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1 SUMMARY

The Joint Advisory Group on Gastrointestinal Endoscopy (JAG) accreditation scheme has supported endoscopy services across the UK to focus on standards and identify areas for development.

The benefits of real-time data transparency and the opportunity for the system to proactively manage endoscopy services have been widely recognised. However, historically the paucity of data has undermined this ambition and formed part of the British Society of Gastroenterology recommendations and NHS England toolkit to improve services.^{1 2}

Data alone will not solve the problem: it is an enabler to achieve change.

The Cheshire and Merseyside Endoscopy Network has implemented Thrive (Theatre Rooms in Virtual Environments), a virtual tool to capture endoscopy activities and allow the services to access real-time data and understand their capacity and demand constraints to drive service improvements and improve patient care.

This report reviews the experience with Thrive across the St Helens and Knowsley Teaching Hospitals NHS Trust, an early adoption site, and the broader Cheshire and Endoscopy Network who have successfully rolled out the tool across the regional endoscopy services footprint.

Thrive has supported St Helens and Knowsley Teaching Hospitals to optimise its "actual in session" performance across its morning, afternoon and evening list and achieve the national standard of delivering one point for every 20 minutes of dedicated endoscopy if scheduling challenges are removed.

When scheduling is included, figures reflect the national challenge to schedule activity. NHS England and the Improving Elective Care Coordination for Patients Programme have widely identified this as a long-term risk to achieve the national elective recovery plan targets.

The regional endoscopy services, with the support of Thrive, continue to support the region to test and implement system changes and optimise scheduled activity across the Cheshire and Merseyside Endoscopy Network.

¹ The Influence of COVID-19 on Gastroenterology Services in the UK during 2020 Updated on: 19 Apr 2021 First published on 26 Mar 2021

² <https://www.england.nhs.uk/improvement-hub/publication/the-productive-endoscopy-unit/>

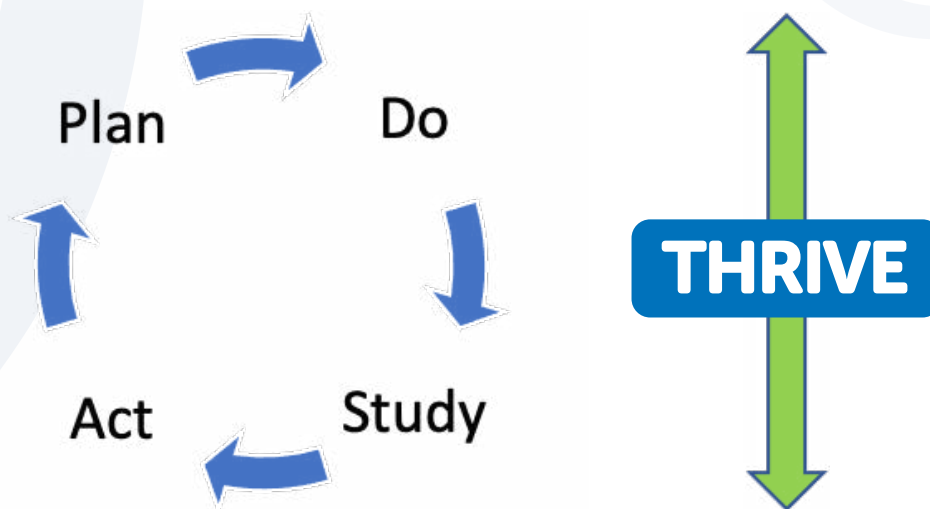
2 RECOMMENDATIONS

NHS England has identified the need to improve transparency and track capacity and demand to support endoscopy services to improve their overall performance and return to and exceed pre-pandemic activity levels to deliver the national endoscopy targets set out by NHS England.

Thrive provides a cost-effective cloud-based solution to capture and audit endoscopy performance to support services to implement and validate systematic operational improvements.

Thrive has successfully demonstrated its capability to support the Cheshire and Merseyside Endoscopy Network to help its regional services to recover from the pandemic and drive up operational performance across its core endoscopy providers.

Thrive will continue to support the region to objectively implement and test scheduling reforms through a quality improvement methodology utilising Plan-Do-Study-Act (PDSA) cycles.



3 BACKGROUND

NHS England and NHS England's planning guidance states that there is a threshold of 1 per cent that a patient should not be required to wait six weeks or more for a diagnostic test for which the financial penalties for non-delivery are set out in the NHS Standard Contract.³

The pandemic has had a profound effect on the NHS, diverting resources away from planned elective care to focus on treating people with COVID-19 and the wider risks for patients and staff.

The impact of the pandemic continues to be felt. The total number of patients waiting six weeks or more in England from a referral for endoscopy was 150,394 at the end of September 2022 with 38.4 per cent waiting more than six weeks.⁴

These figures include:

- **Gastroscopy**
- **Colonoscopy**
- **Flexible sigmoidoscopy**
- **Cystoscopy**

NHS England has recognised the need to improve transparency and released a capacity and demand tool to support endoscopy services to understand:⁵

- **Demand and variation**
- **Current service provision**
- **Core capacity available to see patients and the ad hoc/flexible capacity in the system to respond to demand**

Unfortunately, endoscopy performance remains problematic with a range of local paper-based or Excel solutions underpinned by the work described by NHS England on capacity modelling. The system required a user-friendly systematic approach to capture and report data.

Thrive was developed to support a user-friendly systematic approach.

³ <https://www.england.nhs.uk/nhs-standard-contract/>

⁴ <https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2022/11/Statistical-Report--September-2022-PDF-638KB.pdf>

⁵ <https://www.england.nhs.uk/ourwork/demand-and-capacity/models/endoscopy-capacity-and-demand-tool/>

4 THRIVE (THEATRE ROOMS IN VIRTUAL ENVIRONMENTS)

Thrive was developed by Inform People and in association with local clinical teams in St Helens and Knowsley Teaching Hospitals and the wider Cheshire and Merseyside Endoscopy Network. The Cheshire and Merseyside Cancer Alliance provided funding for the system development and implementation.

Inform People is a company supported by the Innovation Agency. It provides a systematic approach to capture and report real-time activity aligned to the work described by NHS England. Thrive offers a standardised approach to identify opportunities to implement service improvements.

The tool is designed to operate in an endoscopy suite – referred to as a room elsewhere in this report – in endoscopy services at trust level, or in the broader endoscopy network at regional level.

It has been successfully deployed across all the Cheshire and Merseyside network sites and has been actively used to drive regional service developments and support the region to meet the JAG accreditation standards.

Thrive is independent of the core clinical systems and does not interfere with the trust digital workflow. The system is cloud-based and simple to install once agreement has been reached with a trust. The installation takes around 3/5 days and registers all the end-users prior to going live.

The company provides a full suite of virtual user guides, quick reference guides and posters that can be accessed as required to support the installation and deliver on-site training. In addition, Thrive maintain a fully supported help desk during working hours.

Once installed the system presents the user with rooms into which the user securely signs and selects the session from the prepopulated dates and sessions (morning, afternoon, and evening).

The user schedules the session based on the proposed planned caseload. The system uses the recognised British Society of Gastroenterology (BSG) guidelines, which specify weightings for specific GI endoscopic procedures, to schedule the session.

Across the Cheshire and Merseyside Endoscopy Network 12 points have been agreed for a morning list, 10 points for the afternoon list and eight points for the evening lists: 240, 210 and 180 minutes respectively. The allocations include a proportion of time for room turnaround.

Thrive supports the service to track a range of metrics, and the user can benchmark the service against the national standards for the number of points per minute. A fully optimised clinic should operate to 0.05 points per minute.

$$a/b$$

a = total points available = 0.05 points per minute
b = total time allocated

4.1 THRIVE PERFORMANCE METRICS

Once the session and proposed caseload has been entered into Thrive (see illustration 1), the user selects the session and records each individual procedure start time and end time. The status of each case is updated until the list has been completed. Embedded pop-ups appear when an activity is cancelled or delayed to capture the reason and enable further detailed reporting.

ILLUSTRATION 1: THRIVE CASELOAD OPTIONS

The screenshot displays the 'Room Monitor' interface for Room 8 on 01/12/2022. A dropdown menu is open, listing various medical procedures. The interface includes a breadcrumb trail at the top, a session time indicator, room selection buttons, and a table for patient status. A 'Room Monitor' button is visible on the right.

Breadcrumb Trail: Thrive > NHS England > Cheshir...eyside > Aintree... Trust > Aintree...spital > Aintree...oscopy > Room 8

Session Information: Afternoon (01/12/2022) As of 13:37:49 (refresh)

Room Selection: Room 1, Room 2, Room 3, Room 4, Room 5, Room 6, Room 7, Room 8

Procedure List (Dropdown Menu):

- ✓ Choose...
- Bowel Cancer Screening (Colon)
- Bronchoscopy
- Bronchoscopy + EBUS/FNA
- Colonoscopy
- Colonoscopy (Therapeutic)
- Colonoscopy with Chromoendoscopy
- Complex Upper GI Activity
- Cystoscopy
- EMR (Advanced)
- Enteroscopy
- ERCP
- ERCP (Advanced)
- ESD
- EUS + FNA
- EUS + OGD
- EUS Liner
- Flexible Sigmoidoscopy
- Flexible Sigmoidoscopy (Therapeutic)
- OGD
- OGD (Therapeutic)
- OGD + Colonoscopy
- OGD + Flexi Sig
- PEG
- Pexact
- Thoracoscopy

Room Monitor Table:

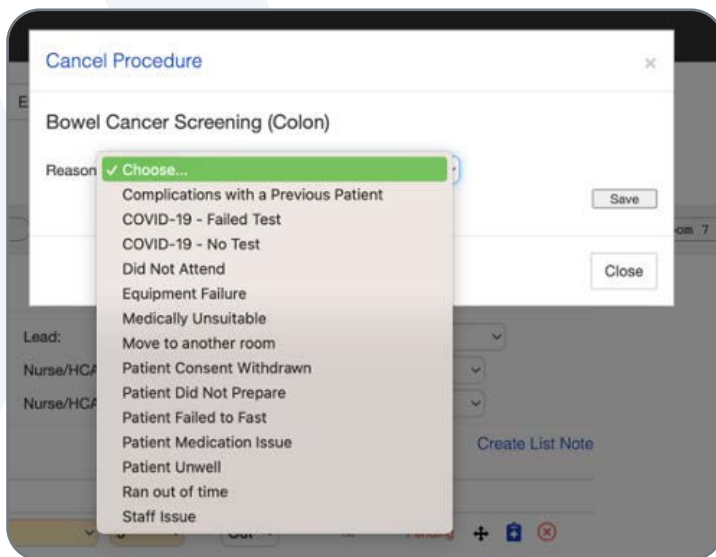
Patients	Patient	Duration	Status
5	Out	na	Pending
5	Out	na	Pending

Expected Points: 9

Thrive captures a range of metrics allowing comparisons to be drawn across services. Data captured through the Thrive digital workspace includes:

- Average list duration
- Average points per list
- Average BSG points per procedure
- Room utilisation

Thrive has embedded a range of potential routine delays for the user to select from the dropdown boxes, to inform further detailed analysis including.



It should be noted Thrive captures the lead endoscopist and nurse, however it does not routinely report on their individual performances unless this has been requested and agreed with the trust in advance.



4.2 THRIVE DASHBOARD FUNCTIONALITY

Access to reporting within Thrive is based on locations and permissions. For example, a unit manager across one trust would only have reporting and access to search within that trust. Higher access can be extended to the regional services with the appropriate permissions.

The reporting can be filtered by location down to individual rooms, date ranges, type of lists (Training, Planned, All) and list type (Morning/Afternoon/Evening).

Within the dashboard the user is presented with a range of options to explore:

ILLUSTRATION 2: OVERVIEW TAB IN DASHBOARD

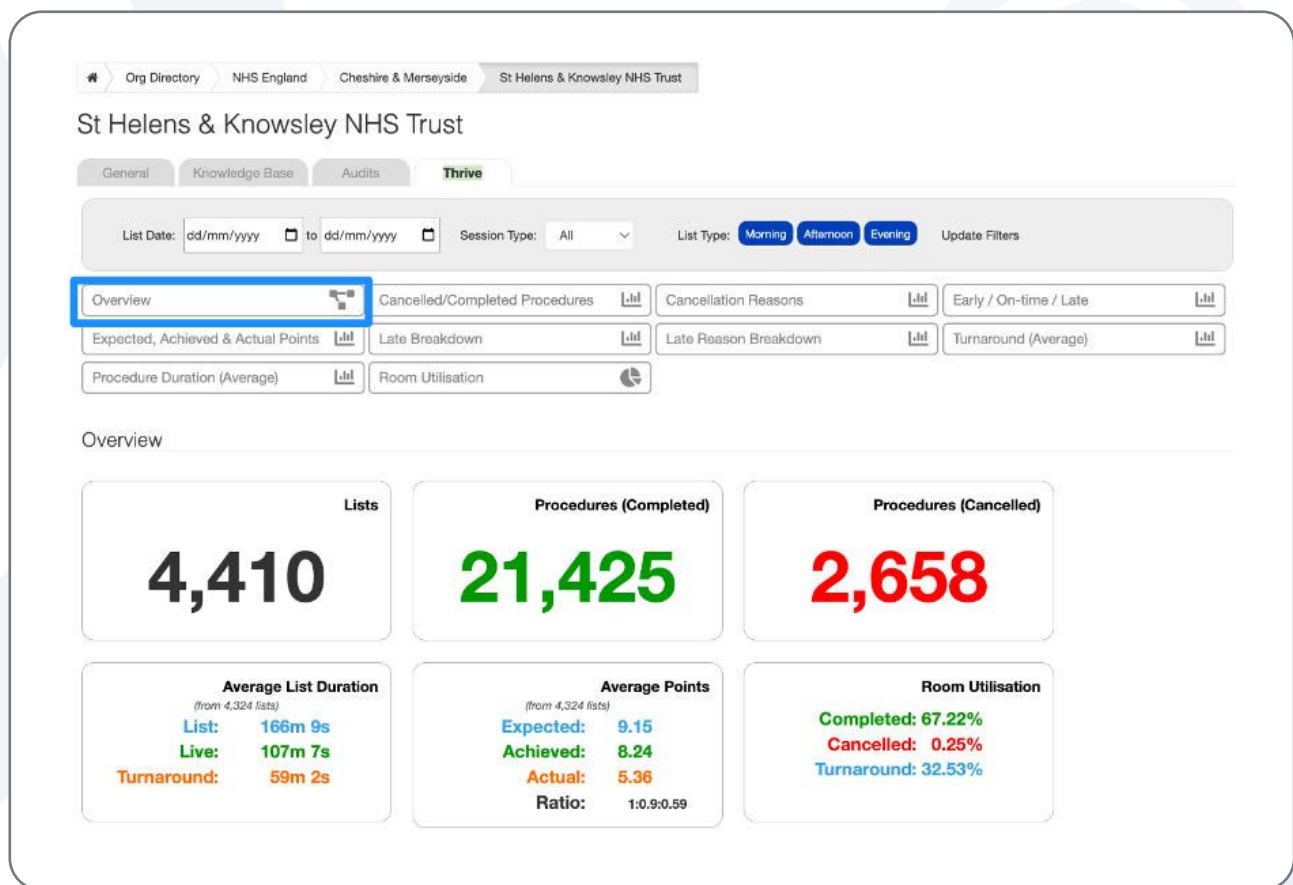
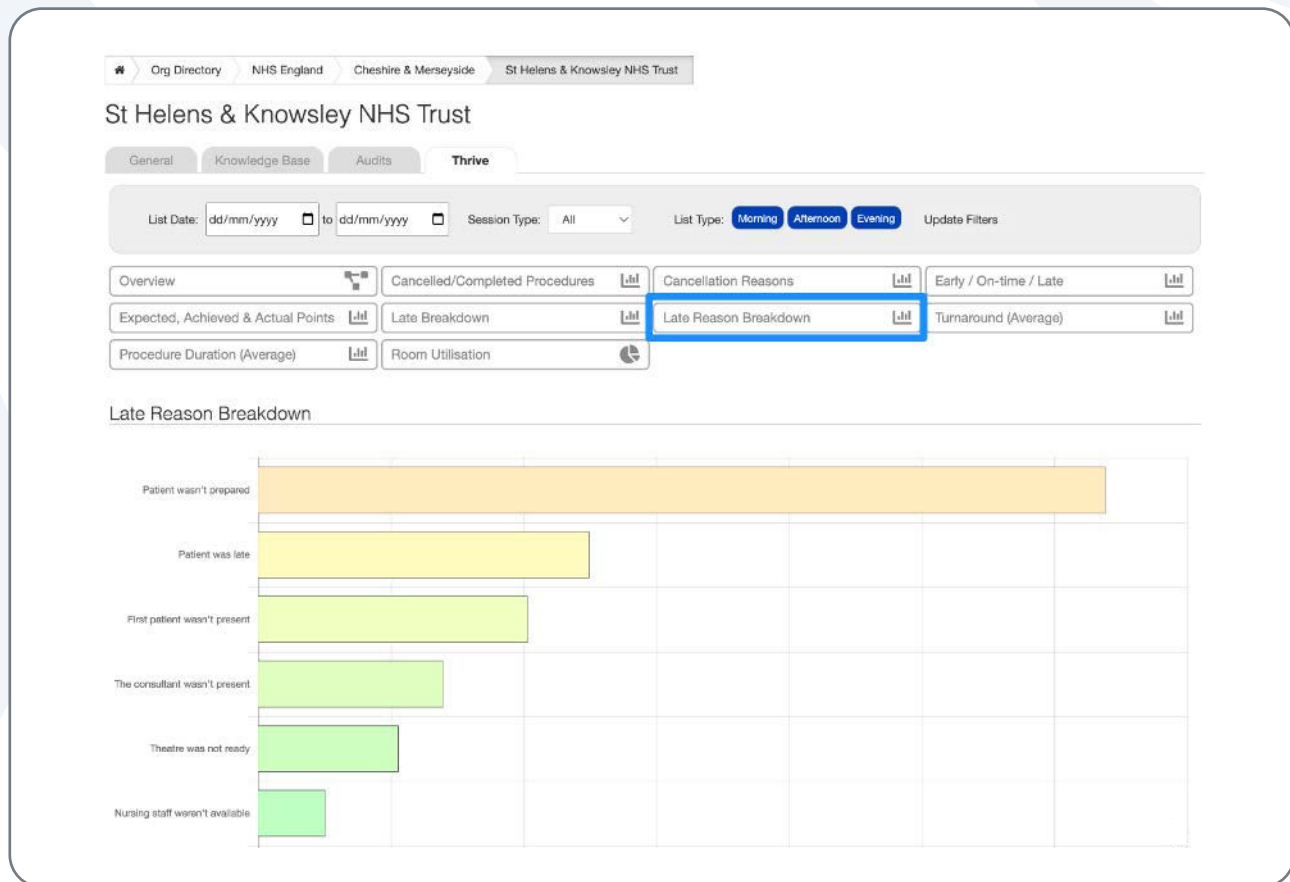


ILLUSTRATION 3: LATE REASON BREAKDOWN TAB IN DASHBOARD



Detailed Performance Reports (DPR) support services to act and optimise capacity using a systematic Plan, Do, Study, Act (PDSA) approach as recommended in The Productive Endoscopy Unit to inform improvements.

All data complies with the minimum data requirement for the JAG accreditation and can be used to support trusts to complete their JAG returns which have a material impact on trust revenue through the aligned best practice tariff and the payment bands.⁶

The JAG dataset currently needs to be extracted manually from the Thrive dashboard. However, Thrive is planning further automation to simplify the process in the future, though no firm dates are available at the time of this report.

4.3 THRIVE VALUE PROPOSITION

The Thrive costs are based on the number of registered rooms and is charged monthly at £87.50 per room.

A typical "Diagnostic Endoscopic Upper Gastrointestinal Tract Procedures, 19 years and over" attracts a Level 1 Best practice tariff of £355 per case. Optimisation of the point per clinics to maximise the net reimbursement offers a simple financial incentive to adopt Thrive.

⁶ <https://www.thejag.org.uk/Downloads/JAG/Accreditation/Guidance%20-%20evidence%20guide%20for%20UK%20services%203.1.pdf>

5 SERVICE IMPROVEMENTS REALISED BY ST HELENS AND KNOWSLEY TEACHING HOSPITALS AND THE CHESHIRE AND KNOWSLEY ENDOSCOPY NETWORK:

The Thrive data has supported the trust to:



Optimise and improve the in-session performances



Significantly reduce turnaround times across the trust



Identify pinch points across the service



Implement systematic improvements to scheduling

The graphs overleaf highlight the continued improvements seen across the trust for the past 12 months (2021/22). The graphs show performance against two different measures.

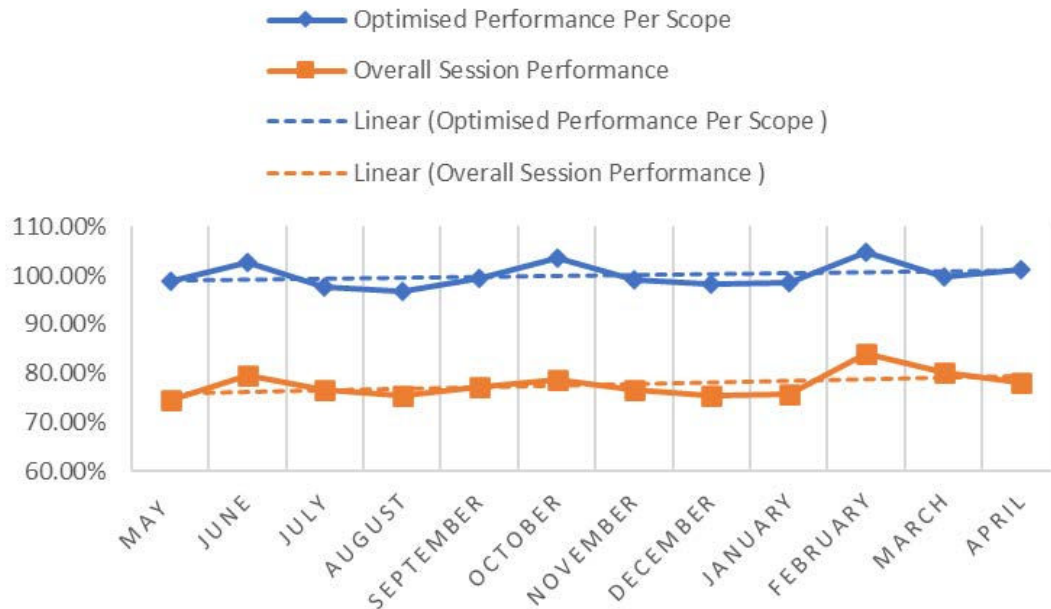
The **Optimised Performance Per Scope** blue line (—◆—) demonstrates the optimised performance per scope completed during the actual session time against the Trust target scope performance.

The **Overall Session Performance** amber line (—■—) demonstrates the optimised performance per scope completed against the total time that was available for the whole session.

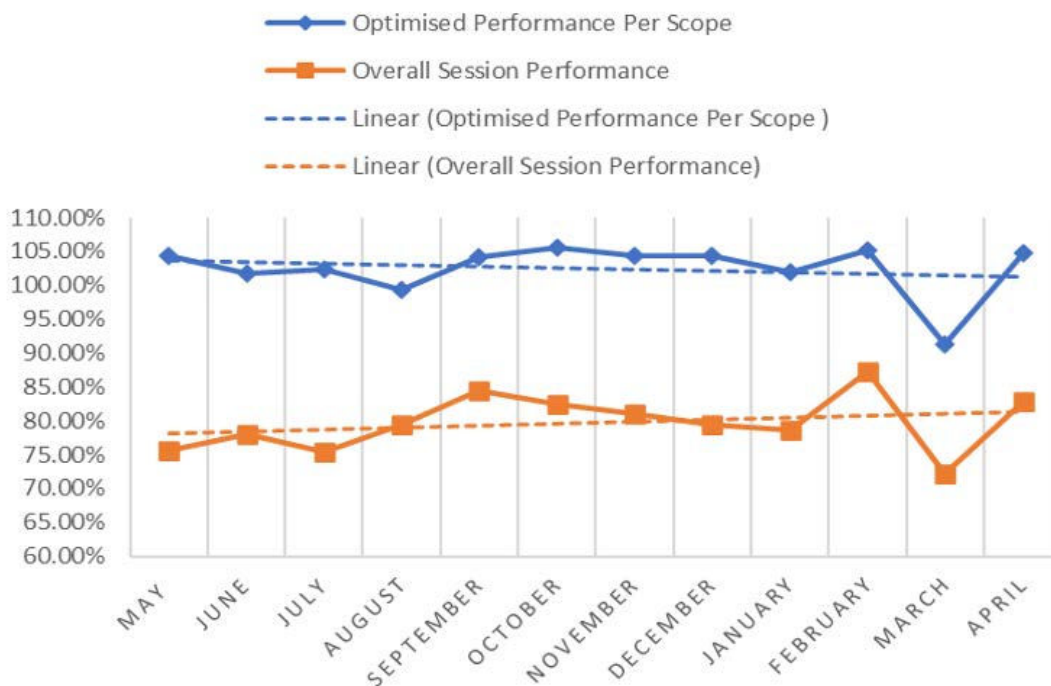


The graphs below show that the actual number of points that were achieved during the clinic duration is very efficient, with the trust target usually met or exceeded.

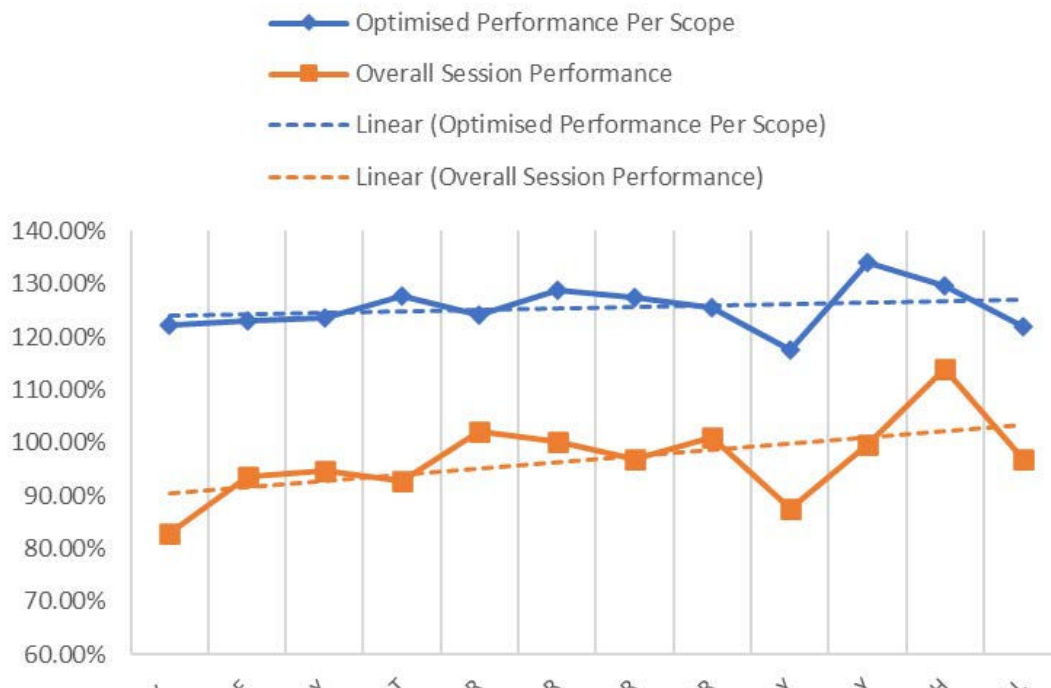
MORNING SESSION



AFTERNOON SESSION



EVENING SESSION



When the optimised performance per scope is demonstrated against the total available session time the performance however is lower than the trust target. This is due to the actual list points that were achieved being lower than the trust target (12 points). Many factors can contribute to this such as late patient cancellations, DNAs, patients being unwell, medical issue, equipment failure etc. The issue is not unique to St Helens and Knowsley Teaching Hospitals or the Cheshire and Merseyside Endoscopy Network, rather it represents the national challenge to improve scheduling to optimise overall session performance.

The graphs for the morning, afternoon and evening sessions take into account the trust time differences between sessions i.e. 4 hours, 3.5 hours and 3 hours respectively.

Thrive has supported St Helens and Knowsley Teaching Hospitals and the Cheshire and Merseyside Endoscopy Network to identify a range of short-term risks and has enabled the appropriate mitigation and operational improvements to be implemented and tested:

At trust level these include:

- **Reporting on list performance allowed the service to review this metric against the maximum numbers of eligible points per list.** Understanding any shortfall allowed the service to ensure clinics started and finished on time with minimal downtime and achieved the optimal points utilisation score.
- **Thrive highlighted acute pressures on endoscopy suite availability were impacting on delayed start times.** Routine re-scheduling of endoscopy sessions outside a period of high acute demand supported the service to schedule endoscopy sessions.

- Cancellation rates associated **with patient preparation and informed consent impacted start times and the overall performance of the service.** The introduction of routine pre-assessment clinics expedited preparation and consent and ensured patient delays were significantly reduced.
- A review of the performance of morning, afternoon and evening lists supported the service to **optimise the scheduling of services and improve capacity across the service.**
- **A review of theatre turnaround times highlighted opportunities for improvement in patient flow.** Access to post-operative recovery beds were reviewed to establish if they were leading to delayed turnaround times.
- An analysis of DNA rates was used to target the **increased use of remote consultations and enhanced specialist triage** in target groups concerned about physical distancing and contracting COVID-19.
- The performance of rooms where clinical innovation is being evaluated was audited – for example, the routine introduction of a new endoscope.

At network level:

- **Increased regional transparency supported the identification of local pressures across the system** and supported re-distribution of capacity around the system to the national waiting time standard of one per cent waiting more than six weeks.
- **Analysis informed investment in third party capacity.**
- **Share best practice to support outlying centres** with Thrive data to illustrate the impact of any proposed changes to deliver an improved performance.

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