

Improving theatre utilisation

The challenge for NHS providers

Maximising the effective use of operating theatres has been a challenge for NHS providers for many years. There has been significant political focus for the achievement of waiting time targets, and trusts have developed many initiatives to avoid breaching these targets. This has resulted in additional expenditure which often exceeds the income due for carrying out those procedures.

NHS Benchmarking Network's 2016 benchmarking project on operating theatres showed that the majority of theatre lists started late and just under half finished early.

The NHS Benchmarking survey provides evidence that costly theatres and equipment are often under-utilised, and there are opportunities to maximise the use of these facilities, as well as the skills and time of surgeons and their teams.

Theatre management teams have traditionally worked hard to model how best to plan their operating lists to optimise the use of their physical and human resources, making use of a range of modelling techniques. However, the numbers of operations involved, the range of variations in clinical practice by theatre teams, and the complexity of case mix of patients on their waiting lists means that developing models that can handle this volume of data has been a daunting challenge.

How South Tees addressed this challenge, using predictive analytics

South Tees Hospitals NHS Foundation Trust, in common with many other NHS trusts, had established a programme of surgical pathway transformation, which was designed to contribute towards a significant financial recovery plan. Whilst this resulted in some improvements, operational inefficiencies remained, and in both 2015/16 and 2016/17, the trust failed to hit internal targets on theatre session utilisation, early starts and late finishes. The financial impact of theatre operational inefficiencies was becoming increasingly unsustainable, with 10% of activity being undertaken outside core hours, resulting in increased costs.

The Institute's webinar explains how the South Tees Hospitals NHS Foundation Trust addressed this challenge through the use of an artificial intelligence system (AI).

The system merges the data about each operation that is undertaken, including the operating surgeon and theatre timings, along with waiting list information, to plan operating lists which make the most effective use of both theatre capacity and the time of the surgical teams. During the implementation of the AI system, historic data from previous operations is entered to provide a baseline for modelling, but new operating list data is added on an ongoing basis, which works to inform the accuracy of the system models.

This has resulted in a reduction from the 2017/18 figure of 10% of theatre activity taking place outside core hours, to only 1% in the first quarter of 2018/19.

To view the **South Tees webinar**, [click here](#), ensuring you are logged into your account on the HFMA website. **Institute member only access.**