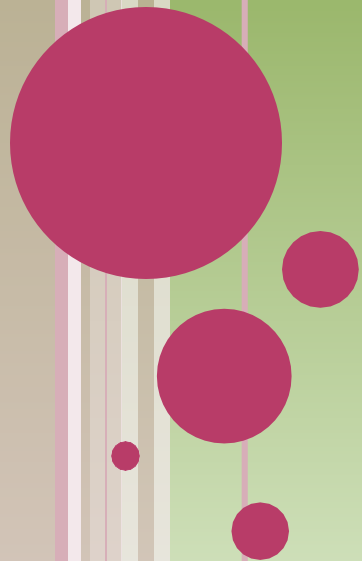
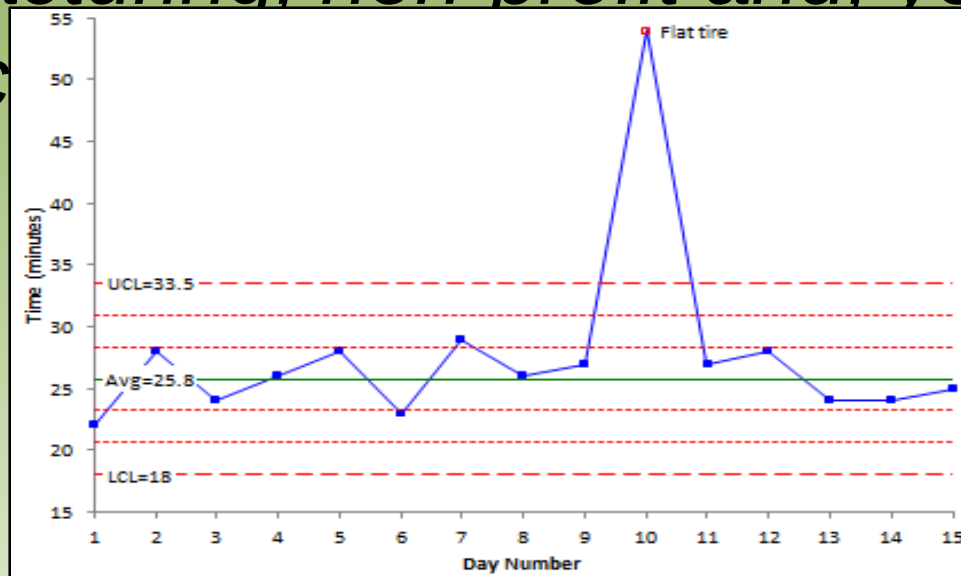


INTRODUCTION TO CONTROL CHARTS



WHAT ARE CONTROL CHARTS?

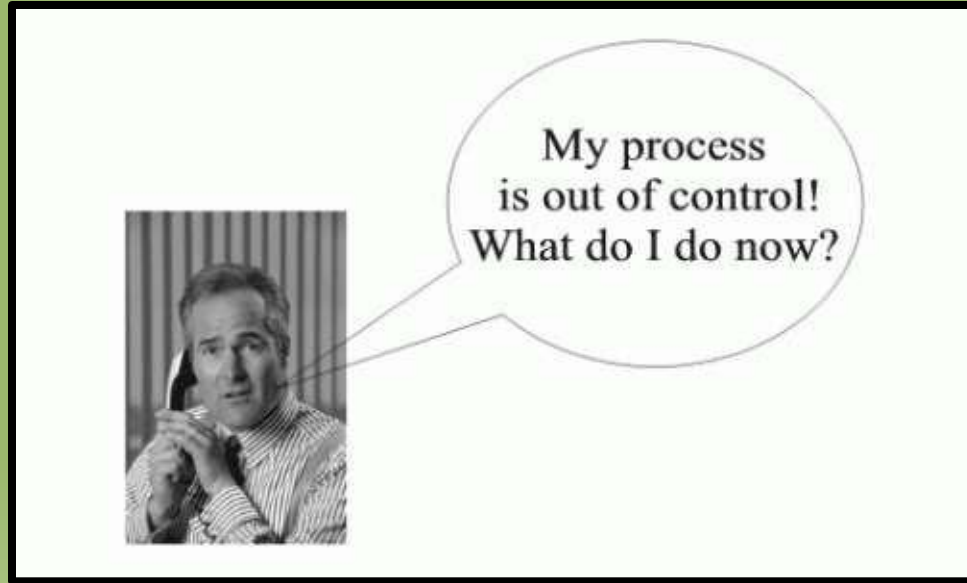
- A control chart is used to monitor a process variable over time. That variable can be in any type of company or organization - service, manufacturing, non-profit and, yes, healthcare



INSPECTION BEING DONE IN INDUSTRIES TO FIND THE PROCESS CAPABILITY OF THE PROCESS



WHAT DO CONTROL CHARTS TELL US???



- When our control charts show us that there is an out-of-control situation, it is the responsibility of those people closest to the process to find the cause for the out-of-control situation and eliminate the cause from the process. This prevents the cause from occurring again.

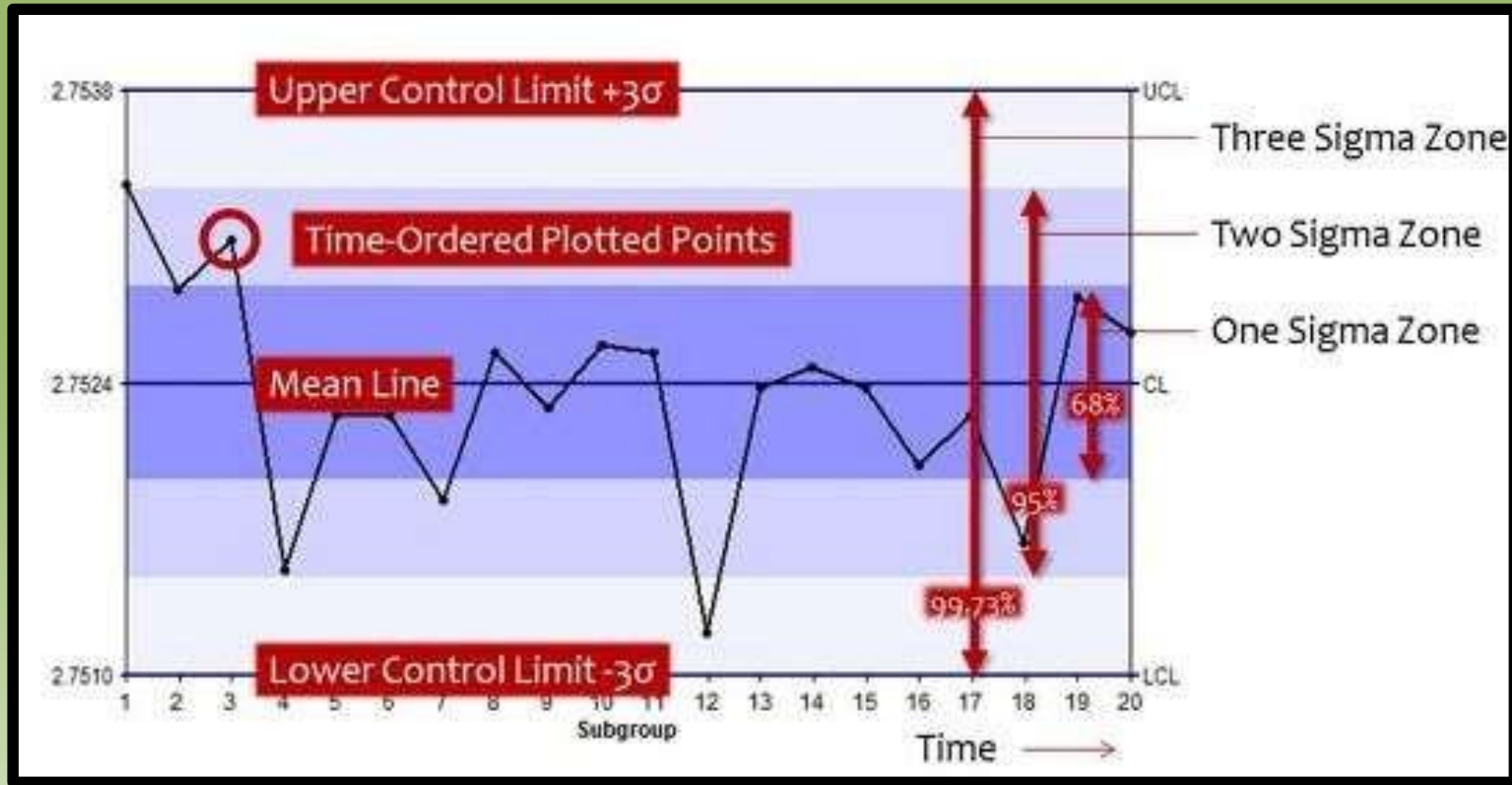


WHY USE CONTROL CHARTS?

- Monitor process variation over time
- Differentiate between special cause and common cause variation
- Assess effectiveness of changes
- Communicate process performance



CONTROL CHART CONTAINS:-



BASIC COMPONENTS OF CONTROL CHARTS:-

- A centerline, usually the mathematical average of all the samples plotted.
- Lower and upper control limits defining the constraints of common cause variations.
- Performance data plotted over time.

$$UCL_{\bar{x}} = \bar{\bar{X}} + A_2 \bar{R}$$

$$LCL_{\bar{x}} = \bar{\bar{X}} - A_2 \bar{R}$$

$$UCL_R = D_4 \bar{R}$$

$$LCL_R = D_3 \bar{R}$$

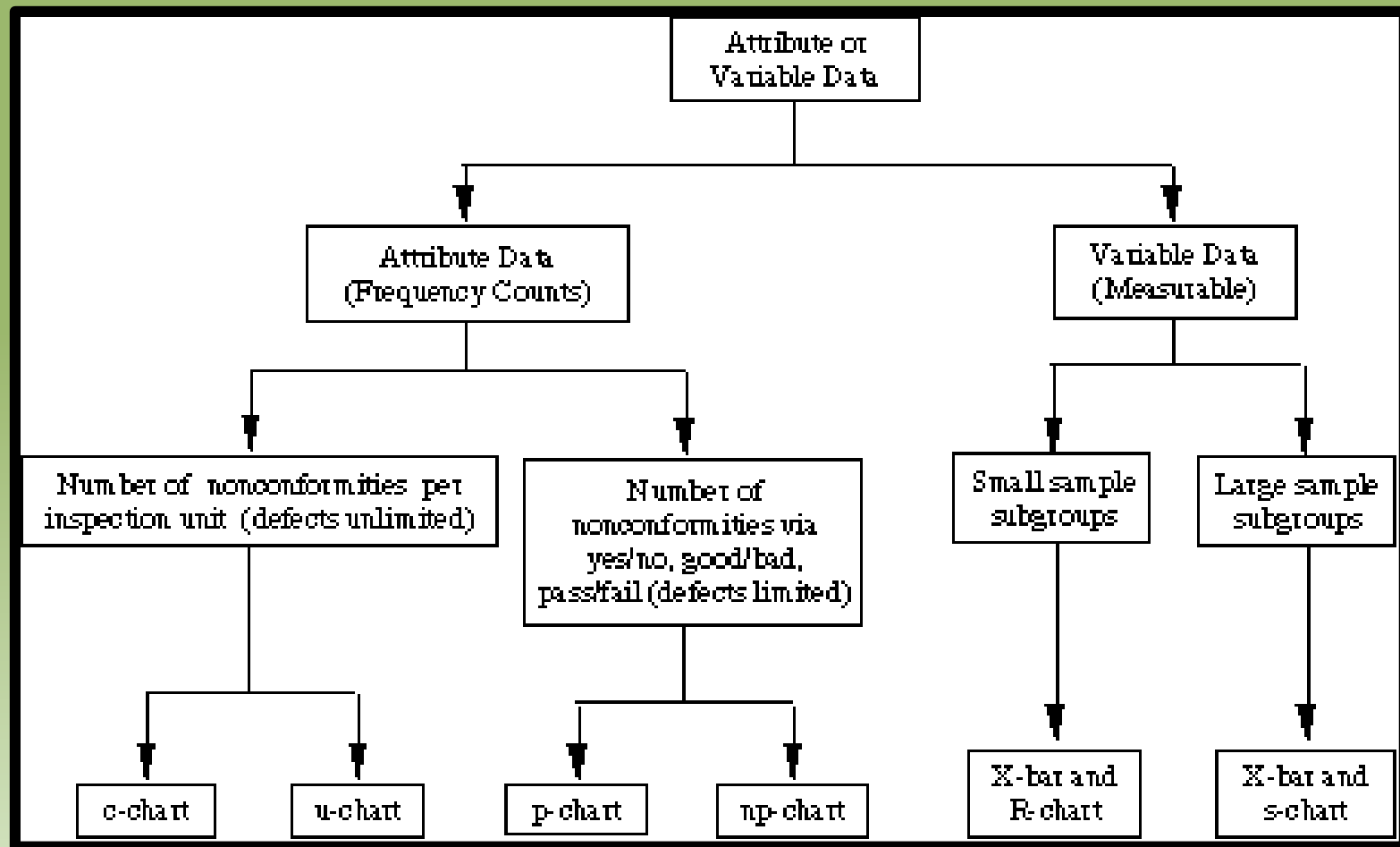


CONSTRUCTING A CONTROL CHART:-

- Select the process you would like to chart
- Determine your process sampling plan
- Collect data from your process
- Calculate the control chart specific statistics
- Calculate your control limits
- Construct your control chart



TYPES OF CONTROL CHARTS?



○ Variables Data:

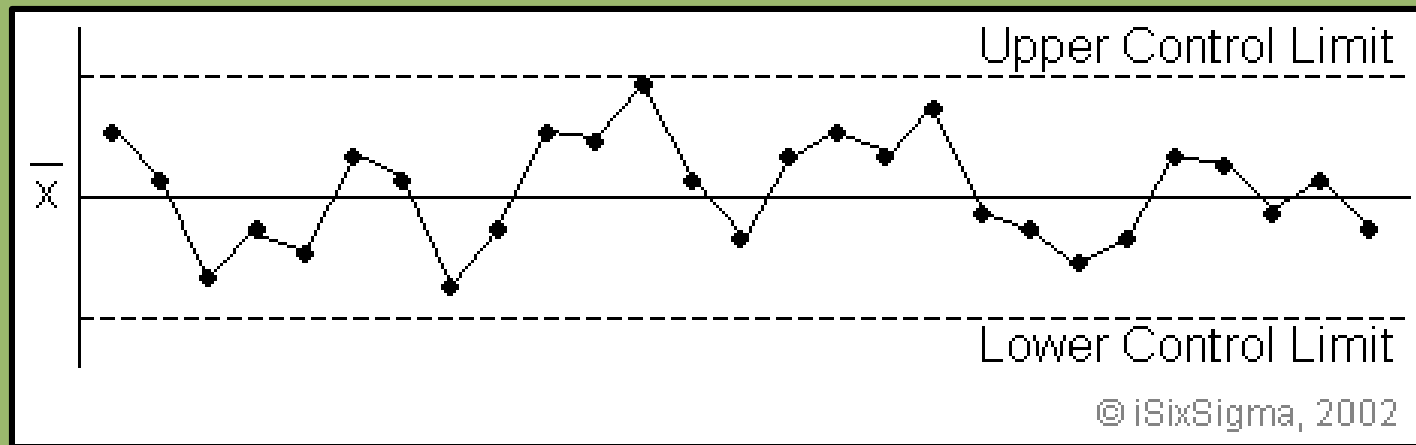
This category of Control Chart displays values resulting from the measurement of a continuous variable. Examples of variables data are elapsed time, temperature, and radiation dose.

○ Attribute Data:

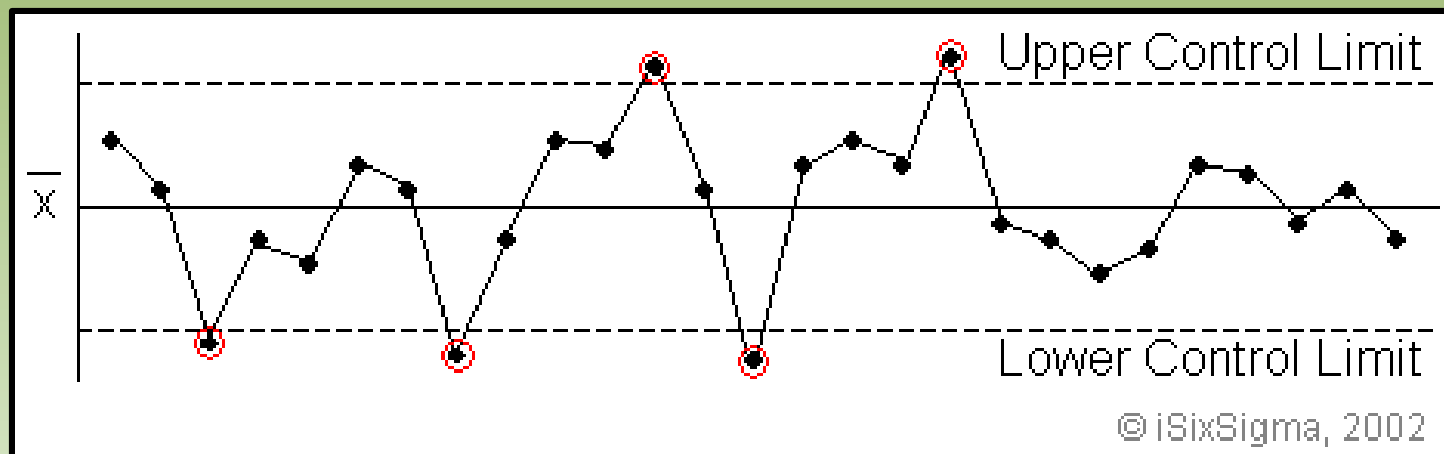
This category of Control Chart displays data that result from counting the number of occurrences or items in a single category of similar items or occurrences. These “count” data may be expressed as pass/fail, yes/no, or presence/absence of a defect.



In Control Process Control Chart



Out Of Control Process Control Chart



OutOfControl ProcessChart-

Find the cause
for out of control
process and
eliminate cause
from process.



TYPES OF CAUSES FOR VARIATIONS:-

Common Causes

- Measurement error.
- Vibration in industrial processes.
- Ambient temperature and humidity.
- Insufficient training.
- Normal wear and tear.
- Variability in settings.
- Computer response time

Special Causes

- Operator absent.
- Poor adjustment of equipment.
- Operator falls asleep.
- Faulty controllers.
- Machine malfunction.
- Computer crashes.
- Poor batch of raw material.



THANK YOU

