LABORATORY QUALITY CONTROL
Quality control:-
the process of detecting errors

MLT-DEpartment

Quality control (QC):-

- The principles of quality assurance, quality control, and quality management are the foundations for good laboratory results and work.
- Every laboratory test produces a result. However, until the result is verified by some means, it is not possible to be sure about its accuracy. Quality control is what will give confidence about the result.
- The technicians have to be sure of the accuracy of the test results.

What is the basic purpose of Quality control (QC)?

- To maintain a continuous record of the precision of the tests.
- It provides valid judgment on the accuracy of results by comparison with the known sera.
- This is very important for automated analyzers to check their performance.
- Monitor the analytic process and help to find which method is more accurate.
- This also helps to evaluate the technologist's skills.
- Determine analytical errors during analysis.

What are the characteristics of Quality control (QC) material?

- Available in sufficient quantity.
- It should be stable for a period of a minimum of one year.
- Keep in small volumes.
- Its concentration should vary minimally.
- Their composition should not vary from vial to vial.

What are the factors on which Quality control (QC) is dependent?

- The time between the collection and the performance of the test, e.g.

  Leukocytes and RBCs utilize glucose and cause a steady decrease in glucose concentration.
- Specimen storage also causes an error in the result.
- Evaporation of the sample may cause the wrong result, such as electrolytes.
- Exposure to light affects the Bilirubin level.
- Refrigeration will affect lactate dehydrogenase (LDH).
- Clerical mistakes may occur at any stage.

Males: 135 – 225 units per liter (U/L). Females: 135 – 214 U/L.

What are the errors in quality control (QC)?

- Quality control errors in the laboratory are classified into:

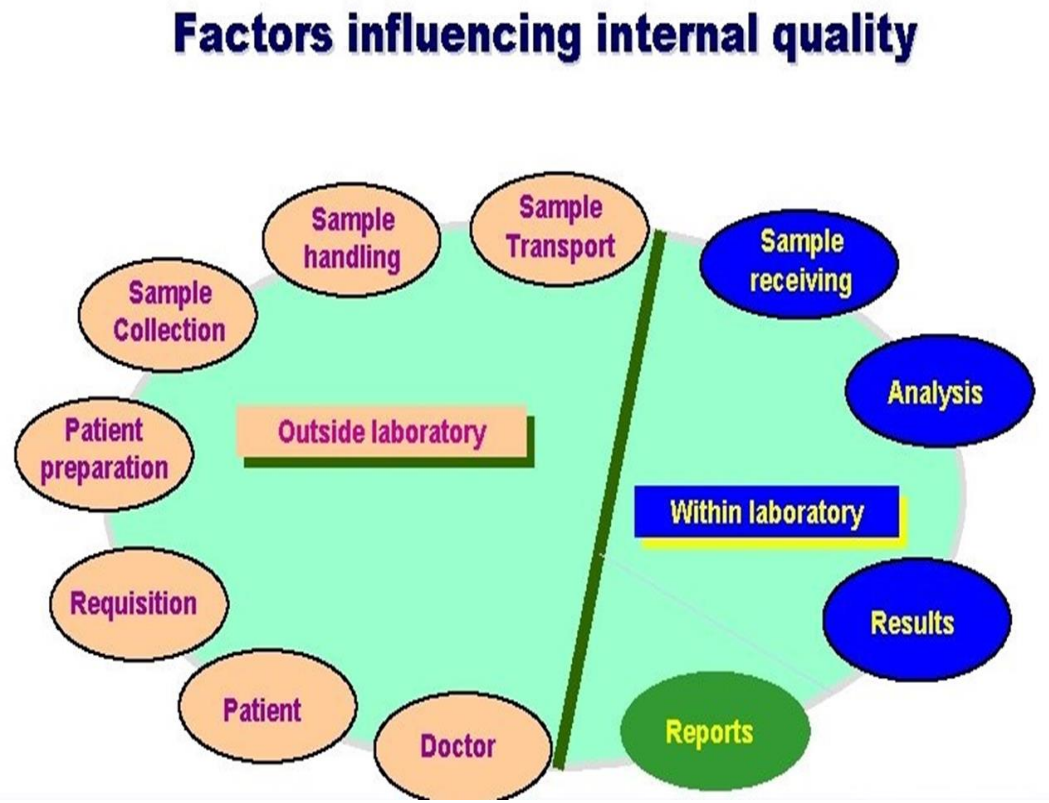
1. **Random errors:**
    - These are present in pipettes and volumetric glassware with manufacturing defects.
    - There may be a defect in the instruments and spectrophotometer.
    - There may be a defect in the cuvet temperature.
    - Light, temperature, and evaporation may affect the serum or plasma analyte values.

2- Clerical errors:

- These are unavoidable and should not be accepted.
- Labeling the wrong name of the patients.
- Delay in the transport of the sample.
- Incorrect calculations.
- These can be avoided by:
  1. Well-trained staff.
  2. By good working organization.
  3. Well-designed worksheets.
  4. Thorough checking of the results.

3- Systemic errors:

- There may be instability of the reagents.
- There may be an inaccuracy in the standards.
- If the method is nonspecific for the analysis.



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