

# Trust compliance with best practice tariff criteria for total hip and knee replacement

Hospitals are financially reimbursed for the work they provide based on a sum recorded in the national tariff. This figure changes annually, is derived from nationally submitted cost data and forms part of the 'payment by results' system (Department of Health, 2002). In certain clinical domains an additional top-up is available for excellence in clinical practice, termed the best practice tariff. There are currently 19 clinical domains eligible for this uplift, one of which is primary total hip and knee replacement.

There appears to be widespread incorporation of the fragility hip fracture (neck of femur) best practice tariff into clinical practice (Oakley et al, 2017; Whitaker et al, 2019). However, the same is not true for the tariff for primary total hip replacement and total knee replacement. This reflects the authors' personal experiences and opinion that this domain is less well understood or known about. Moreover, the *Getting it Right First Time* report (Briggs, 2015) highlighted this as one of the key emerging themes:

**'some trusts were unaware of the financial opportunity lost by not complying with the requirements of the best practice tariff for arthroplasty.'**

It was this statement that led to the current investigation.

Chelsea and Westminster Hospital NHS Trust was formed in September 2015 following the merger of West Middlesex University Hospital with Chelsea and Westminster Hospital. Following discussion with the finance department in October 2017 it was evident that the trust had never received best practice tariff reimbursement. This was thought to relate to non-compliance with patient-reported outcome measure standards but the specific details were unknown. This highlighted a disconnect between management and clinical staff, and a wider issue of uncertainty regarding what the standards were to ensure compliance.

## ABSTRACT

**Background:** Satisfaction of the best practice tariff criteria for primary hip and knee replacement enables on average an additional £560 of reimbursement per case. The *Getting it Right First Time* report highlighted poor awareness of these criteria among orthopaedic departments.

**Methods:** The authors investigated the reasons for non-compliance with the best practice tariff criteria at their trust and implemented a quality improvement approach to ensure successful adherence to the standards (a minimum National Joint Registry compliance rate of 85%, a National Joint Registry unknown consent rate below 15%, a patient-reported outcome measure participation rate of ≥50%, and an average health gain not significantly below the national average). This was investigated using quarterly online reports from the National Joint Registry and NHS Digital.

**Results:** Initially, the trust had a 31% patient-reported outcome measures participation rate arising from a systematic error in the submission of preoperative patient-reported outcome measure scores. Re-audit following the resubmission of patient-reported outcome measure data under the trust's correct organization data service code confirmed an improvement in patient-reported outcome measure compliance to 90% and satisfaction of all criteria resulting in over £450 000 of additional reimbursement to the trust.

**Conclusions:** The authors would urge others to review their compliance with these four best practice tariff criteria to ensure that they too are not missing out on this significant reimbursement sum.

The primary aim of this study was to investigate trust compliance with the best practice tariff criteria for primary hip and knee replacement. The secondary aim was to ensure that these factors were met with resultant reimbursement to the trust. The hypothesis was that the trust had not been receiving reimbursement because of inadequate return of patient-reported outcome measure questionnaires.

## Methods

The national tariff (2017–18) for primary total hip replacement and primary total knee replacement is shown in *Table 1*. Reimbursement varies according to the recognized complications and/or comorbidities of each patient and is approximately £5000/primary joint. There is also an additional average £560 uplift if the best practice tariff criteria are satisfied (NHS Improvement, 2016a).

Trust repayment also includes a unique 'market forces factor' which is defined as 'an estimate of unavoidable cost differences between health-care providers based on their geographical location' and is applied

individually for each hospital episode, e.g. national tariff reimbursement figure x market forces factor to calculate total reimbursement per patient. For the authors' trust this is

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**Table 1. Illustration of 2017–18 national tariff reimbursement for primary total hip and knee replacement**

HRG code	HRG name	Non-best practice tariff (£)	Best practice tariff (£)	Difference (£)	Potential trust total (£)*
HN22E	Very major knee procedures for non-trauma with complications/comorbidities score 0–1	4976	5528	552	6880
HN12F	Very major hip procedures for non-trauma with complications/comorbidities score 0–1	4888	5431	543	6760
HN22D	Very major knee procedures for non-trauma with complications/comorbidities score 2–3	5336	5929	593	7380
HN12E	Very major hip procedures for non-trauma with complications/comorbidities score 2–3	5063	5625	562	7001

\*Potential trust total calculated by multiplying best practice tariff sum by the market forces factor (x1.2447).  
HRG = healthcare resource group.

**Table 2. Calculation of additional funds available for satisfaction of best practice criteria based on relevant National Joint Registry data (1 April 2016–31 March 2017)**

Hospital	Primary knee replacement*	Primary total hip replacement
Chelsea and Westminster Hospital	146	168
West Middlesex University Hospital	212	143
Trust total	358	311
Additional best practice tariff reimbursement available (£)	200 480	174 160
Total (£)		374 640
Total including market forces factor† (£)		466 314

\*Primary knee replacement surgery includes total, partial and patello-femoral joint replacement; † see text – market forces factor for this trust is x1.2447

x1.2447, leading to a total potential extra £466 314 (£374 640 x 1.2447) (assuming an average increase for meeting the best practice tariff of £560 per case) per annum if the best practice tariff criteria are satisfied for the current workload of 669 primary joints per year (Table 2).

The best practice tariff for primary total hip replacement and primary total knee replacement was introduced in 2014–15 and has seen slight modification to reach the current (2018) standards:

1. National Joint Registry compliance rate of >85%
2. National Joint Registry unknown consent rate <15%
3. Minimum preoperative patient-reported outcome measures participation rate of 50%

4. A health benefit not significantly below the national average (NHS Improvement, 2016b).

The first two standards relate to the quality of National Joint Registry data captured by a hospital and are published online in freely available quarterly reports.

Patient-reported outcome measures were introduced to all NHS-funded providers in April 2009 and allow outcomes to be quantified from a patient's perspective. At a local level, preoperative (Q1) data are collected by the hospital and forwarded on to their approved patient-reported outcome measures contractor. This contractor will then contact the patient 6 months after surgery to collect the Q2 questionnaire. At the authors' trust two separate companies were employed to provide this service:

Quality Health for Chelsea and Westminster Hospital and Capita for West Middlesex University Hospital.

Nationally, all patient-reported outcome measures data are collated by NHS Digital who relate the volume of questionnaire returns to an individual trust's workload via Hospital Episode Statistics data. Comprehensive quarterly reports are generated which can be used to determine compliance and an assessment of health gain. Finalised patient-reported outcome measures reports are also produced regularly by NHS Digital and can similarly be accessed online.

As regards the final standard of health gain this is calculated from a difference in the preoperative questionnaire (Q1) to that collected at 6 months post-surgery (Q2). The questionnaire contains three components: an EQ-5D (which measures health-related quality of life), EQ-VAS (records the patient's self-rated health on a visual analogue scale) and an Oxford Hip or Oxford Knee Score, and the same questionnaire is given at Q1 and Q2. The health benefit is calculated based on a case-mix adjustment algorithm, the details of which can be found on the NHS Digital website (NHS Digital, 2018a). A trust is considered a 'significant outlier' (criteria number 4) if it has an average health gain below the lower 99.8% control limit (three standard deviations) in any given year, or below 95% of the average (two standard deviations) for two consecutive years.

## Results

From the quarterly National Joint Registry reports it was established that the authors' trust was compliant with the first two of the required standards. The compliance rate was 93% in 2016–17 and 92% in the 2017–18 re-audit period (cf >85% standard) (National Joint Registry, 2017a). The unknown consent rate was 3% and 5% respectively for the two investigation periods (cf <15% standard) (National Joint Registry, 2017b).

Scrutiny of the finalised NHS Digital patient-reported outcome measures report for April 2016 to March 2017 revealed a Q1 return rate of 30% for total hip replacement and 32% for total knee replacement which fell short of the standard (≥50%). These data were further interrogated to establish average health gains for the individual patient-reported outcome measure metrics.

This confirmed the trust to be within the standard set but to be below the national average in all but one domain (Table 3).

A comprehensive investigation into the process revealed that the patient-reported outcome measures data for the West Middlesex University Hospital site were being submitted under its own unique organization data service code (RFW) and not that of the trust (RQM). By not updating their systems to submit data under the trust's code (RQM) their Q1 submissions were not contributing to the trust totals. This systematic error was highlighted to NHS Digital who allowed resubmission of all Q1 data for the tax year April 2017–March 2018. To enable satisfactory linkage all Q2s which had been incorrectly submitted had to be recoded under the trust's code.

The authors subsequently re-audited patient-reported outcome measure compliance using the publication of the finalised data for April 2017–March 2018 (NHS Digital, 2019). This revealed an improvement to 86% for total hip replacement and 93% for total knee replacement. The improved data quality had an effect on health gain calculation with all the total hip replacement parameters transforming to above those of the national average (Table 4).

This finding took the trust from being one of the most poorly performing for patient-reported outcome measures (ranked 285 out of 312) to 112 out of 315. It has also enabled an approximate £466 300 reimbursement to the trust for satisfaction of the best practice tariff criteria.

## Discussion

This study was devised following a key observation in the *Getting it Right First Time* report. It investigated the best practice tariff criteria for primary hip and knee replacement and ascertained the financial reimbursement related to it. The primary objective was to determine if the authors' trust was achieving these standards, and secondarily to rectify any reasons for non-compliance and ensure the reimbursement was appropriately rewarded.

The trust was non-compliant with the 50% standard set for preoperative patient-reported outcome measure submission, achieving only 30% for eligible total hip replacement procedures and 32% for total knee replacement procedures in the 2016–17

**Table 3. Comparison of adjusted average health gains between the investigation trust and the national average for each of the best practice tariff patient-reported outcome measure domains (April 2016–March 2017)**

Domain	Patient-reported outcome measure metric	England average	Chelsea and Westminster NHS Trust	Relationship to national average	Compliant (Y/N)
Total hip replacement	Oxford Hip Score	21.382	20.581	Below	Y
	EQ-5D	0.437	0.397	Below	Y
	EQ-VAS	13.137	8.996	Below	Y
Total knee replacement	Oxford Knee Score	16.392	16.344	Below	Y
	EQ-5D	0.323	0.308	Below	Y
	EQ-VAS	6.892	7.601	Above	Y

From NHS Digital (2018b)

**Table 4. Data for April 2017–March 2018 showing adjusted average health gain data confirming compliance with this standard and improvement in relation to the national average**

Domain	Patient-reported outcome measures metric	England average	Chelsea and Westminster NHS Trust	Relationship to national average	Compliant (Y/N)
Total hip replacement	Oxford Hip Score	22.138	23.699	Above	Y
	EQ-5D	0.460	0.538	Above	Y
	EQ-VAS	13.530	15.147	Above	Y
Total knee replacement	Oxford Knee Score	16.971	16.442	Below	Y
	EQ-5D	0.338	0.322	Below	Y
	EQ-VAS	7.938	7.610	Below	Y

From NHS Digital (2019)

study period. The study hypothesis that the trust had not been receiving reimbursement because of inadequate return of patient-reported outcome measures questionnaires was therefore accepted. This shortcoming had arisen from data from the sister hospital (West Middlesex University Hospital) not being submitted under the correct trust code and therefore not contributing to the Q1 totals. These data were resubmitted under the correct organization data service code for the financial year resulting in retrospective payment for the whole year (2017–18).

The main limitation of this study could be its relevance to patient-reported outcome measure handling by other trusts. It may well be unusual to have two separate parties managing this for a single trust and certainly led to the confusion

reported here. Indeed, rationalising this to a single provider would be preferable and has now been implemented. However, this situation may not be unique as many hospitals have merged to form foundation trusts and some may well have retained their alternative provider for historical or contractual reasons.

In January 2019, NHS England and NHS Improvement published a consultation notice that the criteria for many best practice tariffs would change for 2019–20 (NHS Improvement, 2019). A significant amendment has now been passed for this best practice tariff such that at least 80% of patients aged 70 years or over are required to have a cemented or hybrid total hip replacement. This introduction is likely to cause some consternation among centres which use predominantly

## KEY POINTS

- The best practice tariff for primary hip and knee arthroplasty provides approximately £560 of additional reimbursement per patient above the baseline tariff.
- Four criteria must be satisfied to achieve the tariff: two relate to the quality of data submitted to the National Joint Registry, and the other two relate to standards of patient-reported outcome measures.
- The *Getting it Right First Time* report highlighted that many trusts were unaware that there was a primary hip and knee replacement best practice tariff and were therefore missing out on this remuneration.
- It is vital that surgeons are aware of the criteria and keep updated with any changes to them.
- From January 2019 the criteria have been revised to include the use of cement or hybrid fixation for more than 80% of total hip replacements in patients over 70 years of age.

cementless fixation for their implants. It further highlights the importance of clinicians keeping abreast of such guideline developments in their field if they are to be assured to remain compliant.

## Conclusions

This investigation highlighted an easily rectifiable issue and enabled significant retrospective and prospective reimbursement to the trust. The authors would strongly urge others to familiarise themselves with the best practice tariff criteria not only in this field but also in any of the other relevant 18 clinical domains. **BJHM**

*Conflict of interest: none.*

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# HOSPITAL MEDICINE

## Quality improvement projects

**Quality Improvement**

**Quality improvement in perioperative medicine: driving the revolution**

**ABSTRACT**

The authors describe the implementation of a quality improvement project in perioperative medicine at a tertiary care hospital. The project was led by a multidisciplinary team of clinicians and supported by a dedicated quality improvement team. The project focused on reducing the length of stay in hospital for patients undergoing elective hip and knee replacement surgery. The project was successful in achieving its aims and resulted in a significant reduction in the length of stay for these patients. The authors discuss the challenges faced during the project and the lessons learned. The project was published in the British Journal of Hospital Medicine in September 2019.

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**Quality Improvement**

**Communication between primary and secondary care**

**ABSTRACT**

The authors describe the implementation of a quality improvement project in communication between primary and secondary care. The project was led by a multidisciplinary team of clinicians and supported by a dedicated quality improvement team. The project focused on improving the communication between primary and secondary care for patients with complex medical conditions. The project was successful in achieving its aims and resulted in improved communication between primary and secondary care. The authors discuss the challenges faced during the project and the lessons learned. The project was published in the British Journal of Hospital Medicine in September 2019.

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