



Improving Quality Control Management with **navify** Quality Performance: A Case Study in Thailand



Executive Summary

A medical institution in Thailand faced typical quality control (QC) management challenges within its high-throughput Biochemistry Clinical Pathology Laboratory. Adopting **navify** Quality Performance has significantly improved QC processes through automation and real-time statistical analysis.

The **overall QC efficiency improved by 30%**, enhancing test accuracy and reliability. **Monthly time spent on generating reports for QC results was reduced by 87%**, from 4 hours to 30 minutes, and **quarterly sigma calculation times decreased by 93%**, from 8 hours to 30 minutes. These improvements have allowed the laboratory to quality oversight and monitoring, reduce manual intervention, and focus on higher-priority tasks, thereby significantly enhancing productivity and maintaining high-quality standards.

+30% Overall QC efficiency

-87% Time spent in managing QC results

-93% Quarterly sigma calculation times

Challenges in Quality Control Management

Before implementing **navify** Quality Performance, the laboratory faced the following obstacles in managing its quality control (QC) processes:



Staff Shortages: Limited personnel hindered the ability to increase QC frequency without imposing considerable strain on the team.



High Workload: Daily processing of more than 3,000 samples constrained available resources for supplementary QC activities.



Technological Limitations: Existing technologies lacked automation and scalability, exacerbating staffing challenges.

Increasing QC frequency and sample volume under these conditions would necessitate more personnel or significant technological upgrades to sustain operational efficiency and measurement accuracy.

Introduction to **navify** Quality Performance¹

For over a decade, the laboratory has depended on **navify** Quality Performance to effectively manage QC process. Before the implementation of **navify** Quality Performance, medical technologists had to physically review QC results on instrument monitors, requiring careful supervision and manual verification.

navify Quality Performance is a web-based comparison tool that enables clinical laboratories to quickly and accurately evaluate the performance of their assays through statistical analysis of the daily quality control (QC) data. It generates real-time reports using QC data from laboratories worldwide using the same control lots, instruments, and assays. These reports allow users to compare the lab's performance against a peer group.

*"As a lab manager, I can easily monitor our performance and compare it with peer data, using peers as a reference. The real-time performance insights are easy to access, and when corrective action is needed, **navify** Quality Performance provides complementary information instantly."*

Head of Biochemistry Clinical Pathology Lab

navify Quality Performance allows access to information relevant to ISO 15189 guidelines without manually entering data.

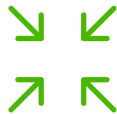


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navify Quality Performance enhances QC processes through the following:



Centralization of QC Data: For performance tracking and rapid issue detection.



Streamlined Anomaly Detection: Enabling rapid identification of out-of-range results.



Improved Decision-Making: Providing tools to guide timely and effective corrective actions.



Workload Reduction: Decreasing reliance on manual reviews, enabling focus on higher-priority tasks.

Benefits of navify Quality Performance

The adoption of **navify** Quality Performance delivered measurable gains in QC management, including reduced processing times, increased test accuracy, and more efficient resource utilization.

QC Performance Boost

The lab participates in Thailand’s national Continuous Quality Improvement (CQI) program. Within this program, the Clinical Pathology Department grants certification to laboratories that achieve sigma scores above 6 in at least 80% of chemistry assays and above 4 in 60% of immunology assays.

After implementing nQP, the lab consistently met these standards and experience a +30% increase in QC efficiency. The improvement was driven by several operational gains:

- faster and more accurate error detection
- higher QC pass rates across assays, reduced turnaround time for corrective actions
- improved sigma metrics, and a significant reduction in manual QC analysis time
- real-time peer benchmarking and anomaly validation

+30% in QC efficiency



“navify Quality Performance empowers medical technologists to feel confident in their QC results before taking corrective actions. It provides valuable insights and supports informed decision-making, offering reliable backup information to ensure accurate and effective corrective measures.”

Head of Biochemistry Clinical Pathology Lab

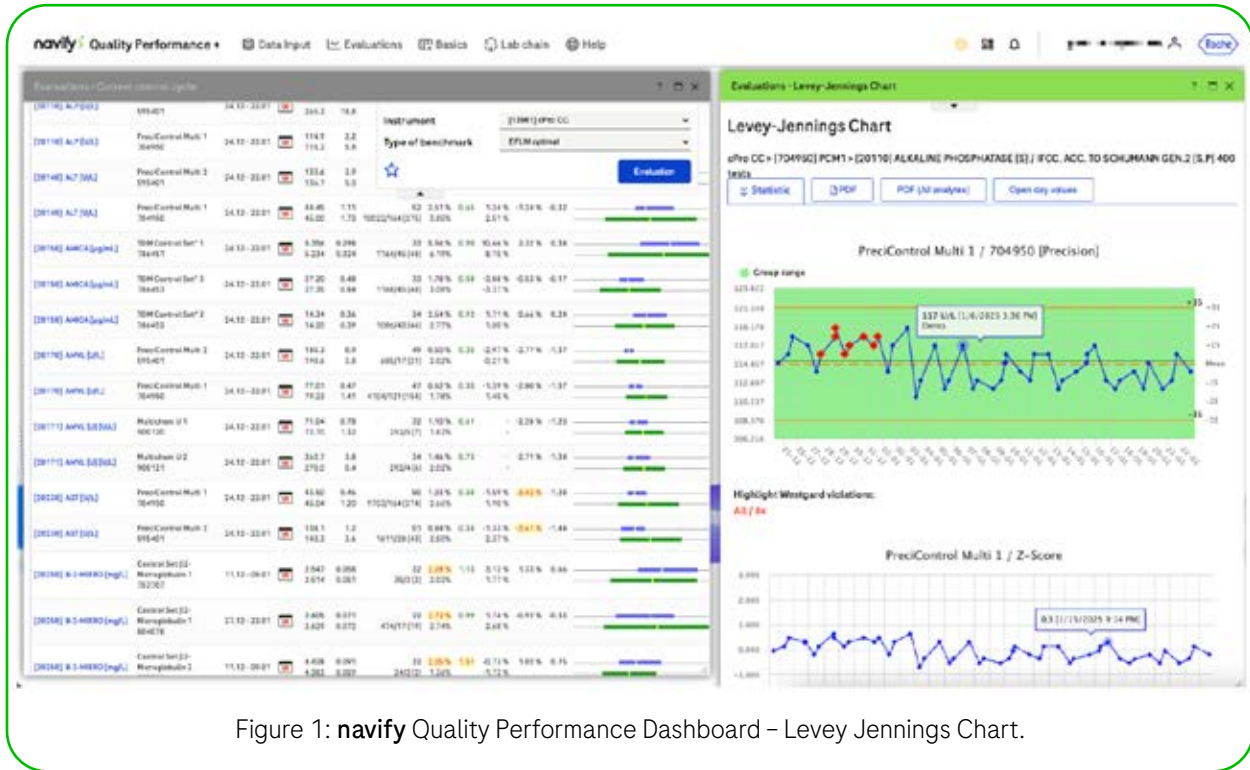


Figure 1: navify Quality Performance Dashboard – Levey Jennings Chart.

Efficiency in QC Analysis

Another benefit of implementing navify Quality Performance was reducing the time required to analyze Quality Control results. Previously, the laboratory staff spent approximately 4 hours each month on this labor-intensive task. However, with the centralized data and automated processes provided by navify, this time has been dramatically reduced by 87%, reducing the effort to just 30 minutes per month.

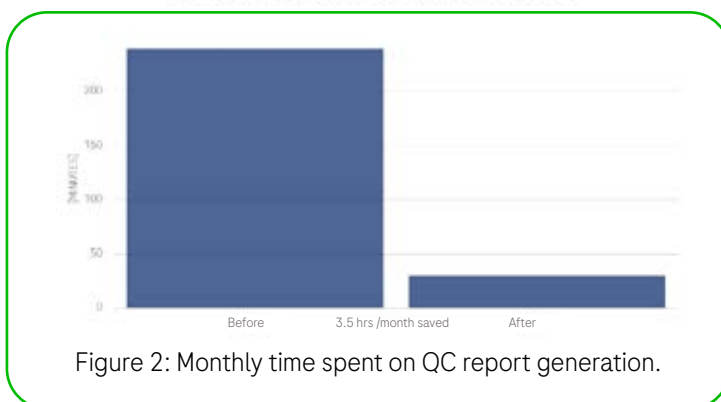


Figure 2: Monthly time spent on QC report generation.

-87%
time spent on QC
report generation

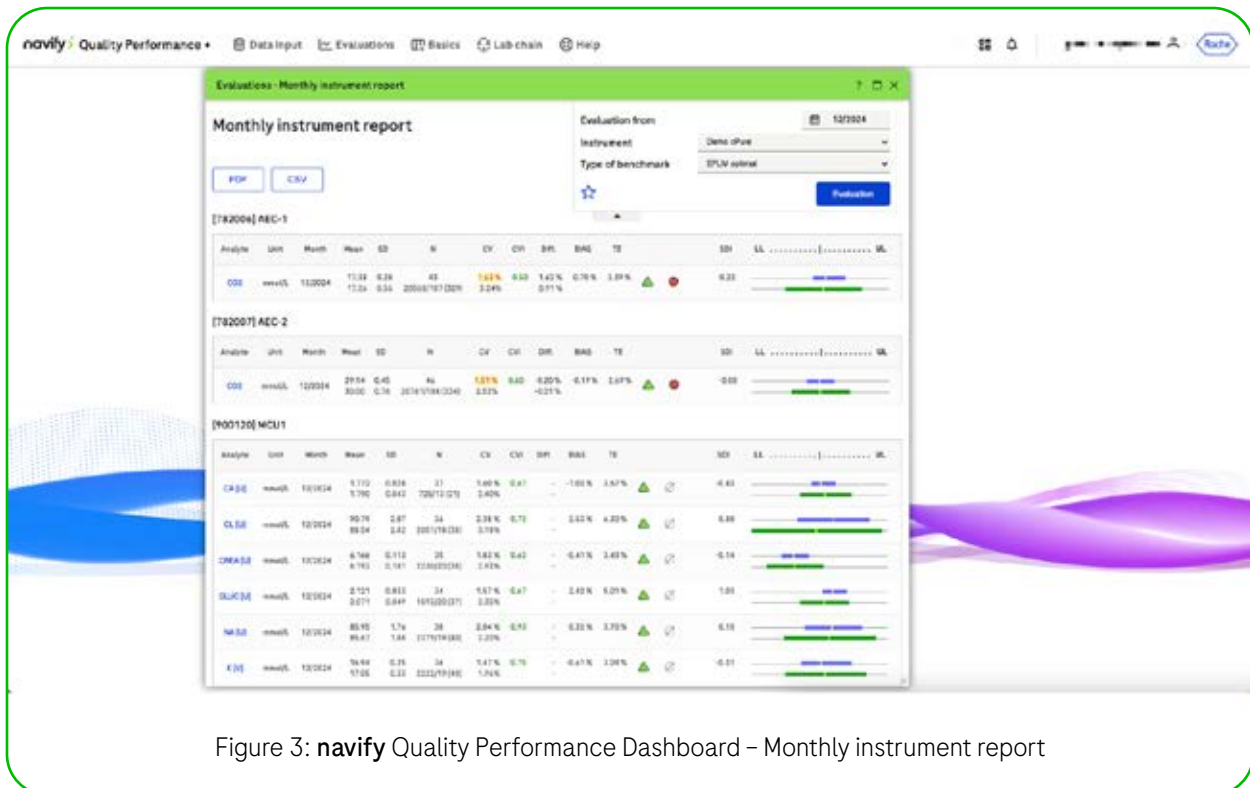


Figure 3: navify Quality Performance Dashboard – Monthly instrument report

“navify Quality Performance has significantly reduced the need for manual calculations and eliminated repetitive tasks through its automation features, including the monthly statistics and instrument report programs.”

Clinical Pathologist

Sigma Calculation Time Savings

Another advantage of adopting **navify** Quality Performance is the reduced time required for quarterly Sigma calculations. This process, which used to consume 8 hours of the laboratory's time every quarter, has been streamlined to take 30 minutes, thanks to the advanced data handling and automation capabilities of **navify** Quality Performance. This enables the lab to perform these essential calculations more frequently and with less effort.

"navify Quality Performance can reduce human errors and enhance the reliability and accuracy of QC results. For instance, the IQC data from the lab is automatically sent to navify Quality Performance and statistically processed by the program, eliminating manual errors that come from copying and calculating data."

Clinical Pathologist

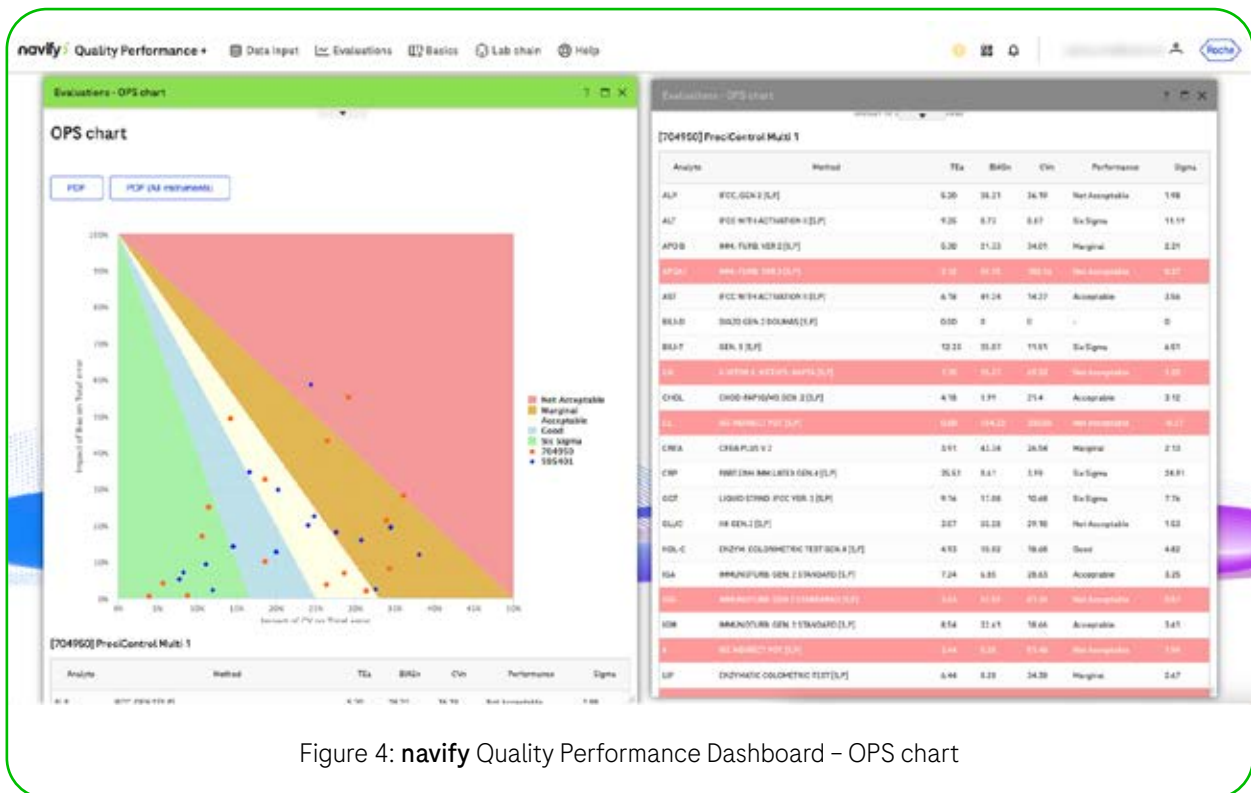


Figure 4: navify Quality Performance Dashboard – OPS chart

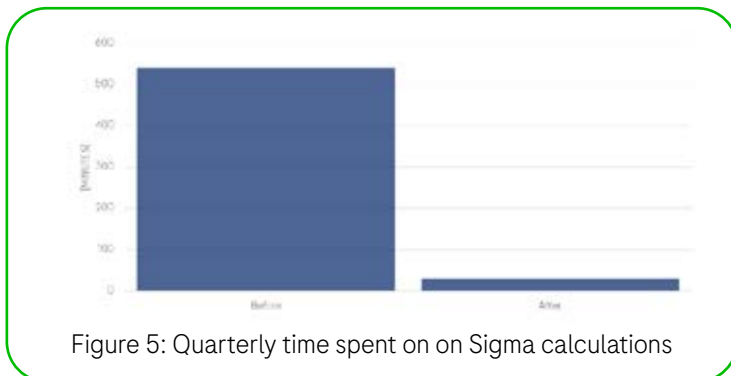


Figure 5: Quarterly time spent on on Sigma calculations

-93%
time spent on
Sigma calculations

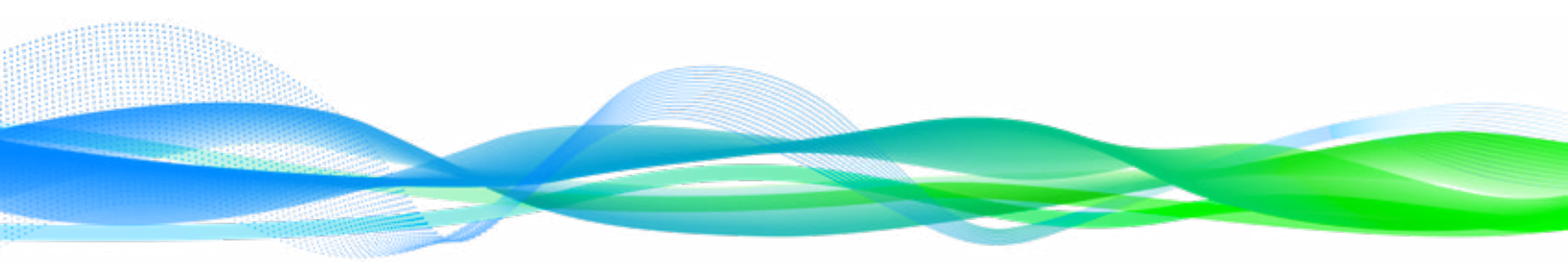


Conclusion

Implementing **navify** Quality Performance has improved the institution's QC management practices. By overcoming staffing constraints and technological limitations, **navify** Quality Performance provided a comprehensive solution that improved QC efficiency and performance.

The benefits achieved highlight the critical role of **navify** Quality Performance in enabling the laboratory to maintain its high standards in quality assurance while managing a substantial daily workload.

This case study exemplifies how advanced QC solutions can improve laboratory operations, ensuring accuracy, reliability, and efficiency in medical testing environments.



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