multidisciplinary approach to reducing SSI rates in hip fracture patients

Background

Ashford and St Peter's Hospitals NHS Foundation Trust treats approximately 400 hip fracture patients per year. While participating in PHE's SSI surveillance programme, the trust received high outlier hospital notifications from PHE based on comparison of its SSI rate to the national benchmark. Local audit data suggested a 5% infection rate.

Intervention(s)

A multidisciplinary approach was taken. The whole patient journey was examined. Evidence-based modifiable risk factors for infection were identified through a review of literature and national guidelines. Multiple simultaneous changes to patient care were made with the aim of achieving an aggregation of marginal gains and lower infection rates. Interventions were:

Pre-operative

- Nutrition drinks for all patients
- Pre-operative chlorhexidine wash
- Pre-operative warming

Intra-operative

- Change of air filters in theatre
- Tighter patient temperature control in theatre
- The use of Iodine impregnated incise drapes
- Pre-operative tranexamic acid 1g IV for all patients
- Cemented implants as standard
- Glycaemic control

Post-operative

- A restrictive transfusion protocol with single unit transfusions
- An oozing wound protocol

Results

Between September 2017-18, 422 patients were treated surgically for hip fracture. Outcomes for this patient cohort compared with a patient cohort before changes to patient care were implemented illustrated that:

- Peri-operative hypothermia rates dropped from 44% to 3%.
- Transfusion rates dropped from 28% to 18% and the mean number of units transfused in these patients dropped from 1.8 to 1.1 units. Tranexamic acid usage improved from 35% to 75%.
- Cemented implant usage increased to 83.2%.
- Mortality rates dropped to 4%.
- Mean length of stay dropped from 15.7 to 13.8 days.

Early infection rates dropped to 0.24%. Up to 20 infections were potentially prevented. GIRFT estimates the cost of one deep SSI to be £100,000. This project therefore potentially saved up to £2 million as well as improving patient care and outcomes.

Discussion

The results achieved above were only possible because of engagement from the whole of the wider MDT involved in the patient journey. An MDT approach using the theory of the aggregation of marginal gains can have a significant impact on patient care.

CASE STUDY 17

Reducing Surgical Site Infection rates across Newcastle upon Tyne Hospitals NHS Foundation Trust

In a 2016 GIRFT deep dive visit, it was identified that the trust had high surgical site infection rates across orthopaedic and neurosciences spinal services. Over the last three years, the trust has introduced measures to address this concern, including the introduction of antiseptic washes, introduction of care bundles including SSI prevention and strict adherence to infection prevention and control policies. The trust has demonstrated significant improvements in the reduction of surgical site infection rates as a result of these practices.

All patients are screened for MRSA pre-procedure and offered standard eradication if the test is positive. Antiseptic washes are offered for non-MRSA positive patients. Patients are provided with information leaflets and washes are continued throughout inpatient admission. Octenisan wash is now a well-embedded practice across the trust and was introduced as the default prescription (as an internal audit tool) in April 2018. This also allows patients to have a named dedicated wash, which stays with them throughout their inpatient stay. The trust is working closely with tissue viability to combine products for patients requiring emollients and Octenisan.

Antiseptic washes are electronically prescribed to ensure an audit trail, and directorate uptake is monitored. Uptake results are presented to the Directorate at the serious infection review meetings, to which they are invited as part of a rolling Programme. Appropriate remedial measures are actioned through the Directorate Action Plan.

The trust has produced care bundles for various healthcare acquired infections including SSI prevention. The SSI bundle has been in place since 2017 and provides detailed information about pre-op/intra-op and post-operative care.

9.4 The change seen

Headline trends on surgical site infections in orthopaedics are reported in Figure 8 on page 37. The GIRFT Surgical Site Infection audit also has some detailed findings.

SSIs led to re-operations in a mean of 36.2% of cases, with the rate of re-operation highest in spinal and orthopaedic surgery

where mean rates of 84.6% and 82.6% were reported respectively. Furthermore, the mean implant removal rate was 10.5% following spinal surgery infections, and 32.2% following orthopaedic surgery infections.

Post-operative follow-up arrangements vary across specialties and units. Good post-operative care supports prevention and early detection of complications. This is especially important for SSI, where early diagnosis of superficial infection can potentially prevent severe infection that may require re-hospitalisation and re-operation.

Of the trusts that participated in the SSI survey, follow-up appointments were arranged in 99% of orthopaedic cases. In several other surgical specialties, this figure was less than 65%.

Table 8: Surgical Site Infection audit - arrangement of follow-up appointment

Follow-up appointment arranged	Yes	No
Breast Surgery	100%	0%
Cardiothoracic Surgery	99%	1%
Cranial Surgery	67%	33%
ENT	100%	0%
General Surgery	65%	35%
Obstetrics & Gynaecology	71%	29%
Oral Surgery	66%	34%
Orthopaedic Surgery	99%	1%
Paediatric Appendicectomy	63%	37%
Spinal Surgery	100%	0%
Urology	79%	21%
Vascular Surgery	91%	9%

Source: GIRFT National overview report of 2017 SSI survey¹⁶

Table 9: Surgical site infection (SSI) rates by procedure

Specialty/procedure (n = number of participating trusts)	Number of SSI	Total number of procedures performed	SSI rate (%)				
			Rate (%)	95% CI Lower	95% CI Upper	Min	Max
Orthopaedic Surgery (n= 29)	130	20343	0.6	0.5	0.8	0	12.1
Elective primary elbow replacement	0	78	0	0	4.7	0	0
Elective primary shoulder replacement	6	888	0.7	0.2	1.5	0	3.6
Elective primary hip replacement	52	8603	0.6	0.5	0.8	0	17.4
Elective primary knee replacement	52	8968	0.6	0.4	0.8	0	2.9
Elective primary ankle replacement	0	93	0	0	4	0	0
Elective revision elbow replacement	0	<10				-	-
Elective revision shoulder replacement	0	47	0	0	7.8	0	0
Elective revision hip replacement	10	1028	1	0.5	1.8	0	5.3
Elective revision knee replacement	10	638	1.6	0.8	2.9	0	8.9
Elective revision ankle replacement	0	<10				-	-

Source: GIRFT National overview report of 2017 SSI survey

¹⁶ Available online at <https://gettingitrightfirsttime.co.uk/cross-cutting-stream/surgical-site-infection-audit/>

9.5 Next steps

GIRFT has provided individual and national results from the SSI survey to trusts, and has improved the survey for a subsequent collection. GIRFT has made recommendations on SSI data collection in national reports, including an intent to work with PHE to extend SSI surveillance going forwards.

GIRFT is carrying out a second SSI survey, which aims to identify the surgical site infection rates of specific procedures within 13 established GIRFT surgical specialties: breast surgery, cardiothoracic surgery, cranial surgery, ENT surgery, general surgery, obstetrics & gynaecology, oral and maxillofacial surgery, ophthalmology, orthopaedic surgery, paediatric surgery, spinal surgery, urology surgery and vascular surgery.

To date, 146 NHS trusts are participating with around 900 users registered on an online portal, which enables participants to input their data in response to a set of questions. In addition, 60 independent sector hospital sites are participating.

The survey ran for six months from May to October 2019. GIRFT is providing data for participating trusts and independent sector providers to benchmark themselves against national averages and to encourage a drive for improvement. The data will also be available for GIRFT deep dive visits and an overview will be prepared.

10. Procurement and medical device surveillance

10.1 The findings of the original report

'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'

'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 ... 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.' (P29)

'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'

GIRFT visits also found that information about the amount spent on loan kit needed to be shared amongst the surgical team.

10.2 The report's recommendations

- NJR pricing information, once issued later this year, should be closely reviewed and debated across the orthopaedic teams of individual trusts
- 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

With regards to loan kit charges, See action ORT2a under 'Minimum volumes' on page 28.

10.3 Developments since the original report

10.3.1 Increasing focus upon device safety and surveillance

The safety and regulation of medical devices has received intense global media scrutiny in the past year¹⁷, where there has also been increasing national political interest with debates in the House of Lords¹⁸ and House of Commons¹⁹ and recommendations from The Independent Medicines and Medical Devices Safety Review, chaired by Baroness Julia Cumberlege CBE DL are expected in the coming months.

Like other specialties, orthopaedics has suffered bad press through two major failures in the performance of medical devices – namely the ASR and metal-on-metal hips. These failures highlighted the weaknesses in the regulatory system, the EU Medical Devices Regulations' CE Marking system, that is expected to ensure safety to patients.

In response, NHS clinicians established the Beyond Compliance and ODEP²⁰ committees to ensure evidence for both new and existing devices is tracked and systematically reviewed providing valuable clinical feedback and early warnings on product change as well as device safety and outcomes.

Since 2002, this activity has evolved alongside the National Joint Registry (NJR), which is the most mature device level patient outcome registry of any medical specialty. The Beyond Compliance process of reviewing device and brand level outcomes data from the NJR, at the same time as capturing other company submitted evidence and clinical feedback, clearly shows the value of regular specialty and sub-specialty clinical expert review of device safety, outcomes and innovation.

Following new EU medical device regulations that entered into force on 25 May 2017²¹, there are increasing obligations on regulators, companies, providers and clinicians to track patient usage and safety more closely, as well as capture and report improved evidence of efficacy.

¹⁷ <https://www.bbc.co.uk/iplayer/episode/b0btjr55/panorama-the-great-implant-scandal>

¹⁸ <https://www.parliament.uk/business/news/2019/february/lords-debates-medicinal-safety/>

¹⁹ <https://hansard.parliament.uk/Commons/2019-02-12/debates/3F8357AD-8854-45F8-AD18-C79C720E8276/LicensingOfMedicalDevices>

²⁰ <http://www.odep.org.uk/>

²¹ <https://www.gov.uk/government/news/introductory-guide-to-new-medical-device-regulations-launched>

10.3.2 Procurement and cost reduction

Implementation reporting 9: Procurement implementation (ORT4)

37.5% of applicable trusts report that they actively engage with national programmes to reduce orthopaedic procurement costs. A further 58.7% trusts have agreed to take forward this action.

Since the original report there has been a major overhaul of the NHS procurement function, and new national Category Towers have been created to help trusts deliver better value for money. The Tower with responsibility for orthopaedics has started to support individual trusts to reduce their costs in accordance with Professor Briggs' advice.

To improve awareness of costs a pricing letter was sent out in June 2015 to all orthopaedic services so that the consultant orthopaedic workforce, senior managers and clinical directors within providers, as well as procurement staff, were at least aware of the existence of variation in pricing, and understood the variables which contribute to this. The pricing letter listed the pricing ranges (excluding VAT) of some of the most widely used implants:

Table 10: Pricing ranges listed in GIRFT pricing letter

Primary cemented hip with an acetabulum, femoral stem, and metal femoral head	£595 to £854
Cement restrictor (cemented hip)	£36.70 to £72.37
Three mixes of bone cement (cemented hip)	£123 to £270
Primary uncemented hip with an acetabulum, polyethylene liner, femoral stem and metal femoral head	£1,266 to £1,977
Primary uncemented hip with an acetabulum, polyethylene liner, femoral stem and ceramic femoral head	£1,457 to £2,219
Primary uncemented hip with an acetabulum, ceramic liner, femoral stem and ceramic femoral head	£1,636 to £2,420
Hybrid primary hip with a cemented femoral stem, uncemented cup with a polyethylene liner, and a metal femoral head	£1,097.49 to £1,399.68
Hybrid primary hip with a cemented femoral stem, uncemented cup with a polyethylene liner, and a ceramic femoral head	£1,288.45 to £1,641.58
Cement restrictor (hybrid hip)	£36.70 to £72.37
Two mixes of bone cement (hybrid hip)	£82 to £180
Primary knee replacement	£943 to £1,674
Antibiotic loaded cement (knee) (with the mixing system)	£41 to £90

Over the last few years implant choices and costs have continued to be raised at each GIRFT revisit and consequently many trusts have sought to improve their pricing and tackle other costs such as loan kit costs. Three-quarters of hospitals that responded to the GIRFT orthopaedics survey reported that they had renegotiated their contracts for implants, achieving lower prices.²¹

In the past year, GIRFT has been leading, with NHS Digital, the technical development of the NHS Spend Comparison Service, an improved version of the Purchase Price Index and Benchmarking (PPIB) tool which now includes clinical classification and brand benchmarking.



The Spend Comparison Service was launched in August 2019 and collects a monthly feed of purchase order data from all NHS trusts. The data contain the only record of all devices purchased by the NHS including orthopaedic devices, and although it needs considerable work to be useful for clinicians, GIRFT is now in a position to offer almost real-time data to trusts so they can compare themselves and identify opportunities for improvement.

GIRFT has also blended this data with clinical data from the National Joint Registry so that trusts can see the clinical outcomes they are achieving alongside their implant costs. This is a major breakthrough in NHS clinical and procurement awareness of the relationship between cost, outcomes and value where initial analysis indicates that trusts may well be paying a higher price for their prosthesis and achieving lower than average outcomes.

10.3.3 Loan kit charges

Since the publication of the report, the pricing of loan kits has improved and much of this can be attributed to increased clinical input to procurement. Trusts implementing GIRFT recommendations on minimum volumes has also had an impact on loan kit spending, as trusts undertaking a more optimal volume of a procedure are less likely to depend on loan kits. During the first GIRFT visits, there was a low level of awareness of the issue of loan kit charges, but on revisits this awareness has been much higher.

The BOA included advice on loan kits within its implementation guidance, stating that while it might on occasion be necessary to call for special equipment, that if this occurs regularly it adds both cost and risk to the procedure. The guidance calls for a decision, on occasion, on whether it is right to proceed or whether the case should be moved to a unit where the equipment is available and in regular use. The guidance also suggests that where equipment is regularly ordered in, consideration should be given to arranging a formal contract of supply or carrying out the work at another centre.

Key measures introduced by trusts have included:

- Regular review and tracking of loan kit costs
- Specific coding and tracking of loan kit costs in finance and procurement systems
- Review and renegotiation of procurement contracts, and rationalisation of the products used
- Regular reviews of consigned and owned inventory
- Additional sign-off level by senior management for loan kit usage.

CASE STUDY 18

Reducing spending on loan kits in Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust has reduced its loan kit costs from £1.8m in 16/17 to £1m in 17/18 and is on track to be £250k in 2019/20. It did this by working with clinicians to determine what needed to be on the shelf. It is aiming to reduce this even further.

See table 'Implementation reporting 1' on page 28 for more details on work to have orthopaedic equipment on shelf for a minimum of 90% of cases.

10.3.4 Medical device market trends and the NHS orthopaedic supply chain

Medical devices and orthopaedic supplies are produced by a small number of manufacturers, differentiating products slightly to maintain higher prices. Analysis shows that often manufacturing and shipping account for only 15-20% of product prices and the proportion reinvested in research and development is comparable with other industries.²³

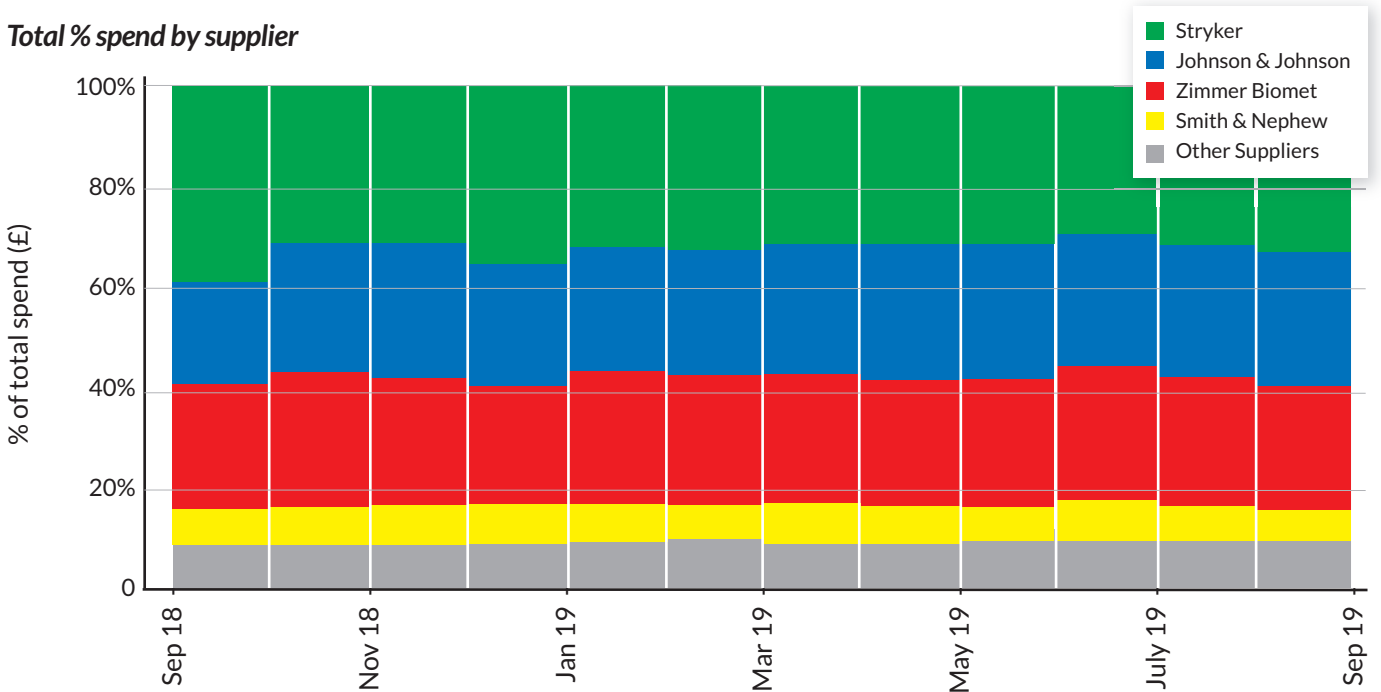
Internationally, brand loyalty of clinicians has been a key feature of supply chains, meaning that healthcare systems and group purchasers (e.g. NHS Supply Chain) have struggled to contain the growing cost of clinician's preferred items. Clinical relationships with companies have been changing, as a result of increasing concerns about company influence and the rate of product change, and companies have evolved their offers in response. Increasing price transparency has been an important response and the NHS Spend Comparison Service has been a significant step forward in enabling visibility of product and price variability.²⁴

²³ https://www.medscape.com/viewarticle/584100_2

²⁴ <http://www.jhconline.com/contracting-for-physician-preference-items.html>

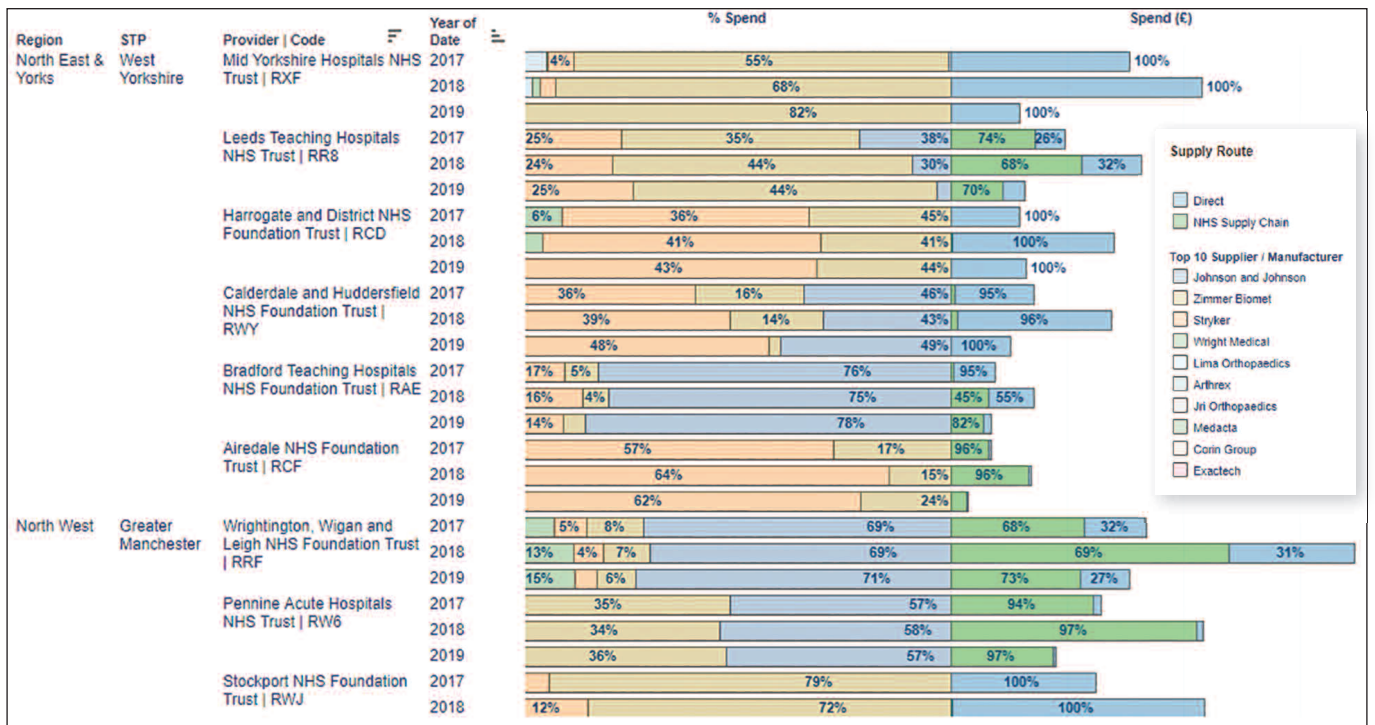
The NHS orthopaedic supply chain is dominated by four companies. Their share of the market at a national level appears stable over the past two years, but there remains significant fragmentation between trusts at an STP and regional level in specification of prosthesis choice, supplier and brand usage, as illustrated below.

Total % spend by supplier



Source: Spend Comparison Service (FY 2018-19)

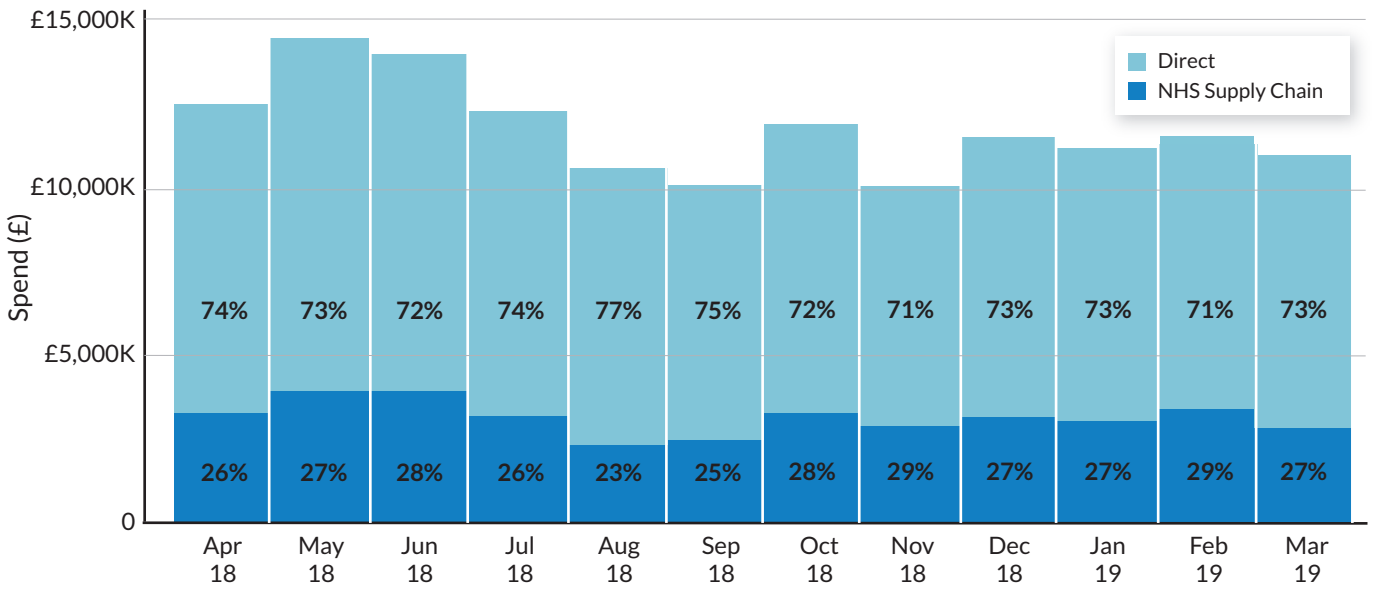
Supply base fragmentation by Provider, Supplier, NHS Supply Chain



Source: Spend Comparison Service (FY 2018-19, West Yorkshire and Greater Manchester STP's)

Around 22% of business is transacted through NHS Supply Chain and the Category Tower service provider, however the use of this supply route is also highly variable between trusts in the same STP and region.

Total % Spend by NHS Supply Chain



Source: Spend Comparison Service (FY 2018-19)

Brand and product fragmentation

Fragmentation in supplier usage is compounded at a product level where over 180 brands and 10,000 product codes were used across primary hip and knee prosthesis in the past year. Although there are emerging procurement collaborations at STP level, many commercial commitments and deals are still made at an individual provider level and are often undermined by the assumption that the status quo will be maintained by clinical resistance to review and change. It is also unclear what role fragmentation and product change have on outcomes and safety.

Top primary hip and knee prosthesis brands with price variability

Brand (Product)	Supplier / Manufacturer	Procedure Group	Product	Providers	QTY	Spend (£)	Price (£)	Min Price (£)	Med Price (£)	Max Price (£)	% Var to Min	Var to Min (£)
Exeter V40	Stryker	Primary Hip Arthroplasty	Stem	104	64,493	£25,526,973	430.0	315.0	427.0	644.0	20.8%	£5,309,556
PFC Sigma	Johnson and Johnson	Primary Knee Arthroplasty	Tray	68	17,794	£7,634,760	460.0	272.0	452.0	873.0	31.1%	£2,373,951
Corail	Johnson and Johnson	Primary Hip Arthroplasty	Stem	71	17,684	£9,788,188	569.0	410.0	517.0	925.0	23.0%	£2,252,668
PFC Sigma	Johnson and Johnson	Primary Knee Arthroplasty	Insert	85	32,035	£7,584,966	230.0	155.0	222.0	318.0	29.3%	£2,219,512
Triathlon	Stryker	Primary Knee Arthroplasty	Femoral Component	48	22,438	£12,522,659	578.0	479.0	564.0	816.0	15.0%	£1,879,581
Nexgen Option	Zimmer Biomet	Primary Knee Arthroplasty	Tray	45	18,414	£7,583,480	500.0	308.0	487.0	743.0	24.3%	£1,842,066
Pinnacle	Johnson and Johnson	Primary Hip Arthroplasty	Cup	69	15,075	£5,911,365	404.0	266.0	375.0	589.0	27.9%	£1,649,558
PFC Sigma	Johnson and Johnson	Primary Knee Arthroplasty	Femoral Component	75	25,400	£10,762,761	429.0	344.0	406.0	658.0	15.0%	£1,617,360
Interpulse	Stryker	Primary Hip Arthroplasty	Pulse Lavage	98	206,164	£4,942,869	41.88	27.4	38.45	66.87	30.0%	£1,484,312
Triathlon	Stryker	Primary Knee Arthroplasty	Tray	48	22,199	£6,244,269	322.0	220.0	316.0	484.0	23.2%	£1,449,183
Artic Delta Ceramic	Johnson and Johnson	Primary Hip Arthroplasty	Head	77	8,161	£2,784,125	355.0	162.0	318.0	603.0	49.7%	£1,383,942
ETS	Stryker	Hemiarthroplasty	Stem	44	11,591	£3,209,650	278.0	159.0	275.0	327.0	42.2%	£1,355,129
C-Stem	Johnson and Johnson	Primary Hip Arthroplasty	Stem	50	17,034	£4,904,589	314.0	217.0	297.0	555.0	25.4%	£1,246,667
Articulize	Johnson and Johnson	Primary Hip Arthroplasty	Head	83	20,300	£2,255,266	121.0	56.16	114.0	241.0	52.2%	£1,177,200
Exeter V40 Orthinox	Stryker	Primary Hip Arthroplasty	Head	102	37,823	£4,435,583	124.0	85.19	117.0	274.0	26.4%	£1,170,129
Continuum	Zimmer Biomet	Primary Hip Arthroplasty	Cup	41	6,523	£3,237,348	513.0	296.0	445.0	817.0	35.2%	£1,140,677
Vanguard	Zimmer Biomet	Primary Knee Arthroplasty	Femoral Component	28	8,823	£5,069,298	603.0	458.0	585.0	712.0	21.1%	£1,075,433
Oxford PKS	Zimmer Biomet	Unicompartmental Knee Arthropla..	Femoral Component	81	6,808	£4,072,917	599.0	427.0	585.0	869.0	24.9%	£1,015,930
V40 Alumina	Stryker	Primary Hip Arthroplasty	Head	94	11,383	£4,414,588	396.0	289.0	385.0	662.0	22.8%	£1,007,142
Trident	Stryker	Primary Hip Arthroplasty	Cup	85	18,635	£7,100,583	391.0	327.0	378.0	563.0	14.0%	£994,624
CPT	Zimmer Biomet	Primary Hip Arthroplasty	Stem	42	16,780	£5,535,265	356.0	274.0	335.0	519.0	17.5%	£970,832
MBT	Johnson and Johnson	Revision Knee Arthroplasty	Tray	66	3,125	£2,692,967	930.0	603.0	945.0	1,116.0	33.6%	£904,300
Triathlon	Stryker	Primary Knee Arthroplasty	Insert	53	23,554	£3,263,528	151.0	109.0	148.0	200.0	27.6%	£900,758
Marathon	Johnson and Johnson	Primary Hip Arthroplasty	Cup	53	9,078	£1,857,046	222.0	95.41	215.0	400.0	45.8%	£851,331
Genesis II	Smith and Nephew	Primary Knee Arthroplasty	Femoral Component	37	8,718	£5,090,045	612.0	491.0	586.0	703.0	15.5%	£789,105
Trident	Stryker	Primary Hip Arthroplasty	Liner	82	17,527	£4,108,419	241.0	185.0	225.0	393.0	18.8%	£772,442
Trilogy	Zimmer Biomet	Primary Hip Arthroplasty	Cup	44	7,277	£3,441,204	538.0	376.0	542.0	720.0	22.1%	£758,800
Pinnacle Marathon	Johnson and Johnson	Primary Hip Arthroplasty	Liner	78	11,844	£2,484,884	218.0	141.0	180.0	313.0	26.5%	£658,739

Source: Spend Comparison Service (FY 2018-19)

10.4 The change seen

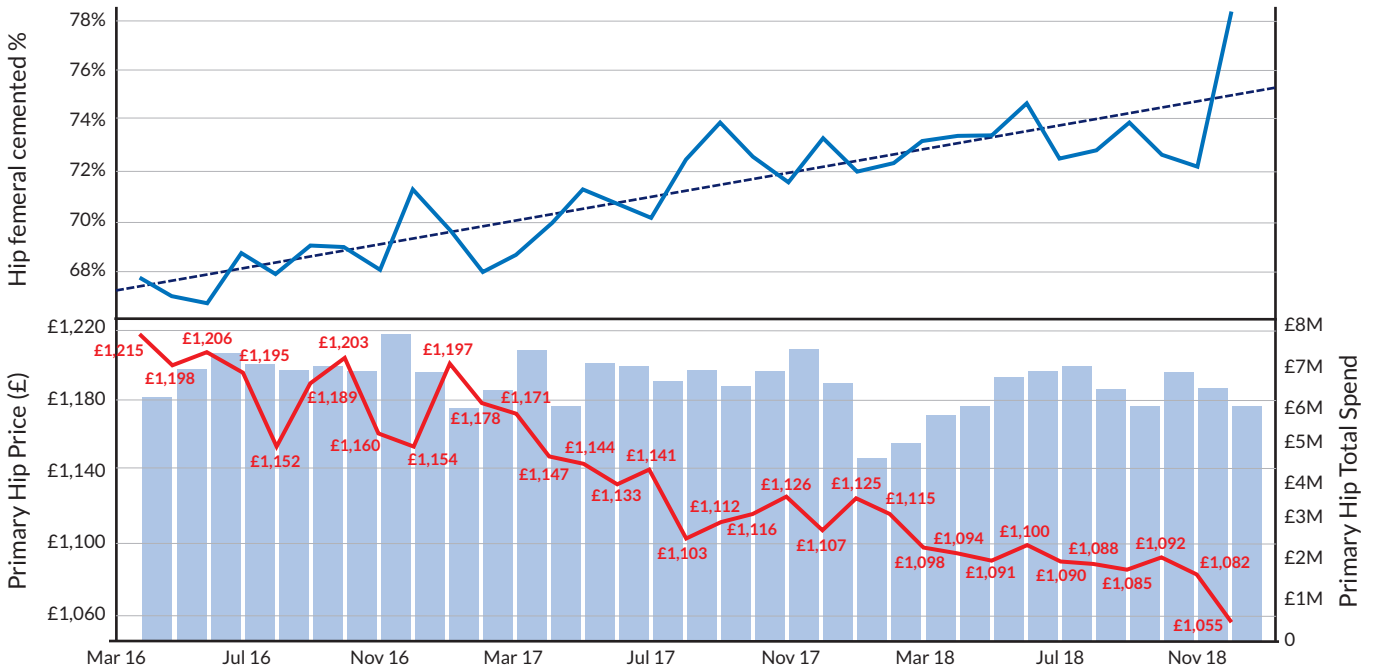
Improving clinical commercial awareness and cost reduction

GIRFT pricing analysis and initial procurement recommendations have been well received and we have noted a consistent downward trend in both average primary hip and knee prosthesis pricing during the period.

In the past three years primary hip assembly prices reduced from an average of £1,215 in 2016 to £1,055, a cost saving of £130 to £160 per hip resulting in an estimated £7.5 million to £10 million annualised saving. There has been a similar reduction in average primary knee assembly price from £1,200 to £1,100 resulting in an estimated £8.1million annualised saving.

Although there has been progress, there is still a total of £30 million price variation (16.5%) in orthopaedic hip and knee prosthesis across NHS England on £185 million annual spend.

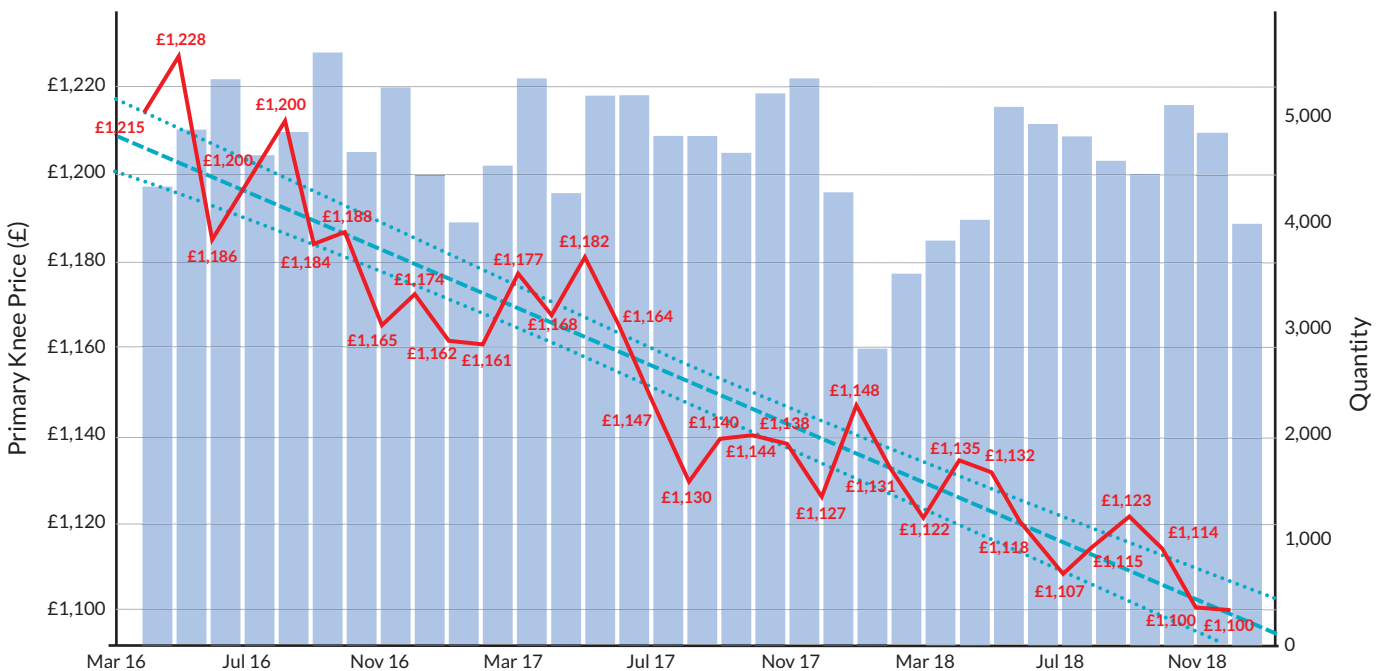
Primary hip price trend 2016-2019



Note: % Acetabular which is cemented is less clear and so this reflects more hybrid usage and slightly more fully cemented.

Source: Spend Comparison Service

Primary knee price trend 2016-2019



Source: Spend Comparison Service. Average pricing excludes variable patella component usage and price

Reducing loan kit costs

There has been a significant increase in the surveillance of loan kit usage and costs. This has led to an estimated reduction in annual loan kit costs of 16-20%, which equates to a cost reduction to trusts of £3.8 - £4.6 million or £25 million saved over five years.

It is likely that there is still a substantial opportunity remaining for trusts to reduce loan kit costs, estimated to be around £17 million per year or £85 million over five years.

CASE STUDY 19

Introduction of a single supplier for lower limb joint replacement at North Tees and Hartlepool NHS Foundation Trust.

The trauma and orthopaedics directorate at North Tees and Hartlepool NHS Foundation Trust agreed to work with the trust's procurement team to tender for lower limb joint replacement prostheses as part of the trust's cost improvement programme in 2017/18. The directorate was using a number of companies at the time and the contracts had expired. The clinical lead for lower limb surgery worked closely with the Collaborative Procurement Programme (CPP tower 4) to establish the base line for the current purchase price for the implants being used. The lower limb consultants met with the CPP to review the current costs and agreed to trial different companies.

Following the trial, the consultants met again and agreed to use the majority-preferred supplier, with all the consultants agreeing to switch to the single supplier for total primary knee replacements and total primary hip replacements. The directorate has worked closely with the company to manage the transition from trust purchased implant stock to a planned end state of a fully consigned prosthesis management system across the two hospital sites.

The outcomes of this change include:

- Significant and recurring savings from discounts, based upon agreed prostheses volumes and other consumables provided by the same company over a 4 year contract
- Improved implant materials management
- A significant reduction in the requirement for loan equipment and the associated costs through establishing agreed consignment levels and working closely with the company on managing demand for the implants (peaks and troughs in procedures scheduled.)
- A reduction in patients being cancelled on the day due to equipment unavailability
- Improved staff competencies through training and the reduction in number of implant systems requiring knowledge and competency, and through this, improved patient safety.

Lessons from the change show that clinical leadership and clinical engagement from the start of the project is paramount to ensuring success. It is important that an evaluation of the baseline is carried out, working with the clinical lead and procurement expert to ensure the full current costs of implants is captured and understood. A full understanding of the 'cost to change' is also required and this should take into account purchased stock and consigned stock values and the management of the transition. Regular performance and usage data should be presented to all those involved, to ensure agreed compliance with the contract. A project team should be established, involving procurement, materials management, operating theatres and clinical directorates. This group should have a clear objective agreed from the outset of the project.

Financial and released bed days opportunity at University Hospitals Plymouth NHS Trust

Category	Comments	Annualised Opportunity	18/19 CIP Plan
Cost Saving	Costs are explicitly removed from existing budget <ul style="list-style-type: none"> • Removal (closure) of beds • Reductions in prosthesis/implant/Med Surgical/drug costs • Reduction in clinical time (PAs), removed from Job Plans • Removal of theatre slots/overheads eg Moving EL activity to DC • Reduced cost of delivery with change to clinical practice eg drugs 	£1,441,692	£63,337
Cost Avoidance	Improvement in the metrics offsets incurrence of costs <ul style="list-style-type: none"> • Reference Cost variance (By Procedure, By Setting): £3.04m • LOS Improvements (Ward Costs): £0.85m • Reduction in WLI payments (where activity is backlog related) • Improvements to infection/readmission rates 	£4,178,065 Including Ref Costs £3.04m LOS £0.85m	£63,337
Cost Pressure	Resulting improvement results in additional costs <ul style="list-style-type: none"> • Additional staffing, including incurrence WLI Payments (MLU) • Cost of access to additional theatre/OP costs/Job Plan PAs • Use of new technology Costs (eg Urology, LOS and GLL) 	-£257,954 (Investing to save)	-
Income	Income Gain, or Mitigation Loss	£2,615,236	£378,923
Releasing Bed Days	Principally from LOS improvements Cost of LOS improvements recorded in Cost Avoidance	3,536 (9.7 beds)	-

10.5 Next steps

GIRFT is committed to improving safety outcomes, innovation and value in medical devices and to improving clinicians' access to timely clinical evidence and commercial data so they can be confident in the choices that they make.

Clinically-led surveillance of device safety, outcomes, innovation and value

The NHS Spend Comparison Service, combined with GIRFT clinical classification, has given us visibility of all brands and product codes used across the NHS. Initial reviews indicate high variation in usage, high rates of product change and often limited evidence or surveillance of outcomes.

GIRFT plans to work closely with ODEP, Beyond Compliance, HQIP, the NJR, NHS Digital / NHS User Experience (NHS X), Global Standards 1 (GS1) and trusts to facilitate evidence reviews and improve patient level traceability data in orthopaedics. We plan to establish National Clinical Technology Advisory Panels (NCTAPs) to instil a culture of regular clinician led surveillance of medical devices, with the goal of improving device safety, outcomes, innovation and value.

We will use what we learn from the orthopaedics specialty, which is advanced in both outcome registries and clinical review of data, to deliver improvements in other specialties where implantable devices are critical to outcomes.

Spend and price data visibility and clinical interpretation

Transparency of pricing, costs and opportunities will be essential to increasing value, and whereas much progress has been made with national price sharing, there are still rebates, bundling and research deals that obscure comparative costs and opportunities and that are inhibiting progress. If clinicians are to drive change through implant choice and cost, then they need access to timely and accurate data and evidence.

GIRFT is leading a collaboration with the new NHS Spend Comparison Service and the NJR to improve cost data quality and accessibility in orthopaedics and since August 2019 we have been pushing out improved pricing data and clinical classifications of devices. This is expected to continue as GIRFT makes spend and product data more useful to both clinicians and procurement teams.

We will be working with suppliers to share sales where NHS records are incomplete, and work with trusts to review rebate, bundled deal and research deals that obscure actual prices and value. We will work with the NJR to integrate their surgeon level analysis, supplier validated device classification and flags for safety alerts and ODEP ratings with the NHS Spend Comparison Service.

Clinically-led commercial review and STP value-based commitment deals

A well-known barrier to a credible competitive process is engagement with clinicians, to lead a regular commercial and competitive review, and ensure that surgical performance, patient safety and outcomes are maintained in any transition. The potential for reinvestment of savings into orthopaedic activity is a key incentive for clinicians and colleagues to achieve best value, but requires commitment from finance and procurement colleagues. The reviews should include a comparison of the merits of two contractual routes open to trusts, the NHS Supply Chain framework and direct supplier contracting. GIRFT will be supporting providers to plan and deliver these reviews and to plan for appropriate transition periods and peer-to-peer support provision.

Rationalisation to one brand or product at an STP level is possible but ambitious, and there are other measures that can effectively drive best value, including: the threat of elimination of one of the top three companies, making a significant share of business available a strategic partner, aggregating demand at an STP level, and the prospect of a multi-year commitment.

Appendix - National operational and financial opportunities

As shown throughout this report there have been many areas where the recommendations derived from the GIRFT data packs, deep dive visits and national report have had a demonstrable impact on the way in which orthopaedic surgery has been delivered. Positive change can be seen that has benefits to patients but also supports services nationally to create capacity to meet increasing demand. As has always been the intent of the GIRFT programme, improvements in clinical practice are naturally followed by efficiencies and cost savings.

Significant effort has gone into aligning the operational and financial opportunities calculations as tightly as possible with the areas looked at by the GIRFT orthopaedics workstream, including in the original deep dive visits and report, to ensure that the pertinence of the figures is robust. For example, no opportunities or savings attributable to the work done in reducing average length of stay for patients with hip fractures have been captured here as these will be attributable to other areas of work.

Throughout this section it is important to note that the financial year 2014/15 has been used as the starting year for these calculations, with finalised financial data only available up to 2018/19 this gives a five-year view of the impacts of the programme in orthopaedics. The exception is in litigation, where the data available is for 2013/14 to 2017/18, and procurement, where the data covers three years from 2016/17 to 2018/19.

Given that deep dive visits and work was taking place predating 2014/15, these figures are a likely underestimate of the overall benefits achieved by trusts over the course of the programme, but are a useful reflection of the whole-England impacts seen since the publication date of the original national report and its recommendations for implementation. In particular, the figure used to calculate the value of bed-days saved (see table note B) is highly conservative, with the real value likely much higher.

Opportunity Table

Opportunity	Comments	Life of programme value delivered (£)	Latest year value delivered (£)
Reductions in activity ^A	49,026 fewer procedures undertaken	£169.6m	£72.6m
Reductions in average length of stay	368,792 bed-days released	£110.6m	£48.3m
Avoided emergency re-admissions	4,967 emergency readmissions avoided	£12.4m	£4.1m
Increased use of daycase surgery	16,700 bed-days released	£5.0m ^B	£1.5m
Reductions in surgical site infection rates	160 fewer infections presenting	£3.5m ^C	^E
Reductions of inappropriate arthroscopies within 1 year prior to total knee replacement	2,917 fewer arthroscopies performed prior to a total knee replacement	£5.9m ^D	£2.3m
Reductions in litigation costs	Data from 2013/14 to 2017/18, showing 264 cases avoided	£67.4m	£16.8m
Savings from reductions in loan kit costs		£23m	£1.6m
Savings in procurement costs	Data for three year period from 2016/17 to 2018/19	£78m	£18.1m
Savings against medical inflation		£220.6m	^E
Total Opportunity		£696m	£165.3m

Table notes:

^A As detailed in the section on activity reduction, this analysis is limited to procedures cited by the programme as appropriate for reducing due to clinical concerns over efficacy, or those acknowledged as non-preferable as suggesting a separate failure in practice.

^B The highly conservative value of a bed-day as used by GIRFT since its inception as a programme is £300, variation in the type of bed and the cost of this across organisations makes a realistic figure hard to create, given that bed-days are not an easily cashable benefit, this conservatism with regards to valuation is appropriate.

^C Please see the section below titled, 'Reductions in surgical site infection rates'

^D This has been analysed specifically and is not included within other figures in this list

^E Opportunities from surgical site infection rates and against medical inflation cannot be meaningfully attributed to one year with current data

Reductions in undesirable activity

Reducing the number of procedures conducted in certain areas is a direct saving as it is removing the cost of care for procedures that have historically been delivered. For this analysis, only orthopaedic procedures cited by the programme as appropriate for reducing due to clinical concerns over efficacy, or those acknowledged as non-preferable as suggesting a separate failure in practice (such as revisions), have been examined and costed.

For the period 2014/15 to 2018/19 over 49,000 procedures have been reduced, accounting for a total saving of £169.6 million across the orthopaedic specialty. The greatest value is within sub-acromial decompressions with 21,000 procedures fewer undertaken to the value of £84.2 million, which indicates that the low clinical value of the procedure is being acknowledged through clinical practice. Another area where a significant value is being seen is with elective hip revisions, releasing £33.4 million, acknowledging financially that higher quality prostheses are being fitted, fixation methods are more appropriate and minimum procedure numbers for consultants are at a higher level than in 2014/15.

Reductions in average length of stay

Reducing length of stay provides patients with a better care experience by ensuring they are discharged from hospital without unnecessary delay and was a short-term measure of effectiveness in the 2015 national report. Prolonged stays in hospital are bad for patients, especially for those who are frail or elderly, as they increase the risk of adverse effects such as infection and bed sores which extend length of stay and the overall costs to care. Any reductions in length of stay create capacity in the form of bed-days and whilst financial benefits are not directly cashable (unless beds are closed and staff stood down which is not advocated within this work) it does mean that providers are able to better meet demand. Current best-practice also acknowledges that early mobilisation and normalisation are key factors in good outcomes within orthopaedic care. In short, reductions in length of stay have wide-ranging financial and care benefits.

There is evidence that nationally an average of one day has been saved per elective cemented and un-cemented hip replacement in patients aged 70 years or over, with over half a day saved from elective primary knees, shoulder and elbow replacements. Overall, over 368,000 bed-days have been released into the health service, with a productivity cost saving of over £110 million even when using extremely conservative figures for conversion. Primary knee replacements are a significant contributor to this figure with £32.8 million being released since 2014/15. It should be noted that reducing length of stay is a notoriously challenging task and to achieve average reductions of even half a day on such large volume procedures is an impressive feat.

Avoided emergency re-admissions

Emergency re-admissions within 30 days are some of the costliest hospital episodes and were highlighted as a key short- and long-term measure of effectiveness in the GIRFT national report in 2015. They are an indicator of quality of care from an initial hospital stay and financial re-imburement means that for each emergency re-admission trusts are penalised and must bear the expense of treating patients who return in an emergency within 30 days.

Rates of re-admission are never expected to become zero and traditionally have a relationship with length of stay that sees them increase if length of stay decreases. Despite the reductions in length of stay, re-admissions have remained relatively stable from 2014/15 to 2018/19. The reasons for this are multi-factorial and only truly meaningful within the scope of each particular pathway. The role of private providers, however, in undertaking more routine / simple procedures with NHS providers picking up more complex patients where the risk of re-admission is much greater, could be regarded as a potential factor in re-admissions not declining as much as perhaps was hoped for.

Despite this, nearly 5,000 emergency re-admissions have been avoided with a saving in the region of £12 million, which could be attributed to better use of discharge planning, care provided in the wider community, including rehabilitation services and identification of individual patients' risks of developing complications at the index presentation.

Increased use of day case surgery

Increasing the use of day case surgery in appropriate procedure areas decreases cost, reduces waiting times and frees beds for patients who require more complex care. The British Association of Daycase Surgeons (BADS) provides guidance on the proportion of procedures that could with appropriate management be delivered as a day case for a range of orthopaedic procedures. The analysis considers the opportunity realised since 2014/15 with over 16,688 bed-days released, equating to an opportunity of £5 million.

Reductions in surgical site infection rates

Surgical site infections are described as 'an infection that occurs after surgery in the part of the body where the surgery took place'. Public Health England (PHE) conducts a national audit annually and whilst there is a standard methodology for reporting, as with all self-reported audits there are question marks over completeness and data quality, on which PHE itself provides a good commentary.²⁵

Savings have been calculated for 2015-2018 comparing the actual rate to the expected rate had presentations for SSI remained at the rate it was in 2014. Costing for an SSI was derived from a 2017 paper which assessed the costs of SSI within the orthopaedic specialty across six European countries. Based on this there were 160 fewer infections reported than expected which equates to a value of £3.5 million saved.²⁶

Reductions of inappropriate arthroscopies within one year prior to total knee replacement

At the time of the 2015 national report's publication there existed significant variation between the numbers of these arthroscopies being performed in NHS providers. There have been 2,917 procedures saved from 2014/15 to a value of £5.9 million. There has been a significant reduction in arthroscopies within one year of a total knee replacement which shows that clinical practice is changing. This directly benefits patients and saves money on a costly and unnecessary admission and procedure.

Reductions in litigation costs

The NHS has saved over £67.4 million since 2013/14 because of fewer legal claims. As of 2017/18, trusts have seen 264 fewer claims than would have been expected if trauma and orthopaedics had followed the same trend as clinical negligence claims across the NHS as a whole.

This is a conservative estimate, as it is comparing to the global NHS trends without adjusting for the fact these global trends would be even higher if trauma and orthopaedics hadn't reduced litigation costs.

Savings from reductions in loan kit costs and in procurement costs

Trusts have used tools and data to deliver significant savings in the procurement of surgical implants. There has been a substantial increase in the surveillance of loan kit usage and this has led to an estimated annual reduction in loan kit costs of 16 - 20%, which equates to an annual cost reduction of £3.8 to £4.6 million and £23 million over five years.

Reductions in the average primary hip and primary knee assembly prices have saved trusts an estimated £7.5 million to £10 million and £8.1 million respectively over the past three years, which equates to a total of £78 million for the three year period.

These savings are recurring so trusts will benefit from this every year, and the trend of these prices is downwards so savings are expected to continue to increase.

Savings against medical inflation

It is a well-documented fact that the increase in costs in medicine do not track in-line with conventional measures of inflation. Particularly in more recent times, costs due to new technologies, greater use of novel and expensive therapies and multiple other factors mean that much higher rates of inflation are observed when medical work is concerned.

Keeping cost increases below the expected rate of medical inflation due to efficiencies and initiatives such as GIRFT has a significant impact on the overall cost of funding healthcare. The figure shown here as a saving against medical inflation is based on figures for the UK from WillisTowerWatson's report into global medical trends.²⁷

The calculation takes into account year-on-year rises in expense on a number of key orthopaedic procedures and compares those against expectation based on previous year's expenses and medical inflation. This figure does not include any aspects of inflation against litigation or procurement savings. It is obviously noteworthy that the NHS itself provides substantial insulation against large-scale cost increases due to factors such as tariff and its purchasing power. Initiatives such as GIRFT, however, also provide substantial input into limiting and even counteracting some market forces due to their focus on internal efficiencies and as such should be credited with aspects of this success.

²⁶ *Impact of surgical site infection on healthcare costs and patient outcomes: a systematic review in six European countries, Badia, J.M. et al. Journal of Hospital Infection, Volume 96, Issue 1, 1 - 15*

²⁷ <https://www.willistowerswatson.com/en-GB/insights/2018/11/2019-global-medical-trends-survey-report>



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