

Capital Equipment Request

Replacement of the Sysmex XN-550 Hematology Analyzer

Purpose

The purpose of this request is to obtain approval for the purchase of a new Sysmex XN-550 Hematology Analyzer for the new laboratory facility. Replacing the current analyzer during the laboratory transition will improve reliability, reduce long-term operating costs, minimize downtime, and ensure continued compliance with CLIA regulations while providing uninterrupted patient care.

Background

The current Sysmex XN-550 hematology analyzer was purchased in 2017 and has served the laboratory well over the past nine years. As the instrument continues to age, it has begun experiencing hardware failures and reliability concerns that increase the risk of unexpected downtime.

Recent issues with the current analyzer include:

- Replacement of the internal hard drive.
- Intermittent power failures, with the analyzer powering on and off unexpectedly.
- Monitor connectivity issues caused by failing cords and connections.
- Increasing likelihood of additional age-related hardware failures.

Although the analyzer remains operational, these recurring issues indicate that the instrument is approaching the point where repairs will become more frequent and more costly.

Financial Considerations

The purchase price of the new Sysmex XN-550 is **\$45,000**, the same purchase price paid for the original analyzer in 2017.

The service agreement comparison demonstrates a significant long-term cost savings.

Current Analyzer

- Annual Service Agreement: **\$9,282.90 per year**

New Analyzer

- Year 1 Service Agreement: **No charge**
- Years 2-7 Service Agreement: **\$6,329.25 per year (locked in for six years)**

Cost Savings

By replacing the analyzer, the laboratory will realize the following savings:

- **First year savings:** \$9,282.90 (free service agreement)
- **Annual savings for the following six years:** \$2,953.65 per year
- **Six-year service savings:** \$17,721.90
- **Total service agreement savings over seven years: \$27,004.80**

These savings alone offset a substantial portion of the purchase price while also reducing the financial risk associated with maintaining an aging analyzer.

Benefits During Laboratory Transition

The timing of this purchase is particularly advantageous as the hospital prepares to transition into the new laboratory.

Installing a new analyzer before occupancy of the new laboratory will:

- Allow installation to occur during the laboratory move rather than relocating an aging instrument.
- Eliminate unnecessary disruption to patient testing.
- Provide a smoother and more efficient transition into the new facility.
- Reduce the likelihood of equipment failure during a critical operational transition.
- Ensure laboratory staff begin operations in the new facility using reliable, manufacturer-supported equipment.

Regulatory and Validation Advantages

Introducing a new analyzer during the laboratory move also reduces the validation burden associated with relocating older instrumentation.

If the current analyzer is moved into the new laboratory, extensive installation qualification, operational verification, performance validation, and documentation would be required to demonstrate continued compliance with CLIA standards. This process often requires manufacturer field engineers and additional laboratory personnel time, increasing both costs and delays.

Installing a factory-new analyzer significantly streamlines this process because:

- Installation is completed by the manufacturer.
- Performance verification follows the manufacturer's installation protocol.
- Validation studies can be completed more efficiently.
- Engineering time required for troubleshooting an aging instrument is minimized.
- The laboratory can return to full operation more quickly while maintaining CLIA compliance.

Operational Benefits

A new Sysmex XN-550 will provide:

- Improved reliability and system uptime.
- Reduced risk of unexpected instrument failure.
- Lower maintenance costs.
- Reduced dependence on emergency service calls.
- Continued manufacturer support.
- Improved confidence in uninterrupted patient testing.

Reliable hematology testing is essential for emergency department patients, inpatients, outpatient services, and physician clinics. Reducing the risk of downtime directly supports patient safety and timely clinical decision-making.

Recommendation

Considering the age of the current analyzer, documented equipment failures, significant service agreement savings, elimination of first-year service costs, reduced validation expenses, and the opportunity to transition seamlessly into the new laboratory, replacing the current Sysmex XN-550 with a new instrument represents the most fiscally responsible and operationally sound decision.

This investment will reduce long-term operating expenses, minimize downtime, simplify the transition into the new laboratory, and position the laboratory to continue providing high-quality, CLIA-compliant patient testing for many years to come.

Summary of Financial Impact

- Purchase Price: **\$45,000**
- Current Annual Service Agreement: **\$9,282.90**
- New Analyzer Service Agreement:
- Year 1: **\$0**
- Years 2–7: **\$6,329.25/year**
- Total Service Agreement Savings Over Seven Years: **\$27,004.80**

Approval of this request will provide both immediate and long-term financial savings while ensuring the laboratory enters the new facility with dependable, modern instrumentation capable of meeting the hospital's current and future patient care needs.