

Basics of Laboratory Quality Control

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Definitions

- **Quality Control** - QC refers to the measures that must be included during each assay run to verify that the test is working properly.
- **Quality Assurance** - QA is defined as the overall program that ensures that the final results reported by the laboratory are correct.
- “The aim of quality control is simply to ensure that the results generated by the test are correct. However, quality assurance is concerned with much more: that the right test is carried out on the right specimen, and that the right result and right interpretation is delivered to the right person at the right time”

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Definitions

- **Quality Assessment** - quality assessment (also known as proficiency testing) is a means to determine the quality of the results generated by the laboratory. Quality assessment is a challenge to the effectiveness of the QA and QC programs.
- **Precision** is the “degree of agreement among repeated measurements of the same characteristic on the same sample.
- **Accuracy** is how close results are to what is expected from a test.

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Variables that affect the quality of results

- **The educational background and training of the laboratory personnel.**
 - Management System.
 - Responsibilities of each member.
 - Experiences.
- **The condition of the specimens.**
 - Rules for collection of samples.
 - Rules for receiving submitted samples.
 - Rules for sample rejections.
 - Suitability of containers to the collected samples
 - Amount of samples required for each assay.
 - Rules for storage of samples.
 - Methods of disposal of samples.

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Variables that affect the quality of results

- **The controls used in the test runs.**
 - The application of the quality control system.
 - Accuracy and precision of results.
- **Reagents.**
 - Periodical stocktaking of reagents.
 - Expire date.
 - Suitable storage conditions.
- **Equipment and instruments.**
 - Periodical maintenance of instruments.
 - Suitable storage for equipments.
 - Suitable temperature for instruments.

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Variables that affect the quality of results

- **The interpretation of the results.**
 - Proper and correct interpretation of laboratory results.
- **The record of results.**
 - Laboratory results must be recorded.
- **The reporting of results.**
 - The reporting system in the laboratory

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