



The ROYAL MARSDEN
NHS Foundation Trust

The Royal Marsden NHS Foundation Trust: Transforming Clinical Genomics Automation with Automata

2026



Photo credit: The Royal Marsden NHS Foundation Trust

Executive Summary

The Royal Marsden NHS Foundation Trust partnered with Automata to transform its clinical genomics operations and address critical capacity constraints. Facing increasing demand for genomics services, the cancer centre needed to scale testing throughput while maintaining UKAS compliance, managing lab space, and reducing staff burden from manual DNA extraction workflows.

Automata delivered a phased solution focused on stabilization first, then scale. The platform standardized protocols and sample journeys, enabled the establishment of a quality management system that passed UKAS Extension to Scope audits with zero findings, and created a modular lab infrastructure designed to handle future growth in a streamlined cost effective way.

The result: production-scale automation that increased throughput, improved testing reliability, reduced manual touchpoints, and freed skilled scientists to focus on high-value work — all while maintaining regulatory compliance and positioning the lab for continued expansion.



Photo credit: The Royal Marsden NHS Foundation Trust

“Working with the Automata system is great! The seamless integration has increased my throughput and efficiency and greatly reduces the number of touchpoints and workload. This is a serious step forwards in automated processes, and I can’t wait to see what the future holds.”

Felix Arnautovic

Associate Practitioner, Clinical Genomics (Molecular Diagnostics),
The Royal Marsden NHS Foundation Trust

The Challenge

The Royal Marsden faced increasing demand for its genomics services, creating operational strain. Manual processes, complex data flows, and evolving quality requirements introduced several challenges:

Manual extraction workflows limiting throughput

- multiple sample types and quality control processes create operational bottlenecks that constrain scalability, complicate consumables management across multiple vendors, and increase staff onboarding complexity.

Physical infrastructure constraints

- limited lab space restricts capacity for expansion and hinders both operational efficiency and R&D innovation.

Capacity management pressures

- ongoing challenge to balance staff workload, train new team members, and meet sample turnaround commitments.

Underutilized automation opportunities

- significant potential for technology adoption to reduce manual burden and increase operational leverage.

These constraints made it difficult to reliably scale testing while maintaining quality, compliance, and staff well-being.

The Solution

The solution focused on stabilization first, followed by throughput expansion:

Operational excellence through standardization

Developed comprehensive protocol frameworks and onboarding infrastructure that enable new team members to quickly reach full productivity, ensuring every sample follows standard and optimized pathways that reduce variability and increase throughput.

Regulatory strength as a competitive advantage

Established quality management systems rigorous enough to meet ISO 15189 standards and pass UKAS Extension to Scope inspections, while maintaining the flexibility and speed needed to iterate on processes and respond to evolving testing requirements.

Infrastructure designed for scale

Created modular, adaptable lab systems architecture that anticipates future demands, allowing the organization to expand capacity, add new testing capabilities, and handle increasing complexity without hitting infrastructure constraints.

This phased approach ensured clinical stability while laying the foundation for future scale.

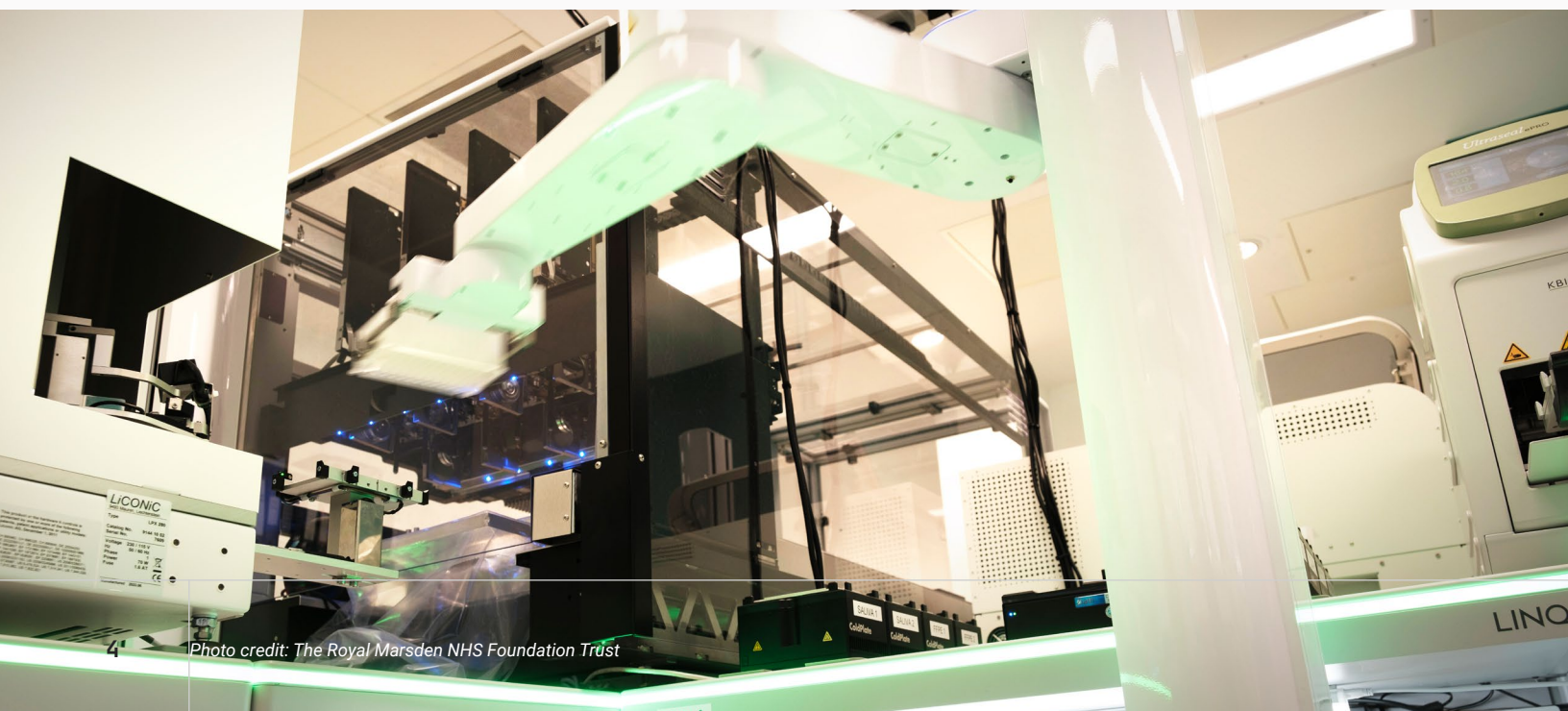


Photo credit: The Royal Marsden NHS Foundation Trust

The Results

The programme has delivered meaningful clinical and operational impact:

- Increased simplicity through standardization, alleviating staff onboarding and capacity constraints.
- Production-scale automation enabled with modular and flexible solutions.
- Improved testing reliability, enabled by simplified and standardized sample journeys.
- Reduced staff burden, freeing skilled scientists from repetitive manual tasks.
- Enhanced compliance and confidence, following a successful UKAS extension with no findings.

Looking ahead, The Royal Marsden and Automata are focused on further high throughput expansion through parallelized workflows, removal of bottlenecks via hardware upgrades, and full end-to-end NGS workflow integration.



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We are Automata – redefining what’s possible in the future of lab automation.

Born from a world-leading research lab, we’re demolishing legacy barriers and obliterating complexity to create a new, integrated era of intelligent, accessible automation.

Our platform, LINQ, is the first fully integrated, AI-ready and easy-to-use automation platform that connects every component of your lab – digitally and robotically – to deliver end-to-end workflows without compromise. Its dynamically modular smart benches and powerful cloud-based software reimagine how you design, orchestrate and monitor experiments, wherever you are.

Built on an open and interoperable architecture, Automata enables labs to move faster, scale smarter and innovate continuously – turning tomorrow’s lab into today’s reality.

Get in touch with our team of automation experts, engineers and scientists to unlock new possibilities and supercharge your lab’s discovery.