



Partnering for Radiology service improvement

How County Durham and Darlington NHS Foundation Trust (CDDFT) partnered with Philips to optimise and reshape its diagnostic imaging services through a transformational service improvement project.

Executive summary:

Through County Durham and Darlington NHS Foundation Trust's existing Managed Service strategic partnership, Philips and the Trust launched a service improvement project. The project included delivery of an operational informatics solution, complementing existing systems, designed to provide visibility of performance and to assist in identifying opportunities for improving patient flow.

The project has delivered real-time visibility of the Trust's departmental workflow, which together with significant staff commitment and flexibility, has enabled several continuous improvement benefits. This includes a 35% increase in MR scan activity at one Trust site, with the associated improvements in patient experience.



Challenges for CDDFT:

A key challenge for radiology at the Trust was improving service efficiency while enhancing quality and patient experience. This could only be achieved by engaging its increasingly busy staff, at all levels in the department, in systematic improvement activity.



Increasing demand for imaging:

The Trust was experiencing growing demand for radiology services in line with national growth levels, increasing referrals from primary care and repatriated services from third parties.



Intensifying cost pressure: The heavy demands on imaging services and financial constraints led to growing pressure for efficiency savings. This required the Trust to increase diagnostic capacity and throughput, whilst optimising the efficiency and effectiveness of its radiology service.



Engaging busy staff: The rising demand for diagnostic imaging came at a time when radiographer and radiologist workforce shortages had become increasingly acute and workflows had been pressurised by the COVID-19 pandemic. The combination has exacerbated the challenge of engaging busy staff in improvement activity.



How to best maximise new technology:

To address its capacity and demand challenges, the radiology service needed to maximise the benefits of investing in new technology, supported by the use of data and informatics to improve operational efficiencies.



About County Durham and Darlington NHS Foundation Trust:



One of the largest integrated care providers in England



Workforce of over 7,000 staff



Serves a population of over 650,000 people



The acute work of the Trust is concentrated at the University Hospital of North Durham and Darlington Memorial Hospital



Offers a full comprehensive range of diagnostic imaging procedures

Our partnership solution:

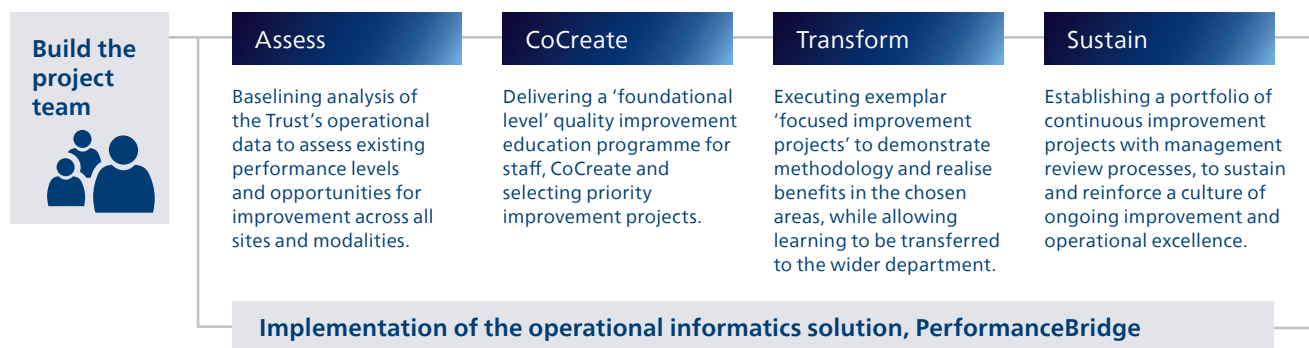
In 2018, CDDFT and Philips agreed a **14-year Managed Service partnership** focused on introducing the latest, cutting-edge diagnostic imaging equipment, combined with transformational service improvements. Together through CoCreate workshop sessions, Philips and the Trust identified the need to transform the service and capitalise on the opportunities of data driven decision making, to transform their patient workflows and maximise the efficiencies of their new radiology equipment. To achieve this, the partnership launched a service improvement project.

The service improvement project:

The service improvement project started one year into the Managed Service partnership. The project consisted of multiple focused workstreams aimed at enabling the Trust to optimise the efficiency of the radiology service through introducing new techniques, service pathways and quality management; all elements working together to ultimately improve patient care and satisfaction.

Building the project team:

The partnership built in effective governance from the start. A Philips service improvement specialist was assigned to provide project leadership, supported by a CDDFT-led steering team, to coordinate the project. The multi-stakeholder team also appreciated that the integration of people, process and technology was key to service optimisation. As a result, the project included developing a culture of data-driven continuous improvement, sustained by enhancing the quality improvement (QI) capabilities of radiology leaders, clinicians and staff. This was achieved by deploying a framework to understand the starting point and for building the transformational changes the service required.



What is PerformanceBridge?

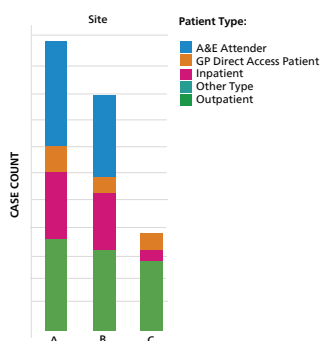
The project included implementing the operational informatics solution – PerformanceBridge – which makes available relevant and timely performance data to staff, empowering them to make data-driven decisions for driving performance and improvement. PerformanceBridge is a flexible suite of performance management software and services to assist radiology departments in enhancing productivity and asset management for improving patient experience and delivering better value-based care.

What is CoCreate?

CoCreate is a collaborative design process aimed at developing jointly owned visions and plans.

Project implementation and results:

Activity variation by scanner:



Identifying the key challenges facing the Radiology department:

By analysing radiology system data extracted early in the project, the team gained a deep understanding of the key challenges facing the Trust's radiology department and provided performance baseline data for assessing and measuring the benefits of service improvement activity. This included identifying:

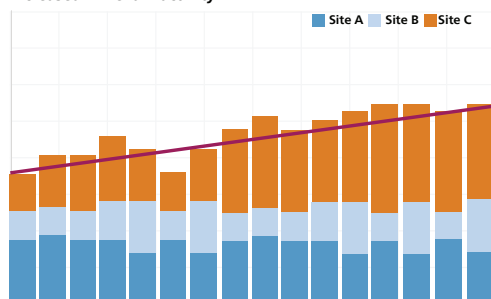
- **CT scanner throughput varied between sites by a factor of x3**
- **Potential to gain an additional 125 patient scans per week**

Performance against specific metrics, such as patient waiting times, scan cycle times and patient flow rates, were used to identify bottlenecks and areas of risk concerning adherence to national targets (e.g. regarding patient waiting times). Key improvement priorities were identified, including opportunities to increase patient flow by comparing activity levels across sites and imaging scanners.

Using operational informatics to measure improved patient throughput rates:

- Over 35% increase in MR exam throughput, at one site, compared to pre-COVID19 performance
- Reduced cycle times and better scheduling to drive improved patient flow

Increased MR exam activity:

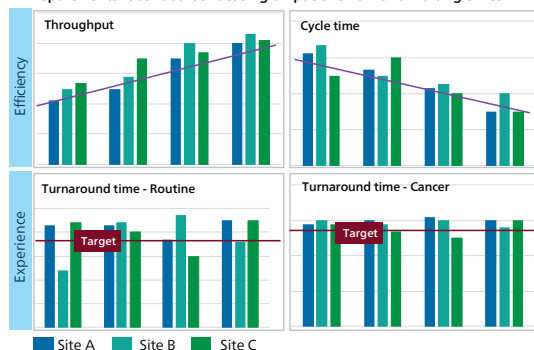


Using PerformanceBridge operational informatics tools, the team were able to track and report significant improvements to MR patient throughput rates – a typical 35% increase in weekly scan activity, at one site, equating to an additional 50 patient scans per week.

The increase was achieved, in part, through the use of new technology. One of the original scanners was replaced with the Philips Ingenia Ambition X 1.5T scanner, equipped with Philips Compressed SENSE (CS) image analysis software. The overall improvement in patient throughput was realised by a combination of reduced cycle times enabled by the new software, optimised scheduling patterns and enhancing staff familiarity with the new technology and a readiness of staff to work extended and flexible working patterns.

Creating dashboards to ensure visibility on key department metrics:

Departmental dashboards focusing on patient flow and waiting times:



The team also established modality performance 'dashboards', using data and metrics visualised by PerformanceBridge. This ensured a clear focus on patient waiting times and the improvements necessary to effectively manage them. The end-to-end patient journey, from patient referral to completed exam, was assessed to identify opportunities for improvement. Patient turnaround times (TATs) for cancer, routine and inpatient referrals were tracked as key metrics for each modality and site to identify where corrective actions were required. In this way, patient waiting times were proactively managed.

During project implementation, opportunities were identified to further enhance the PerformanceBridge 'dashboard' reporting capabilities in order to drive additional future benefits.

Engaging staff in quality improvement throughout:

The partnership agreed that people were the biggest asset and that keeping staff engaged was a key component to integrate and build continuous quality improvement into day-to-day processes.

To support the Trust's staff in their continuous service improvement journey, the partnership ensured that staff were engaged at every stage of the service optimisation process. The engagement process developed staff capability and motivation for using data to determine actionable insights for delivering improved patient experience and workflow efficiency.

Coaching modality leads and teams to use operational data:

Training to help leads feel comfortable with using operational data to drive performance improvement. This included learning how to design localised dashboards and generate specific reports themselves using PerformanceBridge.



Conducting a staff experience survey:

The survey was focused on staff perception regarding the identified improvement areas e.g. highlighting the need for regular data driven team reviews (or Huddles).



Delivering foundation (or bronze) level quality improvement training:

The bespoke training was aligned with the Trust's improvement approach (IMP), providing a common base of understanding and capability for QI activities. 80+ staff members from the Radiology department were trained.



The project's success relied heavily on the engagement and commitment of busy staff and their willingness to respond to challenges through extended and flexible working.

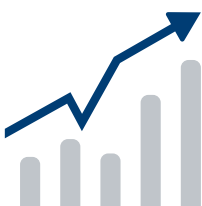


Managing the impacts of COVID-19

The project remained on track throughout the global pandemic. The availability of real-time PerformanceBridge activity level data made possible the tracking and assessment of COVID-19 related impacts.

Modality activity levels were tracked and managed during and post national 'lockdown' events, enabling the Trust to understand how volumes and scan type requirements were changing during the pandemic. This enabled the Trust to identify the need for additional capacity and be more proactive in their countermeasures.

Benefits and results of the partnership service improvement project:



Improved workflow:

Near real-time visibility of departmental workflow:

Implementing the PerformanceBridge solution making performance data visible to drive continuous improvement.



Staff benefits:

Modality leads and teams feel confident to use operational data:

Coaching and educational programmes delivered so staff are confident to create their own bespoke dashboards.



Improved service:

Over 35% increase in MR exam throughput:

Compared to pre-COVID19 performance patient flow improved, supporting effective management of waiting times.

Ability to highlight areas of criticality:

Patient flow improvement opportunities identified through analysing radiology workflow data (CRIS).

Over 80 Radiology department staff trained:

Staff trained in foundation (or bronze) level quality improvement training to drive a performance improvement culture.

Reduced MR cycle times and better scheduling:

Released capacity and improved patient experience.

Tangible workflow efficiency:

A gain of 50 additional MR patient scans per week at one site.

Staff feedback is embodied in departmental change:

The staff experience survey focused on staff perception regarding identified improvement areas to build the transformation around staff pain points.

Dashboards making patient experience visible:

Patient turnaround times (TATs) for cancer, routine and inpatient referrals are tracked as key metrics for each modality and site allowing patient waiting times to be proactively managed.

Overall the project realised efficiency and throughput benefits contributing to improved patient experience by managing waiting times, while also offering the potential for earlier diagnosis and better outcomes.

What are Managed Service strategic partnerships?

Managed Services are our comprehensive, vendor neutral solutions designed to guide and support you in achieving optimised business outcomes. Working in close partnership as an extension of your team, we go beyond traditional Managed Equipment Services by treating technology as an enabler for transformation. Our flexible agreements are grounded in actionable data insights, to support you in making confident investment decisions.

Key benefits



Flexible, integrated, future-proof technology

Working in partnership to deliver flexible, right fit, artificial intelligence (AI) enabled technology and service management plans.



Optimised technology maintenance

Managing essential upgrades, streamlining and optimising maintenance and maximising asset utilisation and system availability.



Driving positive change

Leveraging our transformation expertise to deliver cutting-edge facilities through assessment of equipment and service needs, clinical service modelling, infrastructure planning, strategic design and change management programmes.



Defined total cost of ownership

Designed to optimise the total cost of ownership (TCO) by rationalising investments and streamlining over time, providing risk transfer and access to gainshare mechanisms.



Patient and staff experience

Improving patient and staff journeys through workflow optimisation, enabling access to immersive experiential and ergonomic technology, research and training programmes.



Financial Engineering

Our Managed Services are supported through a range of flexible, cost-effective, financing and financial planning models, tailored to meet specific budgetary requirements.



Performance Management

Providing access to real-time metrics through integrated information management systems and comprehensive LEAN training programmes, enabling continuous service improvement.



Working in true partnership

Providing customers with a single point of contact to engage stakeholders, align around shared goals and deliver on agreed KPIs. Our Managed Services go beyond equipment, partnering to solve clinical, patient and staff experiential, operational and financial challenges.

To find out more about Managed Service and Strategic Partnerships:
www.philips.co.uk/healthcare/medical-products/partnerships



Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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