



## REVOLUTIONISING LABS: STAGO HAEMOSTASIS SYSTEMS



# Revolutionising laboratories with sthemO and sthemE haemostasis systems

Stago's new high-throughput sthemO and sthemE haemostasis systems deliver better patient care, improve productivity, and reduce staff pressure – making them the ideal solutions for addressing urgent NHS coagulation laboratory challenges.

In an increasingly overwhelmed NHS, coagulation laboratories are always looking for new, innovative ways to maximise productivity and efficiency, reduce staff fatigue, eliminate pain points, and deliver a modern pathology service for better patient care. So, let's introduce sthemO and sthemE, a family of intuitive haemostasis systems designed

to standardise and optimise laboratory workflow.

As a leader in haemostasis and thrombosis exploration for over 60 years, Stago has expanded its specialties and product offering with a new 'sthem' line. And its sthemO analysers and sthemE eSolutions are already making waves across Europe. "The time savings for

our technicians are clear", says Dr Henry Paridaens, at Citadelle Regional Hospital Liège Belgique. "Today, 88% of the patient results are validated automatically without any intervention by the technicians... This reduces the risk of error and also standardises the rerun actions, the additions of other tests etc."

## The productivity problem

From long COVID-19 backlogs to gradual changes in population size, life-expectancy and need, the NHS long-term workforce plan recognises the difficulties faced when filling vacancies, and the importance of a sufficiently skilled and well-staffed workforce. And with increasing pressure on staff at all levels, it's no surprise that patient experience, service capacity and productivity are being impacted.

Naturally, NHS trusts are doing everything they can to address challenges like adequate staffing levels, fair remuneration, and investment in training and development. Sir Julian Hartley, Chief Executive of NHS Providers, said: "Work being done on the 'front line' of the NHS offers real hope. It's encouraging to see how trusts are finding positive solutions in the face of extraordinary pressures. But if we're serious about improving the sustainability of the health service and want to help it to be as productive as possible then the efforts of trusts must be matched by long-term cross-government support including capital investment in NHS buildings and facilities."

When facing this challenging environment, what can NHS trusts do in the meantime to unlock productivity gains and free up staff time? The answer, according to Stago, is to invest in innovative solutions, embedded clinical decision support tools, and expertise.



Continuous loading of reagents and consumables eliminates barriers to productivity.



sthemO revolutionary new cuvettes enable four technologies in one cuvette.

## sthemO: maximum autonomy for more productivity

Thanks to a breakthrough in haemostasis technology, scientists can let sthemO – Stago's next-generation haemostasis analyser – automatically handle the peaks in their coagulation laboratory activity, through continuous loading and unloading of samples, reagents and consumables without interrupting the analytical cycle. Its onboard storage capacity gives scientists maximum walkaway capabilities, freeing valuable time for critical or complex tasks that require more attention.

For a workforce where competences must often be demonstrated across multiple disciplines, laboratory staff will be delighted to discover sthemO's efficient and intuitive user interface keeps things simple, limiting the amount of training required. Likewise, routine processes, such as changing consumables, are accompanied by easy-to-follow instructions and graphics. Meanwhile, the QR code on each reagent vial offers complete traceability, acting as a unique identifier that greatly facilitates reagent unloading and reloading across platforms, alongside a continuous loading rack-based system which further maximises productivity.

Integrated smart features are designed to make daily life even easier, while enhancing sthemO's efficiency. An onboard camera and embedded artificial intelligence recognises and automatically processes different sample tube types, while the onboard stirring system limits reagent handling, removing the need for stir bars and reducing the risk of manual errors.

"sthemO doesn't just deliver faster results," says Yannig Querel, Business Unit Marketing Manager – UK at Stago. "Its new line of dedicated reagents offers optimal performances and a wider range of tests – delivering enhanced accuracy, reliability and consistency of test results, and ultimately improved patient management."

For scalability, Stago offers two variations of sthemO – the flagship 301 model, for high-activity laboratories, and the 201, a compact benchtop version designed for small to medium laboratories, which offers the same efficiency and analytical performance.

## sthemO: in summary

- Greater productivity: the analyser never stops working;
- XXL loading capacity and new packaging for optimum walkaway capabilities;
- Up to 156 product vials onboard for sthemO 301;
- High throughput for all test combinations.

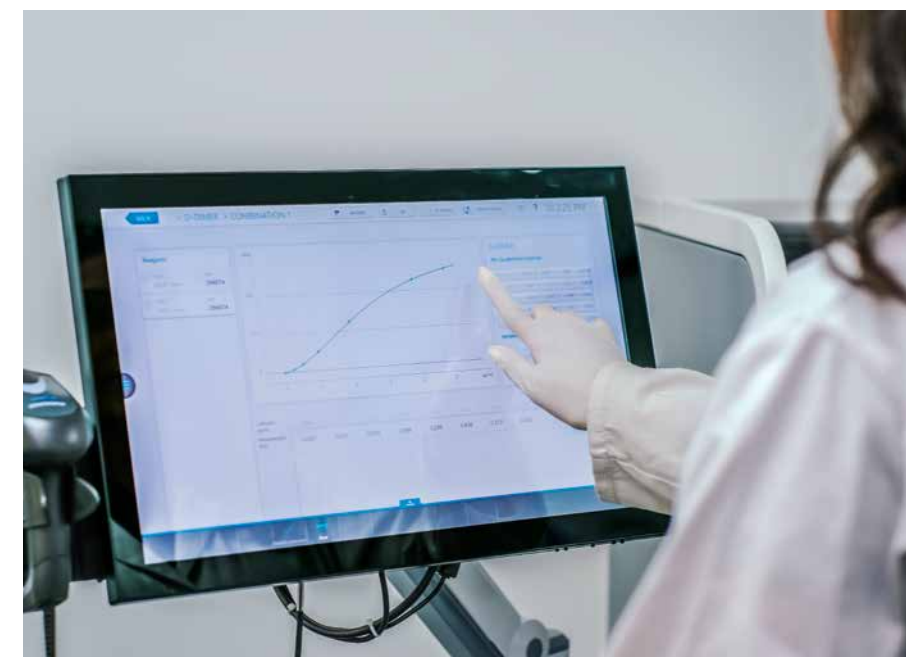
## One cuvette. One test. Four embedded technologies

While its creators are keen to emphasise the simplicity and intuitiveness of their sthemO analysers, there is some cutting-edge innovation to be found under the hood.

sthemO's 'revolutionary analytical core' – a breakthrough which includes Stago's exclusive 'VBDS Plus' technology – performs optical measurements in parallel to its gold standard viscosity-based detection system (VBDS), all in the same cuvette.<sup>1</sup> Running clotting tests using VBDS and three different wavelengths in parallel not only increases productivity, but also opens up opportunities for new clinical applications.

## Four embedded technologies

- VBDS Plus
  - Colorimetry
  - Turbidimetry
  - Immunochemiluminescence
- sthemO's analytical core also includes integrated immunochemiluminescence (reagents under development) technology, delivering optimal performance with new parameters – and increasing throughput of all test



The newly developed graphical user interface is common across all sthemO instruments and the new sthemE Manager.



combinations, allowing for a wider range of tests with greater precision.

A standout benefit, according to the team at Centre Hospitalier Universitaire à Limoges: "What impressed us the most was the throughput and turnaround time (TAT) of the sthemO 301. The wider the range of tests, the greater the difference with the STA R Max. As an example, we evaluated this difference at 40 minutes on a mixed panel of tests (PT/APTT/FIB) for 100 samples. On our STA R Max, it takes 1 hour 45 minutes to complete this while it only takes 1 hour 5 minutes with the sthemO 301.

"We were also able to evaluate the time to results for a tube with PT/APTT/FIB tests loaded on the dedicated STAT sample area. It took around 10 minutes to get the results on STA R Max and only eight minutes on sthemO 301."

**Cuvettes and beads**

- Ergonomic cuvette packaging for easy loading
- 'Place and twist' bead dispenser for safe and simple loading
- Test management optimised by the analyser, increasing throughput of all test combinations.

**sthemE: maximising quality for peace of mind**

The sthemE range of eSolutions further maximises laboratory productivity, while empowering scientists to pilot their Stago coagulation solution from any computer in their laboratory, including complex organisations with multiple sites and LIS.

**sthemE Manager**

Stago's data manager, delivers true cross-site connectivity, allowing biomedical scientists to review patient results from a centralised database at any location, enhancing patient and quality management. Meanwhile, results auto-validation and Stago patented



Continuous sample loading and unloading enables users to respond quickly to workload fluctuations. There is a dedicated loading position for urgent samples, as shown above.

expert rules remove the burden from less experienced staff by offering analytical guidance and support needed to make the right decisions. Several CE-marked Stago coagulation algorithms are already available.<sup>2,3</sup> These algorithms further demonstrate Stago's commitment to enabling laboratories to deliver the best possible patient care, even when facing workforce challenges.

**sthemE Qualiris**

An intuitive, comprehensive ISO-17043 accredited EQA program dedicated to haemostasis and thrombosis. Complementing the NEQAS EQA scheme, the program provides detailed reports that allow scientists to confidently master the evaluation of their results and comparison with their peers – ensuring

conformity, high quality and exceptional performance level.

**sthemE Expert QC**

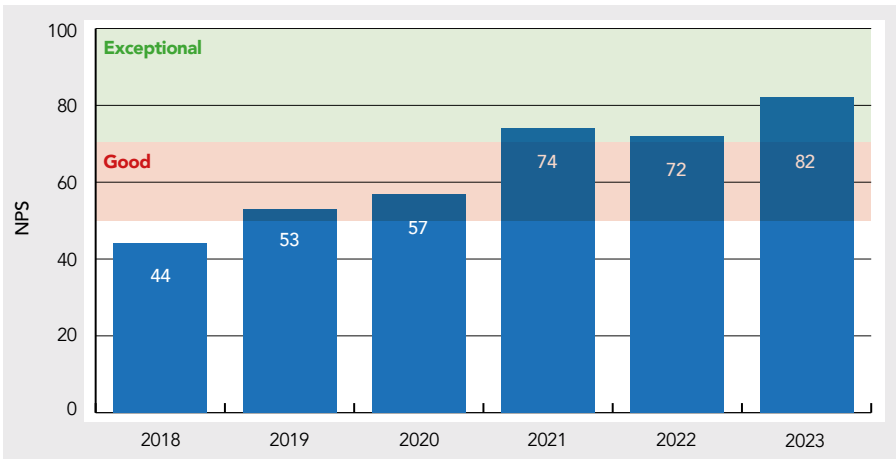
A robust IQC peer-comparison tool that allows scientists to effortlessly assess the quality of their entire assay repertoire. Data are automatically uploaded through sthemE Connect, allowing users to quickly identify potentially abnormal trends, and ensure systems are always at the peak quality performance level. Globally, there are more than 4000 instruments subscribed, meaning the peer groups are large and statistically robust.

**sthemE Connect**

This provides remote troubleshooting, enabling Stago's skilled and experienced teams to assist scientists and support them when they need it most, while helping to boost customer satisfaction and NPS scores. sthemE Connect also enables the automatic and secure transmission of sthemE Expert QC data and CPRR reports to Stago servers.

**sthemE Accreditation**

Part of sthemE Manager, this service simplifies ISO15189:2022 compliance and UKAS assessments. Stago made the method verification and performance monitoring even easier with a comprehensive 'accreditation toolkit' and '360° Quality' solution. As Lenka Mercer, senior biomedical scientist in coagulation at the Royal Sussex County Hospital, explains, sthemE Accreditation is "Far more than just innovative software,



Increasing Net Promotor Score seen in customer satisfaction surveys undertaken between 2018 and 2023 (NPS grading as per Bain & Company).

Stago's accreditation toolkit simplifies the complex. It delivers precision and accuracy at its best, and is simple to use even for those with no previous experience."<sup>4</sup>

**sthemE: in summary**

- *sthemE Manager* – for cross-site connectivity and expert rule integration
- *sthemE Qualiris* – for conformity, high quality and exceptional performance
- *sthemE Expert QC* – for comprehensive quality control, confidence and precision
- *sthemE Connect* – for remote support, secure data transmissions and troubleshooting
- *sthemE Accreditation* – for enabling laboratories to demonstrate compliance quickly and easily.

**A real gain in productivity for the coagulation laboratory**

The haemostasis laboratory team at CHU Limoges, already satisfied with Stago's high-performance, industry-leading Max Generation, were invited by Stago to evaluate the analytical performance, throughput and ergonomics of their new haemostasis solution. They were quickly impressed by the speed and efficiency of sthemO – having "noticed a significant time saving when preparing the reagents" – and following the evaluation, they selected sthemO as their next coagulation solution.

"We received a succinct two-hour training from the Stago team in our premises which gave us complete autonomy. We were later able to discover other features on our own. Due to the intuitiveness of the software (smartphone app-like), training requirement is minimal. The technical team is unanimous on the simplicity of use of the sthemO 301." The team concluded: "As for maintenance, only a needle cleaning is required, and this process is fully automated. All this means a real gain in productivity for the coagulation laboratory."

An initial study at the Oxford Haemophilia and Thrombosis Centre (OHTC), part of Oxford University Hospitals' NHS Foundation Trust, was instrumental in shaping the functionality of sthemO. Ahead of the results being published, lead scientist Peter Baker indicated: "It's certainly fast – and very quick to the first result being produced."

Elsewhere, sthemO has been setting new standards in laboratory evaluations across France. Hôpital Sud in Rennes noted the productivity of sthemO 201 is "higher than that of the STA Compact Max with a 30-46% gain in results for the entire series. The sample loading time



More than 20 reagents are available on the sthemO instruments, with more added on a monthly basis.

is decreased by 75%". Meanwhile CHU Dijon Bourgogne confirmed "the speed of the sthemO 301 is higher than that of the STA R Max3 with a reduction in the time to release result by an average of up to 30%".

Moreover, Laboratory Medicine at Galdakao Usansolo Hospital in Galdakao, Spain, was equally as impressed by its findings: "sthemO 301 is a very intuitive analyser and it requires little training time for laboratory technicians. The study demonstrated that the sthemO 301 is fast, easy to use and shows very good precision and satisfying performances for implementation in a clinical laboratory."

**sthemO and sthemE: the future of haemostasis**

It's clear that continuous innovation and development is required to meet evolving NHS needs. And Stago's advanced systems certainly fit the bill: its VBDS Plus technology-powered sthemO system is a major innovation in haemostasis, while its sthemE digital solutions maximise productivity potential and ensure system accuracy.

**Less pressure on staff**

- Easy-to-use interfaces require minimal training
- Less manual errors and more uptime for critical tasks
- Embedded expertise and automated processes reduce strain on staff.

**Improved productivity**

- High throughput and walkaway

capability of sthemO

- Standardised autovalidation and expert rules in sthemE.

**Better patient care**

- Enhanced accuracy and reliability of test results
- Integration of clinical decision support tools.

**References**

- 1 Woolley A, Golmard JL, Kitchen S. Effects of haemolysis, icterus and lipaemia on coagulation tests as performed on Stago STA-Compact-Max analyser. *Int J Lab Hematol*. 2016; 38 (4): 375–88. doi:10.1111/ijlh.12498.
- 2 Florin L, Desloovere M, Devreese KMJ. Evaluation of an automated algorithm for interpretation of lupus anticoagulant testing. *Int J Lab Hematol*. 2019; 41 (3): 412–417. doi: 10.1111/ijlh.13001.
- 3 Riley PW, Gallea B, Valcour A. Development and Implementation of a Coagulation Factor Testing Method Utilizing Autoverification in a High-volume Clinical Reference Laboratory Environment. *J Pathol Inform*. 2017; 8 (1): 25. doi: 10.4103/jpi.jpi\_95\_16. eCollection 2017.
- 4 Stago UK. A service that simplifies ISO15189:2012 compliance and UKAS inspections. *Pathology in Practice*. 2021 May; 22 (3): 33–5.

For more information about Stago's new range of sthemO analysers and sthemE eSolutions, visit the Stago website:  
[www.sthemO.stago.com](http://www.sthemO.stago.com)