



# briefing

June 2010

## FTN Benchmarking

### Driving performance improvement in **orthopaedics services**

#### Key points

- 15 trusts took part in FTN's fourth orthopaedics benchmarking project between May and September 2009.
- Key drivers of costs and efficiency were prosthetics costs, theatre use, staffing and length of stay.
- A third of actual theatre time was lost due to late starts and early finishes (18 per cent and 15 per cent respectively).
- Trusts showing a high proportion of patients with day of surgery admission (DOSA) rates had lower than average length of stay for patients, driving down ward costs.
- Early patient mobilisation after surgery also helps in driving down the average length of stay. This often depends on the availability of physiotherapy.

A group of 15 Foundation Trust Network (FTN) member trusts took part in a benchmarking project, delivered with support from McKinsey & Company, to identify how they could improve their orthopaedics services by analysing costs and comparing performance.

#### Background

The project collected, analysed and compared data on cost and efficiency, set against quality measures, to help participants identify the underlying reasons for performance differences and improvement opportunities for each trust.

#### The benchmarking process

Participants established a project team with a clinical, data and service manager lead, and a board-level sponsor to oversee the project.

Following an initial scoping phase, trusts attended a workshop where the template for collecting data was discussed in detail. In this fourth study, data collection for full cost build up by the healthcare resource group (HRG) included primary hip replacement cemented (H80) and primary hip replacement uncemented

(H81), as well as primary knee replacement (H04).

During the data collection period and subsequent data validation, the FTN Benchmarking team ensured trusts were collecting comparable data. Participants collected activity, staffing, departmental and quality data from April 2008 to March 2009 in addition to detailed two-week theatre diaries.

A findings workshop provided an opportunity to discuss data findings as a group, share learning resulting from different practices and identify improvement opportunities. Trusts presented on aspects of their services that the benchmarking study identified as high performing. Individual trusts developed their own six-month action plans during the findings workshop. In the six-month review workshop all trusts

presented on the progress made in the implementation of their action plan, the challenges faced and lessons learned during the process.

## The findings

The final analyses from the benchmarking study focused on prosthetics, theatre use, ward costs and quality by HRG code. For the HRG groups H04 (primary knee replacement) and H80 (primary hip replacement cemented) the majority of trusts were operating close to, or below tariff. For H81 (primary hip replacement uncemented) half the trusts were incurring costs in excess of tariff income.

It was noted that with the move to HRG 4.0 coding in 2009/10, trusts would see a reduction in tariff income for the majority of procedures. The coding structure for HRG 4.0 is further sub-divided depending on co-morbidity and complications, all of which have cost implications, thus making accurate coding essential to maximise income.

### Prosthetics

Trusts reported that prosthetic costs for primary hip replacement uncemented procedures (H81) accounted for a mean of 36 per cent of the market forces factor (MFF) adjusted tariff income, compared to 27 per cent for primary hip replacement cemented procedures (H80) and 26 per cent for primary knee replacement (H04).

Variation in prosthetic costs between trusts was greatest for hip replacements, both H80 and H81, ranging from 9 per cent to 50 per cent of the MFF adjusted tariff income. Prosthetic costs did not vary as widely for H04, ranging from 17 per cent to 36 per cent of the MFF adjusted tariff income (see Figure 1).

### Theatre use

For all participating trusts, the average procedure time accounted for 45 per cent of used theatre time. The remaining 55 per cent of theatre time was made up of late starts (18 per cent), early

finishes (15 per cent) and delays/changeovers (22 per cent) (see Figure 2).

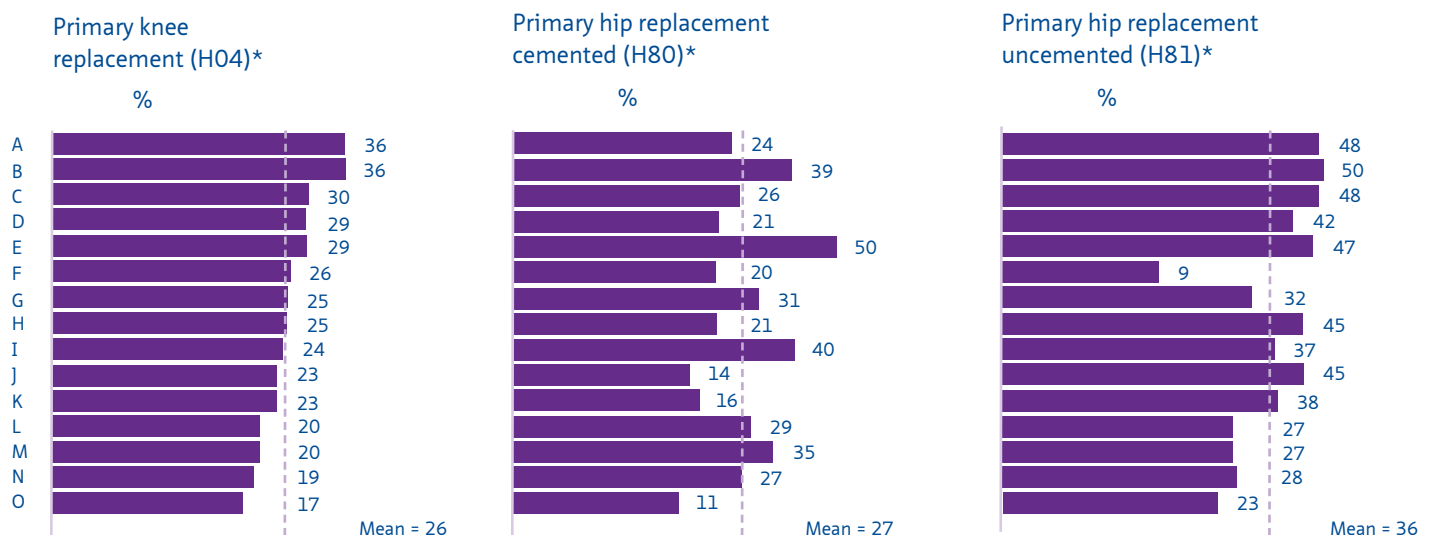
Cancellation rates on the day of surgery ranged from 2.6 per cent to 17 per cent. Average cancellation rates before the day of surgery were much greater, ranging from 2 per cent to 57 per cent. However, most trusts were able to re-book 80 to 100 per cent of these cancellations.

Theatre staff configuration for a typical joint procedure was consistent across most participating trusts. However, there was variation in the proportion of extra theatre time (for waiting list initiative lists), from zero to 50 per cent for nurses and from zero to 25 per cent for consultants.

### Ward costs

The length of stay (LOS) is a major factor influencing cost per spell. Average LOS (6.9 days) varied across trusts between 4.8 and 8.9 for H80, with minor variations between HRGs.

**Figure 1. Prosthetic costs as a percentage of income**



\*Calculated as average prosthetic cost/(2008/09 tariff x MFF)

There was a clear inverse relationship between the average LOS and the levels of day of surgery admission (DOSA). Trusts reporting 100 per cent DOSA also showed the lowest average LOS.

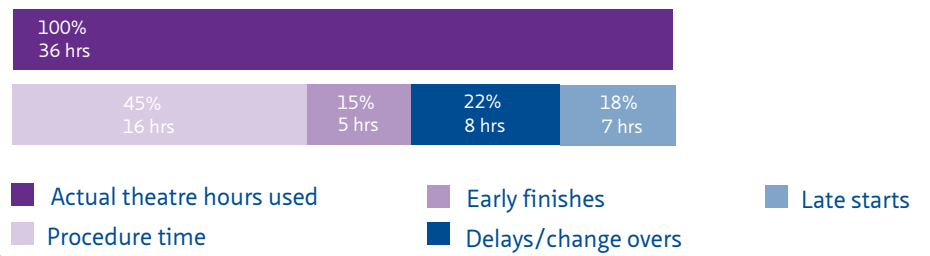
The average daily ward cost per bed varied significantly between trusts, the mean for all participants was £140. Ward nurse pay costs accounted for the majority of this expenditure.

Ward nurse cost reflects both nurse grade mix and the use of bank and agency nurses. High use of bank/agency staff contributes towards high ward nurse costs but allows for flexibility.

### Quality

The average LOS seemed to be affected by weight bearing mobilisation rates. Trusts with the shortest average LOS also mobilised their patients earlier.

**Figure 2. Breakdown of scheduled theatre time in orthopaedic theatres – weekly average**



Trusts using spinal anaesthesia for over 80 per cent of procedures, minimising the nausea and vomiting associated with general anaesthetics, also reported lower LOS than the mean for each HRG.

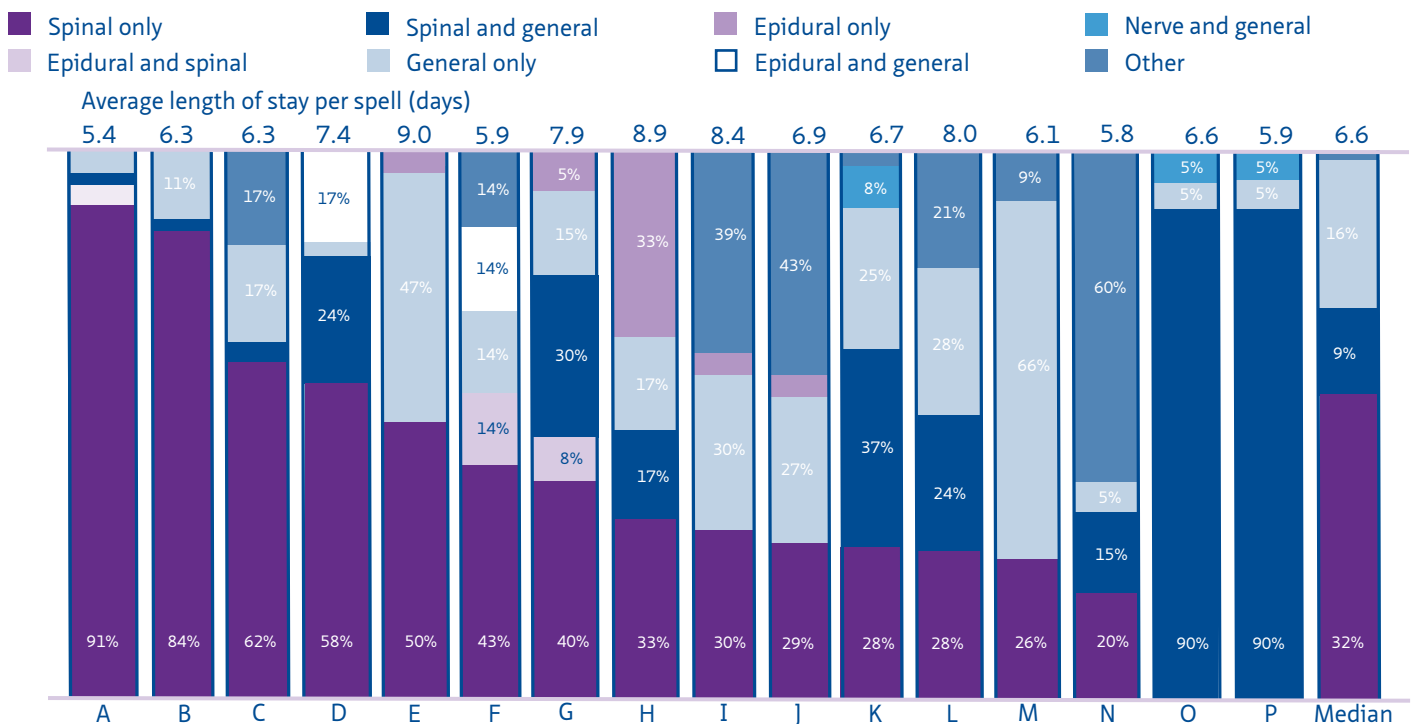
There are significant differences in the level of emergency readmissions within 28 days of discharge between trusts from 0.9 per cent to 4.8 per cent of all elective admissions. These variations are widest when analysing by HRG code. Some trusts have a readmission

rate of close to one in ten patients for primary knee replacements. The readmission rate does not seem to correlate with initial LOS after surgery.

### Actions

The trusts involved in the project used the findings from this project and the shared learning at the workshop to prioritise improvement initiatives. The following actions were noted during discussions as key to future developments:

**Figure 3. Types of anaesthetic – primary hip replacement cemented (H80)**



### Prosthetics

- review prosthetic and consumable costs to improve procurement contracts
- review the use of loan kits and bespoke prosthetics to ensure that the additional cost is justified.

### Theatre use

- review theatre scheduling to reduce late starts and early finishes
- explore the adoption of longer lists to increase throughput
- improve cancellation rates to improve theatre use, reduce additional costs and improve patient experience.

### Ward costs

- review the nursing levels in wards, especially focusing on the use of bank/agency staff

- investigate the reduction of LOS by increasing DOSA. This would also improve patient experience
- explore increasing the availability of physiotherapists outside standard hours to improve patient mobilisation after surgery and reduce the LOS
- ensure that co-morbidities and complications are coded correctly to maximise income.

### Review workshop

The key service improvements achieved by trusts during the six months after the findings workshop included:

- development of department dashboards, which resulted in consultant awareness and involvement in performance

- use of benchmark measures provided by the project to review staff costs and adjust staffing levels
- significant increase in the proportion of patients with day of surgery admissions, which resulted in increased throughput
- a dramatic reduction in the average length of stay driven by the increase in the proportion of patients being admitted on the day of surgery and improve patient mobilisation on the day of surgery
- review of scheduling to balance trauma and elective patients' throughput – this impacted on productivity and also reduced cancellations
- initiatives to improve tendering of prosthetics and theatre supplies by increasing clinician involvement.

## The Foundation Trust Network

The Foundation Trust Network (FTN) was established as part of the NHS Confederation to provide a distinct voice for NHS foundation trusts. We aim to improve the system for the public, patients and staff by raising the profile of the issues facing existing and aspirant foundation trusts and strengthening the influence of FTN members.

The FTN runs a series of benchmarking projects on different topics. For more information, visit [www.nhsconfed.org/FTNBenchmarking](http://www.nhsconfed.org/FTNBenchmarking) or contact Liz Smith, Benchmarking Manager, at [liz.smith@nhsconfed.org](mailto:liz.smith@nhsconfed.org)

