Quality Indicators and How They Benefit the Lab

> **ASHI Standard D.1.1 requires laboratories develop and monitor quality indicators:**
> **D.1.1** Each laboratory that performs testing must establish and maintain written policies and procedures that implement and monitor a quality system for all phases of the total testing process (that is, preanalytic, analytic, and postanalytic) as well as for general laboratory systems.
> **Re: D.1.1** - The QA program must include indicators of quality that will be monitored for all phases of laboratory testing. Appropriate (not just easily obtained) thresholds must be established for each indicator.

"You cannot manage what you cannot measure." Quality indicators are objective measures of laboratory practices and are used to determine how well the laboratory meets needs and operational expectations. Quality indicators:

- Give information about the performance of a process
- Highlight potential quality concerns
- Identify areas that need further study and investigation
- Track changes over time

Indicators should be designed to look at the laboratory path of workflow: pre-analytical, analytical, and post-analytical, as well support processes (laboratory organization, communication, education, environmental safety, resolving of complaints and nonconformities, etc.).

Useful guidelines for selecting quality indicators include:

- Fewer are better; it is often difficult for a laboratory to effectively track and address more than five or six indicators at a single time.
- Link the indicators to areas that need correction; select those that will be most meaningful to good laboratory performance.
- Measures should change as the environment and strategy changes; do not stick with the same indicators over long periods of time.

- Base the targets and goals for the measures on rational values, rather than values of convenience. They should be established based on the goal of good laboratory performance.

Characteristics of Quality Indicators:
- **Measurable**—the evidence can be gathered and counted
- **Achievable**—the laboratory has the capability of gathering the evidence it needs
- **Interpretable**—the laboratory should present (i.e., table, graph, text) the data in a manner that is easily interpretable and establish acceptable ranges
- **Actionable**—the laboratory must be able to do something (have a plan) if the indicator shows there is a problem
- **Balanced**—develop indicators that examine multiple aspects throughout the entire testing process (workflow path), as well as different support processes
- **Timed**—consider indicators with both short-term and long-term implications

Examples of Quality Indicators for pre-analytical phase of testing:
- Number of requests with patient identification errors/total number of requests
- Number of inappropriate test orders/total number of test orders
- Number of samples improperly labeled/total number of samples
- Number of samples with inadequate volume/total number of samples
- Number of samples collected with inappropriate container/total number of samples
- Number of lost-not received samples/total number of samples
- Number of duplicate test order/total number of tests orders

Examples of Quality Indicators for Analytical Phase of Testing:
- Number of incorrect results due to erroneous transcription and/or manual data entry in the computer system/total number of results requiring transcription and/or manual data entry in the computer system
- Number of reports with delayed delivery due to instrumentation failures/total number of reports
- Number of unacceptable external QC performance/total number of external QC performances
- Number of unacceptable internal QC performance/total number of internal QC performances

Examples of Quality Indicators for Post-Analytical Phase of Testing:
- Number of reports with erroneous patient or physician data/total number of reports
- Number of reports exceeding TAT/total number of reports
- Number of corrected reports/total number of reports

Examples of Quality indicators for Support Processes:
- Number of projects completed on-time/number of projects completed

- Number of client complaints/total number of clients