



cobas®

Case study

cobas® Mass Spec solution - first UK installation at South West London Pathology

A collaborative pathway evaluation with South West London Pathology and Roche Diagnostics Limited.



Summary



The implementation of the **cobas**® Mass Spec solution at South West London Pathology (SWLP) represents a step-change in specialised clinical biochemistry, bridging the gap between high-sensitivity mass spectrometry and fully automated core lab efficiency. Implementing Roche's automated solution, has helped create an agile and robust service capable of supporting high-volume patient diagnostics.

Introduction

SWLP is a fast-growing NHS pathology partnership anchored at St George's Hospital, providing specialised diagnostic services across five hospital sites: St George's, Croydon, Kingston, Epsom, and St Helier. Serving a population of over 1.8 million, 25 million tests are run in clinical blood sciences every year. As a high-volume network, SWLP's specialised biochemistry department faces growing operational challenges.

Historically, mass spectrometry testing at St George's Hospital relied exclusively on traditional, research-based LC-MS/MS platforms. While highly capable, these systems require heavy manual sample preparation, specialised hands-on expertise, and long batching cycles, leading to increased turnaround times.

To modernise their service, deliver faster results, and establish a scalable centre of excellence, SWLP partnered with Roche Diagnostics to add the fully automated **cobas**® Mass Spec solution i601 to its testing fleet.

Through a structured change management programme and collaborative implementation, SWLP successfully integrated automated mass spectrometry into its laboratory workflow, transitioning from batched workflows to continuous, random-access testing with full end-to-end data integrity, whilst freeing up specialist staff capacity across their existing instruments.



"What's exciting about it is the workflow. It's completely different to traditional mass spectrometry. It's just like an analyser - you front load it and it does the work for you. That was the real attraction."

Jamie Laughlin, SWLP Director of Operations

Challenges of traditional mass spectrometry

Traditional mass spec presented operational constraints for SWLP, with workflows requiring lab staff to dedicate considerable time to sample retrieval, manual reagent preparation, and reviewing and reporting on results. Assays developed in-house on traditional platforms require prolonged validation periods, with some taking up to two years to fully establish. Training Biomedical Scientists to operate these systems independently demands extensive hands-on supervision. Across a high-volume network spanning five hospital sites, these resource-intensive processes and extended batching cycles restricted analytical throughput and extended turnaround times for patient results.

Why cobas® Mass Spec?

The main attraction of the **cobas®** Mass Spec solution for the team at SWLP was that it *“works like any other automated analyser”*. The fully automated, IVD-compliant platform is built for the high-volume workflows of diagnostic laboratories, overcoming the challenges of traditional mass spec to improve workflow efficiency. The reputation of Roche as a provider of high quality equipment gave the team the confidence that they would be supported through the process of installing and implementing the **cobas®** i 601 analyser.

*Manual sample pre-treatment is still required for certain assays, e.g. immunosuppressant drugs and free drugs.

Benefits of the **cobas®** Mass Spec solution

-  **Full automation** from sample preparation* to result reporting, featuring true random-access operation.
-  **High throughput** to meet routine laboratory demand with fast, predictable turnaround times.
-  **Seamless integration** into core clinical chemistry and immunochemistry operations, as well as existing lab automation and IT systems.
-  **Broad assay menu** available on the instrument, all with standardised performance traceable to reference methods.

By reducing the need for Laboratory Developed Tests (LDTs) for high throughput parameters, SWLP can rapidly expand its future testing menu and bring specialised assays, which were previously sent to external referral centres, back in-house. Being able to automate these routine assays on the **cobas®** i 601 analyser has freed up critical time for senior specialists to develop assays on the laboratory's manual mass spectrometers, as Tiago explains:

“Automating routine testing gives our team the capacity to focus on specialised assay development on our manual systems”.

Tiago Sousa, Technical Lead for Specialist Biochemistry

How the cobas® Mass Spec solution was acquired

Building the business case

With return on investment increasingly critical across the NHS, SWLP recognised the need for an efficient network-wide mass spectrometry solution, which would deliver tangible clinical and financial benefits. They evaluated market options before selecting the **cobas® i 601** analyser. Senior management built a business case, demonstrating that the consolidation and automation of routine testing onto a single platform would deliver a clear return on investment. By focusing on bringing specialised testing in-house and generating revenue through rapid testing for neighbouring NHS trusts and providers, the business case gained approval, enabling installation at the St George's hub. Through smart layout planning and targeted site works, Roche helped comfortably fit the analyser into the existing laboratory space.

"The NHS is getting far more commercial, so return on investment is very important."

Jamie Laughlin, Director of Operations



Implementing the cobas® Mass Spec solution



The implementation was executed through a highly structured change management programme delivered by Roche, involving a wide spectrum of staff.

Pre-Implementation change management programme

Before the instrument arrived in the laboratory, structured off-site sessions and group kick-off meetings were held to ensure all personnel were fully aware of the upcoming changes and aligned on operational goals. By engaging staff early, providing comprehensive training across all bandings, and maintaining open communication, the team aligned the wider biochemistry department and ensured the transition ran as smoothly as possible alongside routine services. This proactive pre-work created strong engagement across the department and established a clear transition template that can be applied to future project rollouts.

“The change management team did an incredibly good job. That has fed through the whole process, which has gone very smoothly.”

Jamie Laughlin, Director of Operations

Training & workforce engagement

Training was delivered via three-day sessions that catered to both experienced **cobas**® analyser users and those with no prior **cobas**® experience. Because the user interface mirrors standard core laboratory platforms, staff across all experience levels acquired the necessary skills quickly. The inclusive approach generated significant excitement and enthusiasm among the team, directly contributing to one of the smoothest system integrations the laboratory has experienced, with all key project milestones met without any delays.

“The change management programme was really helpful in integrating this analyser into the wider biochemistry department.”

Tiago Sousa, Technical Lead for Specialist Biochemistry

Feedback from the SWLP team

The feedback from leadership and technical personnel highlights a transformed daily workflow across several key operational areas:



1. Workflow efficiency & automation

Shifting from fragmented mass spectrometry testing to an automated, random-access platform has reduced manual hands-on tasks, removing many forms of manual sample preparation and result transcription. This shift has enabled staff across various bandings to operate the analyser with confidence, improving turnaround times for critical assays and establishing a more resilient and scalable diagnostic service.

“The major improvement that we have seen in our day-to-day work is that we have reduced the manual work involved in preparing these tests. There is no manual sample preparation, manual reviewing, or manual transcription. This will save staff a huge amount of time.”

Tiago Sousa, Technical Lead for Specialist Biochemistry



Feedback from the SWLP team



2. Performance enhancement

Verification and validation data for the newly launched assays has demonstrated high analytical performance, providing confidence to both laboratory scientists and clinical teams. The immediate reduction in turnaround times for routine tests is already improving daily laboratory operations, with management anticipating a significant long-term impact on patient pathways and overall network efficiency.

“The turnaround time - wow, it’s in a different league. It’s always nice for staff when they know they’re making an impact on the patient pathway, releasing that result far quicker.”

Jamie Laughlin, Director of Operations



3. Operational impact

By centralising automated mass spectrometry at the St George’s hub, SWLP can now efficiently process high-volume testing for its five network hospitals while building the operational capacity to absorb external referral work from across London and Southern England.



Next steps



With routine workflows automated, senior laboratory specialists will have the capacity to focus on developing specialised assays, enabling SWLP to bring tests in-house that are currently sent to external reference laboratories. This shift is designed to deliver faster result turnaround times and establish a more robust, resilient service for patients across the network.

Looking ahead, SWLP plans to expand its operational footprint by offering high-throughput mass spectrometry services to other NHS trusts and private providers across London and the South of England. The high analytical capacity of the platform allows SWLP to widen access to mass spectrometry testing by having future-proofed capacity to repatriate additional tests as the menu expands.

“You need a significant number of mass spectrometry tests to make the initial investment viable. With the centralisation of a lot of these within network labs across the UK, it’s created big network hubs which help build the case for specialised technology with really good workflows for mass spectrometry.”

Jamie Laughlin, Director of Operations

“Overall, it's been an incredibly good news story.”

Jamie Laughlin, Director of Operations



Roche Diagnostics Limited. Charles Avenue, Burgess Hill, West Sussex, RH15 9RY. Company Registration Number: 571546. Date of preparation: August 2026 Document number: MC-IE-04389.

©2026 Roche Diagnostics Limited. All rights reserved. COBAS is a trademarks of Roche. All other trademarks are the property of their respective owners.

For healthcare professional use only in the UK and Ireland. Not for distribution.