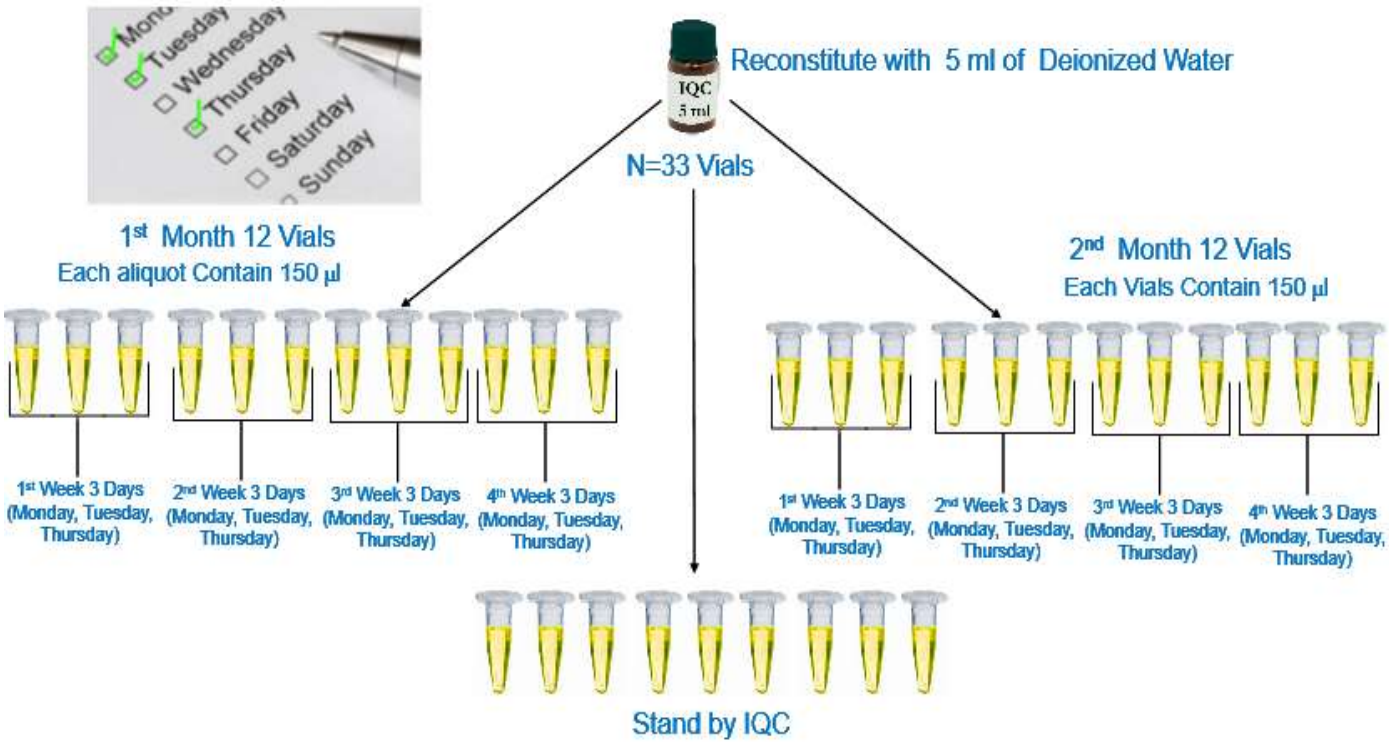
IQC preparation & aliquots



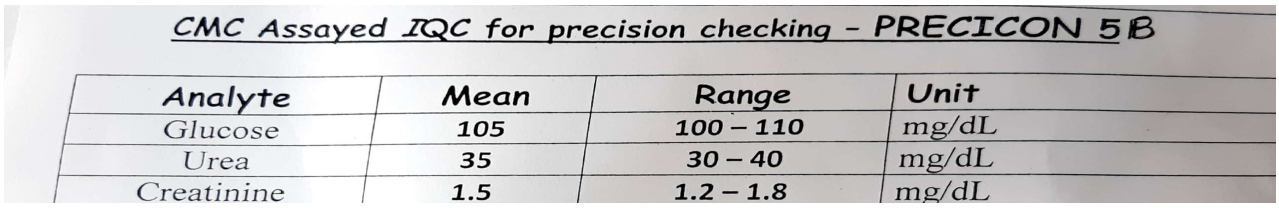
- In each year, 2 sets of IQC samples will be sent by CMC, Vellore
- Each set contains 3 vials of lyophilized/powdered analytes.
- Each vial should be reconstituted with 5 ml of deionized water as per the procedure given above, aliquots prepared and stored in the Deep Freezer compartment of the Refrigerator and strictly be used for 2 months only.
- The Laboratory Technician working in Rural and Urban PHCs should strictly run IQC sample on **Monday, Tuesday and Thursday** before processing the clinical samples.
- The IQC sample should be mandatory for Glucose, Cholesterol and Creatinine tests. Hence, all the Laboratory Technicians should strictly follow IQC run on the designated days.
- The values of the IQC should be plotted on a LJ Chart and displayed in the PHC.
- A thermocoal based display board with black chart or file pouches to be readily available in the PHC laboratory to display the LJ Chart.
- LJ chart should preferably be drawn using colour pens.

Preparation of Levey -Jennings (LJ) Chart

(Example: Glucose Test)

Calculate the SD (Standard Deviation) by using the formula:

1. First look at the reference chart for the IQC sample given by CMC, Vellore in which the Range and Mean values are given for each analyte/ parameter.
2. From the given Mean and Range values, find out 1 Standard Deviation (1 SD) by using the formula given below



CMC Assayed IQC for precision checking - PRECICON 5B

Analyte	Mean	Range	Unit
Glucose	105	100 – 110	mg/dL
Urea	35	30 – 40	mg/dL
Creatinine	1.5	1.2 – 1.8	mg/dL

SD = (Maximum Value – Mean) / 2

3. For Example:

   In Glucose analyte/parameter 1 SD value & 2 SD values are calculated as follows,

   Calculation of 1 SD:

   - Maximum Value given in the Range of the Reference Chart = 110 mg/dL
   - Mean Value given = 105 mg/dL
   - Hence, 1 Standard Deviation for Glucose Test = (110-105) / 2
   - **1 SD = 5/2 = 2.5**
   - By using the 1 SD Value of 2.5, calculate the 1 SD of the glucose analyte / parameter by adding the mean value of 105 mg/dL (105 + 2.5 = 107.5) which comes to 107.5 mg/dL

   Calculation of 2 SD:

   - Then proceed to Calculate 2 SD by multiplying 1 SD x 2.
   - **Hence, 2 SD = 2.5 x 2 = 5**
   - By using the 2 SD Value of 5, calculate the 2 SD of the glucose analyte / parameter by adding the mean value of 105 mg/dL (105 + 5 = 110) which comes to 110 mg/dL

4. Same formula to be applied for calculating -1SD and – 2SD by subtracting the Mean value.
5. **Mark and draw lines for the calculated SD Values**

   2SD = 105+ (2 x 2.5) =110 mg /dL

   1SD = 105 + 2.5 = 107.5 mg/ dL

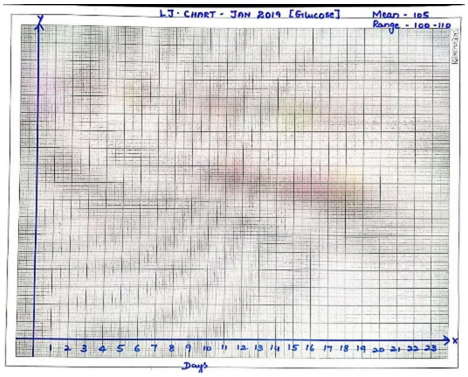
   Mean = 105 mg/dL

   -1SD = 105 - 2.5 = 102.5 mg/dL

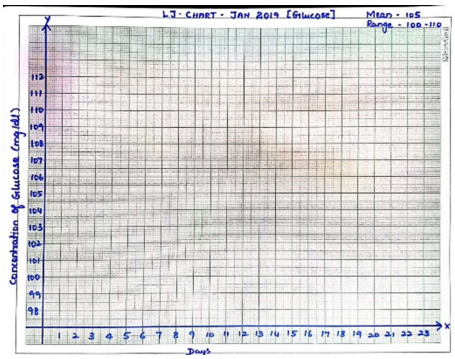
   -2SD = 105 – (2 x 2.5) =100 mg/dL

Levey-Jennings Chart

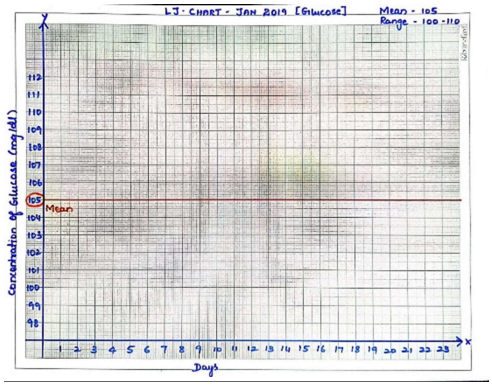
(Example Glucose Test)



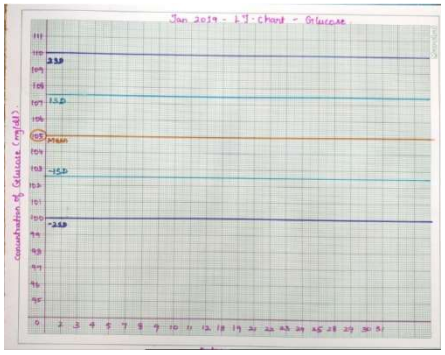
1.Mark dates on X-axis



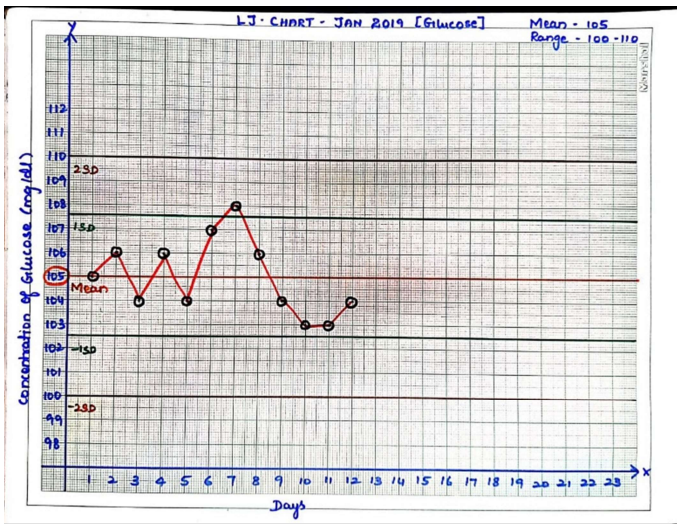
2.Mark Glucose concentration on Y-axis



3.Draw a line for the mean value



4.Draw a line for the 1 SD & 2 SD value including -2SD



Plot the values of the IQC in the LJ Chart

External Quality Assurance Scheme (EQAS), CMC

3 Sets of Samples / Year

Add 2 ml of Distilled Water Wait for 15 mins

Each Vial / Month

- In each year, 3 sets of EQAS samples will be sent by CMC, Vellore
- Each set contains 4 vials of lyophilized/powdered analytes.
- Each vial should be reconstituted with 2 ml of deionized water and tested in the PHC laboratory and the values should be uploaded in the CMC, EQAS web site on or before 20th of every month.
- Before testing the EQAS sample, the Lab. Technician should run the IQC to check the Internal Quality Control.
- The EQAS sample is mandatory for Glucose, Cholesterol and Creatinine tests. Hence, all the Laboratory Technicians should strictly perform these tests using EQAS sample without fail on every month.
- The values of the EQAS test results should be recorded in a separate note or file. Computer printout of the sent results may also be documented.
- The results posted by CMC, Vellore in their web site should be taken a print out and maintained in the file.
- The results should also be communicated to the Dist.Microbiologist immediately.