

Case Study

Increasing Diagnostic Activity Case Study

This case study discusses demand and capacity planning for imaging undertaken as a larger collaborative piece of D&C work across the South West London ICS.

Last updated Daniel Whitehead 10 Dec 2021

Background

This case study was undertaken as part of a system wide demand and capacity modelling project for imaging services in South West London Integrated Care System (ICS). The work was undertaken as a larger modelling project involving endoscopy and echocardiography.

The need

The need to undertake demand and capacity planning at Epsom and St. Helier was driven in two ways. Firstly, Epsom's aim to achieve a clear understanding of their current demand and capacity position, including the measurement of growth for forecasting capacity needed in the future. Secondly, as a larger piece of demand and capacity work being undertaken by all trusts in the South West London ICS for imaging, with an aim to understanding the capacity position at system level and inform the implementation mutual aid of community diagnostics hubs to increase activity in the region. Chief to this understanding were:

- A reconciliation of the current demand and capacity position at Epsom to validate the assumption the current amount of capacity being provided was sufficient to meet the demand.
- The measurement of the 'sustainable waiting list size', informing a targeted wait

time for patients by clinical urgency

- The identification of any waiting list backlogs across the imaging modalities
- An understanding of how COVID-19 has affected the demand, capacity and waiting list sizes compared to historic snapshots
- How growth over time will affect the provision of capacity, and when the theoretical scanning time is eclipsed by growth
- How Epsom and St. Helier compare to the other providers in the SWL region, and what opportunities there may be for mutual aid or increased activity via the implementation of the community diagnostic centres

SWLscope6

The solution

Working closely with the Elective Improvement Support Team (IST) and Transforming Cancer Services Team (TCST) Epsom and St Helier embarked upon a detailed review of their demand and capacity position, which included data extraction of all requests for imaging modalities as well as the transcription of the scanning schedules into the format needed by the model.

To prepare for this, a data specification (aimed to be read at a technical and operational level) was provided to the team in advance and was followed by a data workshop where all data requirements were discussed and rationalised. The teams needed to be sure that the data systems they were working with had the ability to produce the data required for the model.

The Epsom and St. Helier team (clinical, operational, informatics and transformation representatives) met each with the IST/ TCST to discuss progress and resolve any issues which had developed.

The teams went through a comprehensive process of scrutinising the demand data to ensure it was representative of the clinical service; the capacity data, transcribing the weekly schedule into a format which summarised every session which occurred within the imaging department, and the parameters, so as the Did Not Attend (DNA) rate, and cancellation rates as well.

The completed draft models for CT, MRI and US were then critically reviewed by the IST/ TCST and finalised, at which point a report was produced summarising the key finding for Epsom and St Helier as a provider, and also aggregated up into a system level view which described the demand and capacity position across South West London ICS.

CTEpsom

Costs

The demand and capacity imaging project was undertaken within the funded establishment, so no costs were incurred in terms of additional resource. The team at Epsom and St. Helier incorporated the meetings and work needed into their business as usual schedule.

To effectively run the work, the team member who needed to be involved were as follows:

Head of Imaging - providing clinical and operational expertise, supporting the prioritisation of tasks to ensure the right resources were available

Imaging Superintendents - to provide detailed expertise on the clinical pathway including capacity and schedules. Sense checking data items

Senior Improvement manager - overseeing the work from a provider perspective, escalating issues and keeping the work to the agreed timeline

Data/ systems manager - providing all data needed from the imaging data systems and doing bespoke analysis to convert the data extracts into the formats required for the modelling.

Challenges

Some of the most significant challenges in deliver the demand and capacity work were related to the data. Imaging datasets have multiple currencies for differing types of measurements, and we had to ensure that we were counting the right currency for the right thing. For example, one request to the imaging department, which will result in one attendance from the patient may have multiple exams conducting during that attendance. This means multiple body parts might be scanned during that attendance. The team needed to be sure they were only counting the request itself, and not the exam - counting the exam would result in overcounting and artificially inflate the demand.

There were additional complexities in the data extraction due to the sophisticated measurements the teams were trying to take to meet the scope, such as: diagnostic versus interventional tests; elective versus non-elective tests; splitting non-elective into emergency and inpatient requests; in-hours versus out of hours requests, etc.

Challenges around the capacity were getting to the level of detail needed for each machine and understanding how many weeks per year they were expected to run accounting for bank holidays, equipment down time and also other professional

requirements such as training sessions, etc. There were also considerations around the difference between funded scanning time versus actual operationally staffed sessions to consider.

Impact

The team at Epsom and St Helier reflected that the work produced significant impact on the way in which they considered service planning. Having a demand 'baseline' (weekly average number of requests) as part of the modelling exercise meant it was a relatively straightforward thing to understand when they were having weeks of high demand, and they could flex their capacity accordingly. This helped to ensure a smoother throughput, and a more consistent patient wait time.

The outputs were shared with the clinical team, and this helped capacity planning on a week in week out basis. Clinical teams have also responded well to the idea of a 'sustainable waiting list size' as per the model, as this gives them a set amount of patients waiting to be aiming towards, and minimises the potential for backlog.

More generally, the team felt that this type of evidence based decision making has strengthened the operational grip on the department, and they are making maximum use of the data which is being extracted as part of their business as usual process.

The demand and capacity modelling has also informed conversations with the finance team; it is important to ensure it is clear what finances are needed to deliver a high level of patient experience for the imaging service.

Dashboard

Lessons

Reflecting on the exercise, the team commented that the support of the IST/ TCST as subject matter experts was key, and really helped in ensuring the exercise went as smoothly as it could have.

Including the Imaging Superintendents earlier in the process was something that could have been done, especially around the type of scanning capacity and way in which it was used during the week.

Next steps, sustainability and scaling

Having a series of baselines around things such as demand, removals other than treatment (ROTT), DNAs and cancellations has put the team in a good planning position, and this will be used on a weekly basis to ensure operational grip.

The local provider modelling will be scaled up and aggregated as part of the South West London ICS imaging position. This supports the standardisation of key metrics (such as acceptable DNA rates), and also supports potential mutual aid between providers. Capacity deficits and backlogs have also been factored into the plan for the community diagnostic centres, so additional capacity can be put on in the areas it is needed most to ensure good patient waiting times.

The team have consolidated the baselines from the demand and capacity modelling into departmental dashboards to help track key performance indicators on a weekly basis.

Find out more

The video case study can be located here:

<https://youtu.be/IZekmxpSRQc>



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