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