



Establishing a radiology capacity and demand model to address reporting backlogs and reduce outsourcing

Mid and South Essex Hospitals NHS Trust

Efficiency challenge

The radiology departments of the newly merged Essex Hospitals had large backlogs of examinations and were outsourcing a large volume of scans. The impact of this was seen in financial and non-financial measures:

- outsourcing and additional sessions forecast to cost about £1m in 2022/23
- clinical risk from backlog of scans awaiting report
- outsourcing of urgent and complex scans not reflecting best practice.

The solution

The radiology project manager believed that the backlogs and outsourcing was due to a gap between capacity and demand and that part of the gap could be addressed by a review of report scheduling. Workload split between consultant radiologists and advanced practice radiographers needed to maximise productivity and ensure effective use of current resources. This would identify any remaining gap and allow them to consider options to address this.

The radiology departments already collected vast volumes of data, so all data required for the analysis phases of the project was available. Existing job plans needed to be collected, collated and tabulated by type of imaging, for example CT scanning, with iteration of validation before being signed off by relevant staff.

The project was delivered from within the radiology department with support from the finance business partner and medical staffing manager.

Capacity

Rather than measuring capacity solely on number of reported scans in a session, the standard unit of work measure for a session was based on the number of scans and their relative complexity. Job

plans were analysed by an independent member of the radiology team and checked for compliance with Royal College of Radiologists guidelines. Modelling made allowance for annual leave, sick leave and study. The workload units were rigorously challenged, before being signed off by both the consultant and management teams.

Demand

A robust method of calculating absolute demand was provided by the radiology IT team. The demand modelling was updated each month and based on a 12-month rolling assessment which was checked after each monthly data collection to ensure validity of data collection.

Addressing the gap

Real-time comparisons of demand versus capacity allowed for calculations to be made on different staffing scenarios with the aim of achieving maximum productivity of current staff.

From there the team could undertake analysis on the remaining gap. By analysing demand trends they could establish a baseline capacity model and optimal skill mix. They could also consider the best financial and clinical model to cope with peaks in demand.

Impact on value and efficiency

The team developed a business case which forecast a net efficiency saving of over £250,000 per annum when fully implemented.

An upfront investment of £725,000 was required to employ a multi-disciplinary group of additional staff including consultant radiologists, a consultant radiographer, advanced practice radiographers and a ultrasonographer. Approval from the trust's executive team was on the basis that it demonstrated productivity and return on investment while improving patient care and safety.

The additional staff should all be in post by March 2023. Reduction in the cost of outsourcing and additional weekly sessions will be closely monitored to assess the speed of return on the initial investment and progress towards the total net recurring saving.

The workforce calculator continues to be updated each month to predict gaps in capacity. It can be used to calculate the short-term and longer-term impact of demand changes and show the potential saving of employing staff rather than using additional reporting sessions.

Top tips

- Involve the entire clinical team in project scoping and implementation. All team members felt that they had been consulted with and their ideas and opinions had been considered.
- Share the data at every opportunity and welcome validation and challenge from all staff.
- Calculate and measure work throughput of the entire team to address the total capacity of the department and what can reasonably be delivered. This approach avoided emotive conversations with individual team members.
- Ensure that the basis of measurement has been fully agreed by the clinicians. Many factors were considered before reaching agreement on the appropriate unit of work for a session.

To find out more

The team are keen to hear from any other organisations doing similar work who would like to share learnings and best practice.

Stephen Griffiths, radiology project manager
stephen.griffiths9@nhs.net

About the Finance Innovation Forum

The Finance Innovation Forum is an NHS Finance platform hosted by [One NHS Finance](#) for the discovery and development of problems, ideas and innovations.

It connects organisations and systems through sharing best practice and proposes changes to processes that compromise the strategic sustainability and agility of healthcare finance. The forum harnesses expert volunteers, patient-level data, NHS innovations to support the delivery of better value health and care to the patient and taxpayer.

The Forum's Innovation Programme is a mechanism to transparently collect, validate, and share NHS finance innovations. It has been established to collect, peer-review and share NHS finance innovations that allow finance teams to be more efficient and provide a better service to the rest of the organisation.

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The association also analyses and responds to national policy and aims to exert influence in shaping the wider healthcare agenda. It has particular interest in promoting the highest professional standards in financial management and governance and is keen to work with other organisations to promote approaches that really are 'fit for purpose' and effective.

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HFMA

HFMA House - 4 Broad Plain, Bristol, BS2 0JP

T 0117 929 4789

E info@hfma.org.uk

W hfma.org.uk