



Ms Dima Yassin, senior supervisor, haematology lab, SKMC.

# Coagulation testing in a haematology lab: improving quality and efficiency

Over the last three years, the haematology laboratory at Sheikh Khalifa Medical City (SKMC) in Abu Dhabi has introduced two STA-R Evolution analysers to fully automate coagulation testing. CLI spoke to Dima Yassin, Senior Supervisor in the haematology lab at SKMC, to discover how the new system has improved quality and efficiency in her lab and benefited both patients and healthcare personnel.

**Q.** Could you first tell us a little about the Sheikh Khalifa Medical City. What is its structure, how is it managed and what patient population does it serve?

Sheikh Khalifa Medical City (SKMC), managed by Cleveland Clinic, serves as the flagship institution for SEHA, Abu Dhabi's healthcare organisation.

SKMC was formed in 2005 as a result of merged healthcare entities in the Island of Abu Dhabi.

SKMC comprises a 568 bed acute care hospital, 14 outpatient speciality clinics and a blood bank, all accredited by Joint Commission International (JCI). In addition, SKMC manages a 125 bed behavioral

sciences pavilion, six family medicine clinics, two urgent Care Centres and two dental Centres.

**Q.** How is the diagnostic laboratory structured and roughly how many tests are carried out per day?

The diagnostic laboratory in SKMC is a CAP (College of American Pathology) accredited laboratory. The laboratory offers a full range of clinical laboratory services for the detection and diagnosis of disease. These services include phlebotomy, anatomical pathology, cytology, clinical chemistry, haematology/coagulation, microbiology, blood transfusion, a donor blood bank unit, immunology, serology, molecular pathology, histocompatibility testing and point-of-care testing. We run around 160,000 procedures per month.

**Q.** How many of these tests involve the haematology lab, and which tests are most frequently carried out in this lab? Are coagulation tests a major part of your workload and is this increasing? Do you carry out coagulation tests on pre-surgical patients as well as on patients who have coagulation abnormalities, or are on anticoagulation therapy?



Abu Dhabi's Sheikh Khalifa Medical City.



The coagulation lab at SKMC.

## Automated coagulation analysers

Regardless of a clinical haematology lab's organisation, configuration and integration of coagulation testing on an automated track (TLA), the STA-R Evolution Expert Series (STA-R EES) is the ideal choice. The system is highly versatile, as well as being the only system which can be connected to the main solutions currently available.

## Productivity

INR control (and APTT) tests account for more than 80% of the typical activity of a coagulation central laboratory, and the results must be provided as soon as possible. It is thus essential to provide a

guaranteed turn-around time (TAT) for these samples. This system allows complete integration of coagulation tests into the pre-analytical track, significantly reducing TAT and ensuring that all tests are carried out promptly. The ability to smooth out peaks of activity also has a positive effect on throughput. In addition this automated solution can cope with increasing workloads, as new analytical modules can be integrated into the system.

## Analytical performance

High quality testing is ensured: the overall performance of Diagnostica Stago's reagents for both routine and speciality testing have been demonstrated by the thousands of laboratories using these

products on a daily basis. The system is also ergonomic with excellent connectivity.

## Involvement of technical teams

In order to ensure successful installation, it is critical to involve the technical teams as the project is being initiated, but it is also necessary for suppliers to have sufficient resources to provide continuing technical support. Training also provides an opportunity to demonstrate that medical technologists can provide new added value functions with regard to biotechnical validation, quality and accreditation. In the context of this "industrial" progression of laboratory testing, these new functions are becoming increasingly important.

In the haematology department at SKMC, we process around 1000 specimens per day, which include routine haematology and coagulation testing, special haematology and coagulation testing, bone marrow processing and flow cytometry. Coagulation is a vital part of our testing activities, which include monitoring patients on anticoagulant therapy, pre-surgical screening and investigation of coagulopathies.

**Q. When did you invest in STA-R Evolution automated coagulation analysers for these tests and what were your reasons for choosing these instruments?**



The core lab at SKMC.

We installed the first STA-R Evolution analyser in our lab in 2008, and then followed this by the second STA-R Evolution analyser in 2010. Because the work load was increasing, we had decided we needed a fully automated stand-alone work station with high throughput and rapid processing of STAT samples without the need to interrupt the current testing.

**Q. What effect did the introduction of these analysers have on the organisation and productivity of the lab, and particularly on TATs?**

The STA-R Evolution analysers are fully automated coagulation analysers designed to integrate comprehensive testing with minimal hands-on specimen handling. The analysers are fully integrated with the Laboratory Information System, which reduces turnaround times, increases quality and improves efficiency in the pre-analytical processing of specimens.

**Q. Were you satisfied with the training and technical support you received?**

The efficiency during the implementation, and in the planning and training provided by Diagnostica Stago played a vital role in

the success of this project. This support continues to be available, with technical support provided as well as further updates and training workshops.

**Q. Will you still be able to cope should your workload increase substantially?**

Recently, we implemented a fully automated coagulation line integrated with two STA-R evolution analysers. This new technology is designed to accommodate a larger volume of work that can be completed in an efficient and timely manner.

**Q. Finally how would you say that medical and technical staff, and most importantly the patients, have benefited from the introduction of these coagulation analysers?**

The automated system eliminates almost all hands-on specimen handling for routine tests. It improves turnaround times and ensures that specimens are processed in an efficient and consistent manner. This allows us to provide high quality patient care.

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## The STA-R Evolution® line and Total Laboratory Automation



## The easiest way to connect Coagulation to automated robotic lines

- **Total Laboratory Automation** provides the clinical laboratory with: improved workflow, enhancements in sample handling and management, while maintaining the quality of results.
- **The challenge** to the laboratory that chooses to proceed with total automation is the selection of instrumentation that will best meet their technical requirements.
- **Working in cooperation** with Total Laboratory Automation system vendors, Diagnostica Stago already offers with the STA-R Evolution® line, the most flexible solution to interface Coagulation with automated robotic lines.



At the Heart of Haemostasis

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