

InteliQ QC on Siemens Atellica Solution

Papa Giovanni XXIII Hospital Case Study

The Challenge: How to optimize QC workflow to meet increased testing demand

As part of a major renovation and laboratory improvement initiative, seven new Siemens Atellica® Solution analyzers were installed at Papa Giovanni XXIII hospital to meet increasing testing demands for this prestigious state-of-the-art facility in Bergamo, Italy. With the addition of these new analyzers there was a need to optimize and streamline the current quality control (QC) workflow with a stronger focus on patient-oriented QC. The objective was to define a new quality control strategy that would address several pain points and result in simplifying the use of quality control products, reducing manual activities, improving timely reporting, and most importantly improving the quality of patient results.

Lab Details	
Name:	Papa Giovanni XXIII Hospital
Location:	Bergamo, Italy
Size:	900 beds, 100 critical care
Total Volume:	4.4M tests / yr
CoreLab Volume:	10,000 tests / day
# of Analytes:	122

Solutions

With the help of Bio-Rad Laboratory's certified Lean Six Sigma Green Belt specialists, a workflow analysis was conducted in the Core Lab to observe the current quality control and data management process from sample preparation to the release of patient results. Following the Six Sigma DMAIC phases of define, measure, analyze, improve, and control, the outcomes of the workflow analysis provided the Core Lab with guidance on the type and number of QC materials to use, the number of QC levels required, and the frequency of QC runs needed to achieve an optimal QC process.

Among the recommendations to optimize workflow and increase laboratory efficiency was to take advantage of Atellica's onboard refrigerated storage compartment and eliminate manual steps such as aliquoting QCs by utilizing Bio-Rad's InteliQ quality controls. The InteliQ controls were in analyzer-compatible tubes, labelled with Siemens compatible barcodes enabling minimal QC preparation and increasing workflow efficiencies. In addition to the InteliQ quality controls, Bio-Rad's Unity and Mission: Control software solutions were recommended for data management to focus on reducing patient risk.



Results

The Core Lab observed significant efficiency gains to their QC workflow on their Siemens Atellica Solution analyzers using Bio-Rad's InteliQ load-and-go quality controls, Unity Data Management, and Mission Control software.

■ QC Product Consolidation

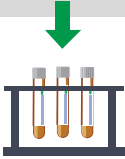




The Core Lab was able to reduce the QC products in use from 10 different products to 7 InteliQ quality controls and one Liquichek quality control from Bio-Rad resulting in a 20% reduction in the number of QC products needed. Due to InteliQ's ready-to-use format, the laboratory also reduced the total number of QC aliquots in use by 73%.

▪ **Decrease in Manual Activities**

The Core Lab saw the most significant improvements from the addition of the InteliQ controls on workflow time savings with a 54% decrease in manual steps, resulting in 2 hours and 18 minutes of time saved per week: a 67% decrease. In addition, the reduction in manual steps also decreased the risk for error by 84%. This significant improvement allowed the Core Lab to increase productivity and improve turnaround time to patient results.

▪ **Improved QC Performance**

Through integration with Bio-Rad’s Unity Real Time software, the Core Lab was able to compare their QC results with large peer groups to improve overall QC performance. In addition, Unity Real Time supported the Core Lab’s risk management program allowing the lab to achieve QC goals and simplify reporting.

Results of workflow optimization with Bio-Rad’s InteliQ, Unity, and Mission: Control solutions				
20%	73%	54%	67%	84%
Decrease in # of QC products required	Decrease in # of aliquots used	Decrease in manual steps required (per week)	Decrease in manual time required (per week)	Decrease in risk for error (per week)
				

Conclusion

Following the comprehensive workflow analysis and incorporation of Bio-Rad’s InteliQ quality controls, Unity Data Management, and Mission Control software in conjunction with the Siemens Atellica Solution, the QC workflow at Papa Giovanni hospital was transformed into an efficient streamlined process saving the Core Lab a significant amount of time and resources while improving the reliability of patient test results.

The Core Lab found InteliQ quality controls easier to manage than traditional QC materials because of the elimination of several steps such as downloading and printing inserts, manually entering QC ranges, printing and verifying barcode labels for each QC level, transferring QCs into sample tubes, and loading the QC samples on board the analyzer. InteliQ’s unique QC sample tracking and easy XML data upload of lot-specific QC values help automate the QC process by eliminating manual entries and related errors. Moreover, InteliQ controls come in pre-barcoded tubes and can be stored refrigerated on board the Siemens Atellica Solution analyzer allowing the lab to schedule QC runs with ease.

“The adoption of the InteliQ controls and Unity real-time software produced the greatest improvement in terms of manual activity, resulting in savings in cost and error reduction.”

- Dr. Silvia Gelsumini, Clinical Chemistry Manager

The use of Unity Real Time allowed the Core Lab to detect out-of-control events in real time and provided traceability to the entire QC process, while the Mission Control software was a useful quality indicator to help quantify the level of risk with measures to mitigate risk of patient harm.

Overall, the workflow analysis proved to be a useful tool for the Core Lab when undergoing important technological updates to their laboratory and had a positive impact on their entire QC process and staff. “We are confident to say that today, all the areas in our laboratory can be controlled by Third Party QC with an automated process” - Dr. Silvia Gelsumini, Clinical Chemistry Manager.

Visit qcnnet.com/inteliq or qcnnet.com/siemens for more information.

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