



# Providing Effective Blood Gas Testing and Data Management at Memorial University Medical Center

Partnering for better critical care testing

Case Study

Answers for life.

**SIEMENS**

**“The analyzers require a minimal amount of maintenance. This has really helped the staff. If maintenance is needed, there is a step-by-step video on the system to help them through it.”**



RAPIDLab 1265 Blood Gas system

Blood gas testing is an integral part of the critical care environment at Memorial University Medical Center (MUMC), an award winning 530-bed tertiary care hospital in Savannah, Georgia. The hospital opened its doors in 1955, and since then has developed into the most advanced healthcare provider in the region, serving the needs of a population across a 35-county area in southeast Georgia and southern South Carolina.

MUMC is a regional referral center for cardiac care, cancer care, high-risk obstetrics and neonatology. In addition, the hospital has the region's only Level I trauma center, the region's only children's hospital, and conducts state-of-the-art research into the molecular genetics of cancer. With multiple specialty areas to support, MUMC has a high patient workload: in 2009, the hospital had 24,793 admissions, performed 22,861 surgeries, and treated 276,948 outpatients. The high patient workload creates a heavy demand for blood gas tests at MUMC – but in 2007, the hospital identified a serious issue with its blood gas testing program. “It had become apparent that test results were not reaching the people they should, as fast as they should,” says Linda Dominy, Director of Cardiopulmonary Services. “We were suffering from partial connectivity, poor information supply, and significant lost billings.”

Earlier in 2007, Memorial University Medical Center had contracted another vendor for a blood gas data management system and a computer interface with the hospital's electronic medical records. “But the vendor could not provide the support needed to successfully integrate with our medical records,” Dominy adds. “At that point, we reached out to Siemens Healthcare Diagnostics to partner with us for a complete blood gas testing solution. We already knew their systems were high quality and offered good value, and we were reassured by the number of personnel who could be on-hand, and on-site, to help us.”

The problems experienced by MUMC are increasingly common in today's healthcare environment. The organizational complexity of modern hospitals challenges vendors to deliver a critical care testing solution that connects and integrates diverse care facilities and analyzers, streamlines test requisitioning and result reporting, reduces costs, and elevates the quality of test results. With thousands of orders, tests results, billings and multiple operators to manage, effective data supply and management becomes a critical consideration.

A dedicated team of specialists from Siemens successfully resolved the data supply and management issues at MUMC within weeks. They installed a blood gas testing solution that integrated RAPIDLab® and RAPIDPoint® blood gas analyzers with the RAPIDComm® Data Management System. A mix of RAPIDLab 1265 and RAPIDPoint 405 analyzers was chosen for cardiovascular operating rooms, the emergency department, the neonatal ICU and the adult ICU. All of the analyzers interface with the RAPIDComm system, which allows centralized management of multiple Siemens blood gas analyzers and operators, and helps to standardize testing procedures, facilitate compliance, and improve risk management.

The outcome at MUMC is that patient results from blood gas analyzers are now hitting the medical record, and essential data is reaching key personnel in a timely manner. Post installation, a performance improvement project at the hospital investigated the timeliness of delivery of critical blood gas results to physicians. Linda Dominy reports that the data management system is able to flag all critical values, and requires a response by the therapist. “This has led to a very good process for documenting proper notification.”

**“We now have a blood gas program that delivers the data integration we need, from a partner we can count on.”**

Linda Dominy, RRT, MHA  
Director of Cardiopulmonary Services  
Memorial University Medical Center  
Savannah, Georgia, U.S.



RAPIDComm Data Management System

“It took the team less than eight weeks to install the systems, run equipment and staff through validation and training, and go live,” says Frank Lunsford, Siemens Critical Care Trainer for MUMC. “Everyone who needs to be is trained, and inspection ready.”

“The entire implementation was very positive on every level,” comments Linda Dominy. “The initial education of our staff was excellent. Frank and his colleagues provided a very thorough competency. His team worked hard, coming in on all shifts to make sure everyone had a chance to participate. In addition, we had outstanding technical support for the set-up and correlation studies on the new equipment. We have subsequently worked with Siemens support specialists for several CAP inspections, and have always done very well.”

MUMC deploys its RAPIDLab 1265 analyzers in high-volume critical test areas and the emergency department. The RAPIDLab 1265 blood gas system provides an all-inclusive test menu encompassing blood gas, electrolytes, metabolites, neonatal total bilirubin, and full CO-oximetry. According to Linda Dominy, these RAPIDComm-interfaced systems help to facilitate patient identification at the bedside, upload to the electronic record upon analysis, and enable automatic billing upon completion. This has assisted the hospital in meeting National Patient Safety Standards, Joint Commission, CAP, and state regulations, and has kept costs low. In other areas, such as the OR, RAPIDPoint 405 blood gas analyzers are in place. These wireless-connected point-of-care systems permit immediate testing with a fast turnaround, and offer the convenience of easy portability for staff at MUMC.

Linda Dominy makes further observations on the performance of the Siemens analyzers at MUMC. “Blood gas analyzers have to be fast and reliable,” says Dominy. “The Siemens systems have provided that. Therapists are able to obtain accurate results quickly. We like the patient safeguards they provide, too. If analyzer QC conditions are not met, we can remotely lock out operators until they are.”

“Our physicians count on the analyzers to offer input based on the available clinical data,” she adds. “Our entire environment centers around evidence-based medicine and protocols.”

The resolution of the data integration issues at MUMC reflects the resources and expertise Siemens can dedicate over the long-term to its blood gas testing partners. World-class analyzers and state-of-the-art data management systems are backed by the vital “human factor” - the multiple support, education and networking specialists that are so essential in creating a successful critical care solution.

“The service and support from Siemens is excellent,” concludes Dominy. “They helped the hospital throughout the installation, and got us up and running quickly. They worked very closely with us to deliver the vital data integration we needed.”



Memorial University Medical Center

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