ThermoFisher SCIENTIFIC

The state of laboratory QC in 2025

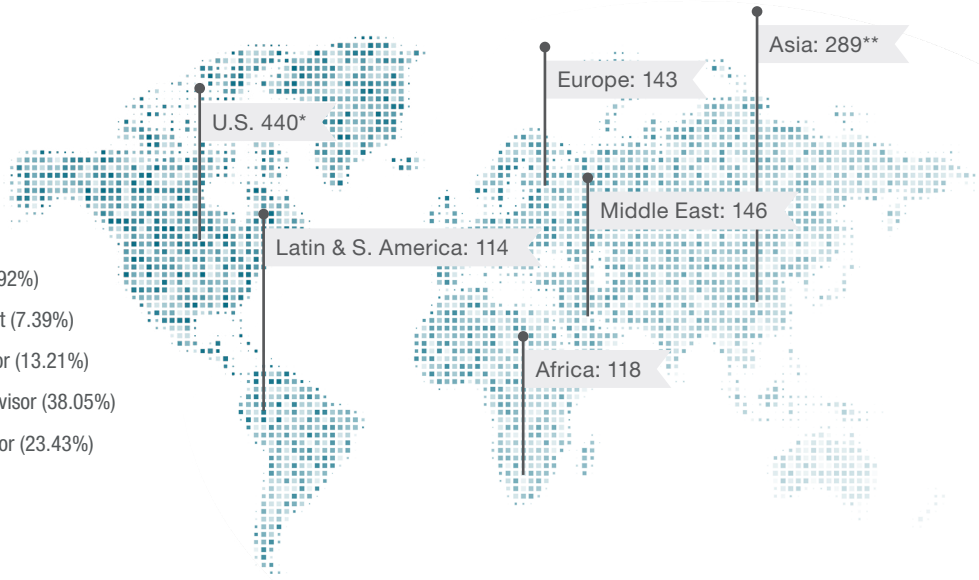
Challenges and opportunities

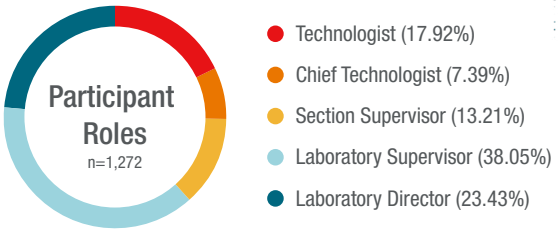
Sten Westgard, MS
Director of Client Services and
Technology, Westgard QC, Inc.

The 2025 Westgard Global QC Practices Survey

An analysis of today's QC practices around the world

The 2025 Westgard Global QC Practices Survey is one of the most extensive studies of its kind, capturing insights from more than 1,200 laboratories across 110+ countries (below). The findings reveal QC practices under pressure—rising daily out-of-control events, heavier repeat workloads, and limited adoption of best-practice standards. Yet the results also highlight opportunity: laboratories that modernize QC design, strengthen rule use, and adopt smarter tools can boost efficiency, lower costs, and restore confidence in results.





*Includes Puerto Rico

**Includes India to Australia

thermo scientific

Key results

QC practices are getting more out of control

Approximately 33.3% of labs globally report being "out of control" every day or multiple times per day, up from ~22.7% in 2021. They also report a rise in out-of-control events that occur one or more times per day: 10.9% (2021) to 15.7% (2025) globally.

Frequent repeats and increasing QC runs

Labs repeating controls during troubleshooting increased from ~68% in 2021 to ~75% in 2025. The frequency of QC testing has increased on both ends as well: once-a-day QC rose from 53.6% to 57.8%, and QC run 3 or more times per day increased from 19.6% to 22.9%.

Mixed progress on limits, rules and standards

Use of the 2 SD limit (on all tests) globally dropped from 59% to 52%, but most labs still use 2 SD for rejection or warning + rejection, which is associated with high false rejection risk.

Use of manufacturer ranges declined (2021 to 2025) and use of actual mean and SD increased. Use of peer group ranges increased. Only ~15% of labs follow specific QC best-practice guidance like CLSI C24.

QC cost awareness and control actions

Fewer labs reported "doing nothing" about QC costs, from ~64% in 2021 to ~54% in 2025 globally. Labs consolidating QC into fewer controls increased from ~13% to ~20%. More labs are switching to less expensive control materials from ~6% to ~9% in 2025.

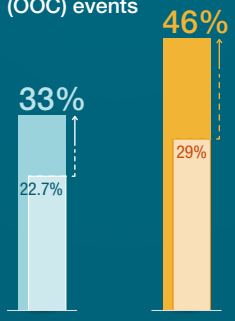
Decline in patient data QC and moderate uptake of third-party controls

Use of patient data QC declined globally from ~13.7% to ~8.9%. Adoption of third-party liquid assayed controls rose from ~43% to ~49%; unassayed third-party controls also increased from ~20% to ~25%. Manufacturer controls usage declined slightly.

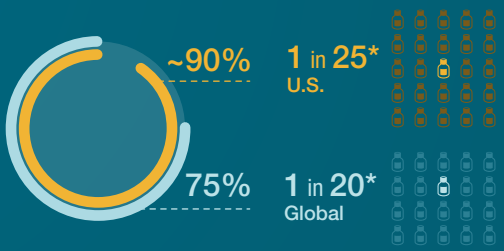
2025 QC Practices Survey—Global vs. United States

● Global ● U.S.

Daily out-of-control (OOC) events

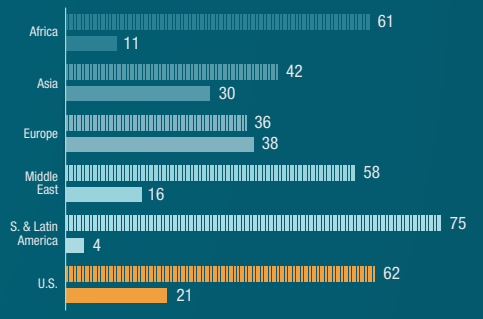


Labs repeating controls



*Repeat controls until it falls in

QC frequency



2 SD use on all tests

Global
● Still common ~52%

U.S.
● Still dominant 63.9%

The U.S. leads the world in using the wrong control limits on all tests

Fueling false rejections

Patient data QC

Declined from 2021

13.67% down to 8.9%

11% down to 6.2%

CSLI C24 adoption

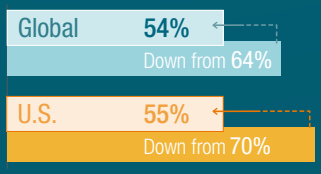
approximately

15%

Global

Cost actions

Fewer labs "do nothing"



Consolidation

20%
Consolidate controls

27%
Consolidate controls

>2X
Consolidation % rate in 2021

Implications

↓ Opportunity: Reduce costs and restore confidence with fewer repeats and recalibrations resulting from Smarter QC design + structured education (Six Sigma, peer benchmarking)

↑ U.S. labs are more burdened with daily OOC events, heavier repeats, and more technician burden. These are self-inflicted wounds. New instruments aren't needed. Retraining is. Better, smarter software can enable the right QC practices and fix these problems more quickly and easily.

Potential impact and implications

Operational burden and inefficiency increase

With more frequent out-of-control (OOC) events, more repeats, and increased QC frequency at both extremes, labs are likely burning more staff time, increasing reagent/control costs, delaying diagnostics, and creating inefficiencies in workflow.

False positives / false rejections persist

Continued heavy reliance on 2 SD limits (especially for rejection) can lead to elevated false rejection rates, unnecessary repeats and lower trust in QC systems.

Quality standards vs. practice gap

Although standards like ISO and CLIA have increasing influence, the uptake of guidance like CLSI C24 remains low. That suggests many labs do not have structured frameworks for QC optimization, which limits their ability to scale consistent performance improvements.

Cost pressure and opportunity

Some labs are making changes (control consolidation, lower-cost controls, overall cost controls), but most still have yet to make significant cost-saving changes. There's a large opportunity for savings, especially if labs adopt smarter QC design, reduce unnecessary QC runs, and reduce false rejections.

Customer training + resources required

The decline in patient data QC suggests that labs may lack the expertise, tools, or confidence to implement more advanced QC approaches. Tools that simplify QC design plus structured education, such as Six Sigma, rule optimization, and peer benchmarking, could unlock large wins.

Risk of quality slip if QC fatigue grows

When OOC events are frequent and QC becomes a repeated chore rather than a genuine alarm, staff morale may suffer and the potential for serious mistakes increases; for example, releasing results despite OOC. Labs might default to "repeat until in" tactics, which are grossly inefficient and risky.

Bottom line

The 2025 survey paints a picture of QC in crisis: increasing out-of-control events, repeated QC workload, slow adoption of best-practice rules, and only partial cost optimization. For manufacturers, lab managers, and regulators, this suggests strong demand for tools that:

- Drive visibility and early detection via dashboards and alerts
- Empower labs to set better QC rules (Six Sigma, mean/SD and reduced false rejections)
- Provide education and training to close the standards-practice gap
- Offer cost-efficient QC materials and practices, such as support for consolidation

Labs that invest in smarter QC design now may gain efficiency, lower cost, improve staff confidence, and reduce error risk.

View the complete 2025 Westgard Global QC Practices Survey results

Learn more at **thermofisher.com/masqc**