Data

Define It, Collect It, Analyze It, Use it

Objectives

- Describe the parts of data definitions

- Identify ways to find and collect data

- Describe methods to analyze data and make it meaningful

- Identify ways in which data can be presented

Data Set

- Collection of data in organized manner

- Elements are relational

- Typically focus on one item at a time – categories

Data Measure Elements

- Description – what are you looking for?

- Significance – why do you need to collect this information?

- Population – What is inclusion/Exclusion criteria? Numerator/Denominator?

- Collection Method – how are you going to find the data?

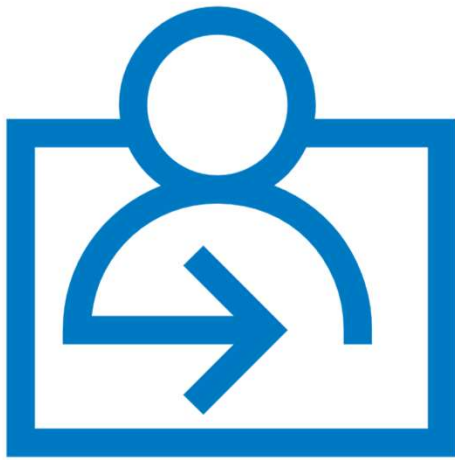- Elements Included – what pieces of information will you collect?

Define Your Data

Does your definition match the definition of required measures?

Does everyone use the same definition?

Use "official" definitions when possible, for continuity

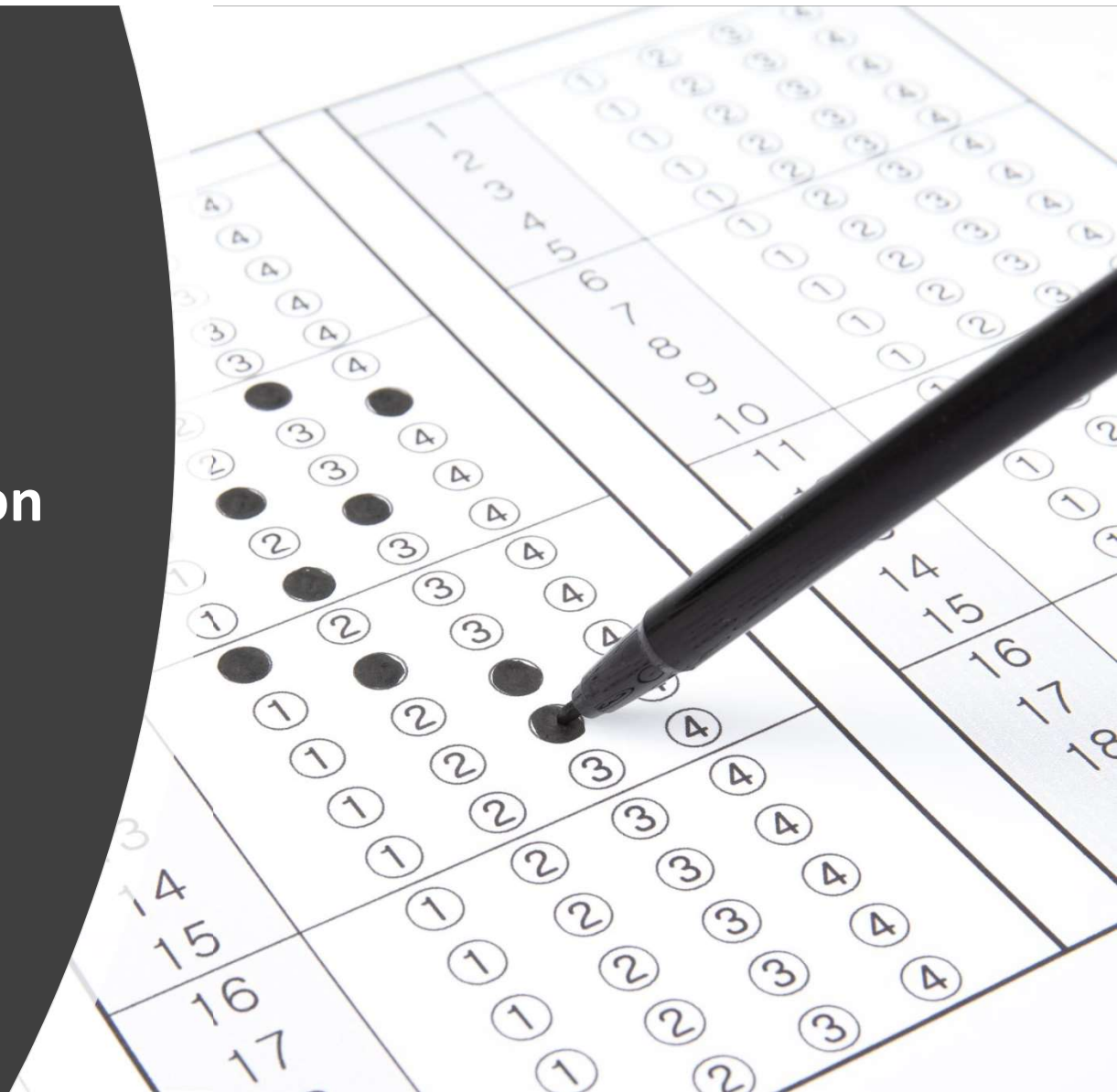All parts of data collection require definition

Measures to Collect Process/Structure/Outcomes/Balance

- **Process measure – steps in process that will impact outcome measures (delay in discharge)**

- **Structure – how structure impacts outcomes and process (how many staff vs how many computers to use)**

- **Outcome measure – used to determine how the system or improvement project impacts the patient (mortality, readmission, SSIs)**

- **Balance measure – how one improvement may impact another area (rushed DC process impacts patient satisfaction)**
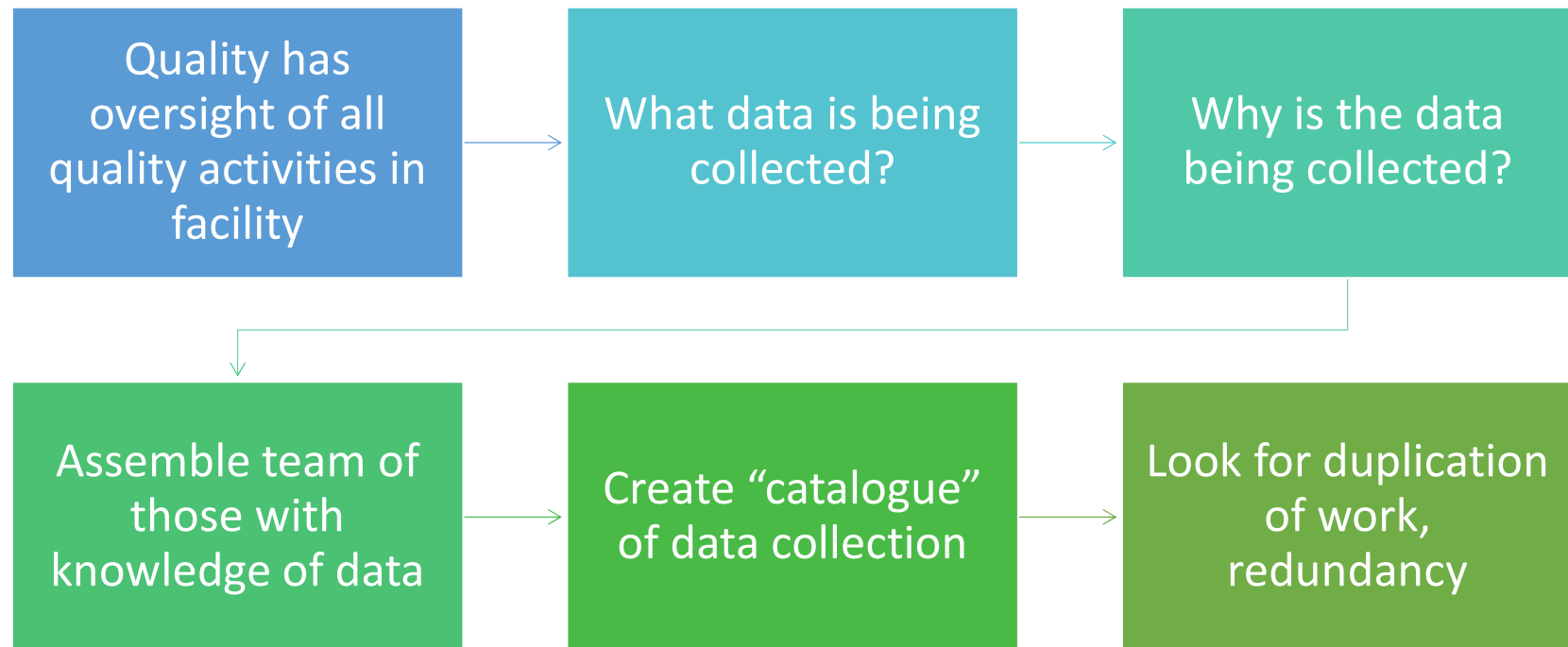
Where and How to Find the Numbers

- **Manual Chart abstraction**
- **EMR**
- **Other Database**
- **Survey**

DATA INVENTORY

Data Inventory

Quality has oversight of all quality activities in facility	→	What data is being collected?	→	Why is the data being collected?

Assemble team of those with knowledge of data	→	Create "catalogue" of data collection	→	Look for duplication of work, redundancy

Inventory

- **Categorize**
  - **Accreditation**
  - **Licensure**
  - **Contracts**
  - **Departmental (Nursing, Provider services, etc)**
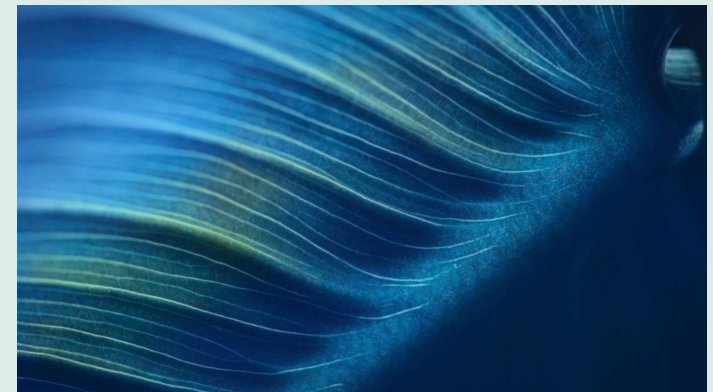 - **Unit Specific (ER, Med Surg, OR, etc)**

Become Efficient with Data!!!

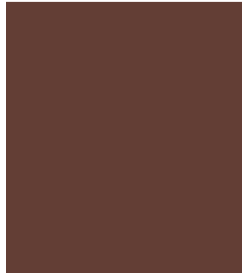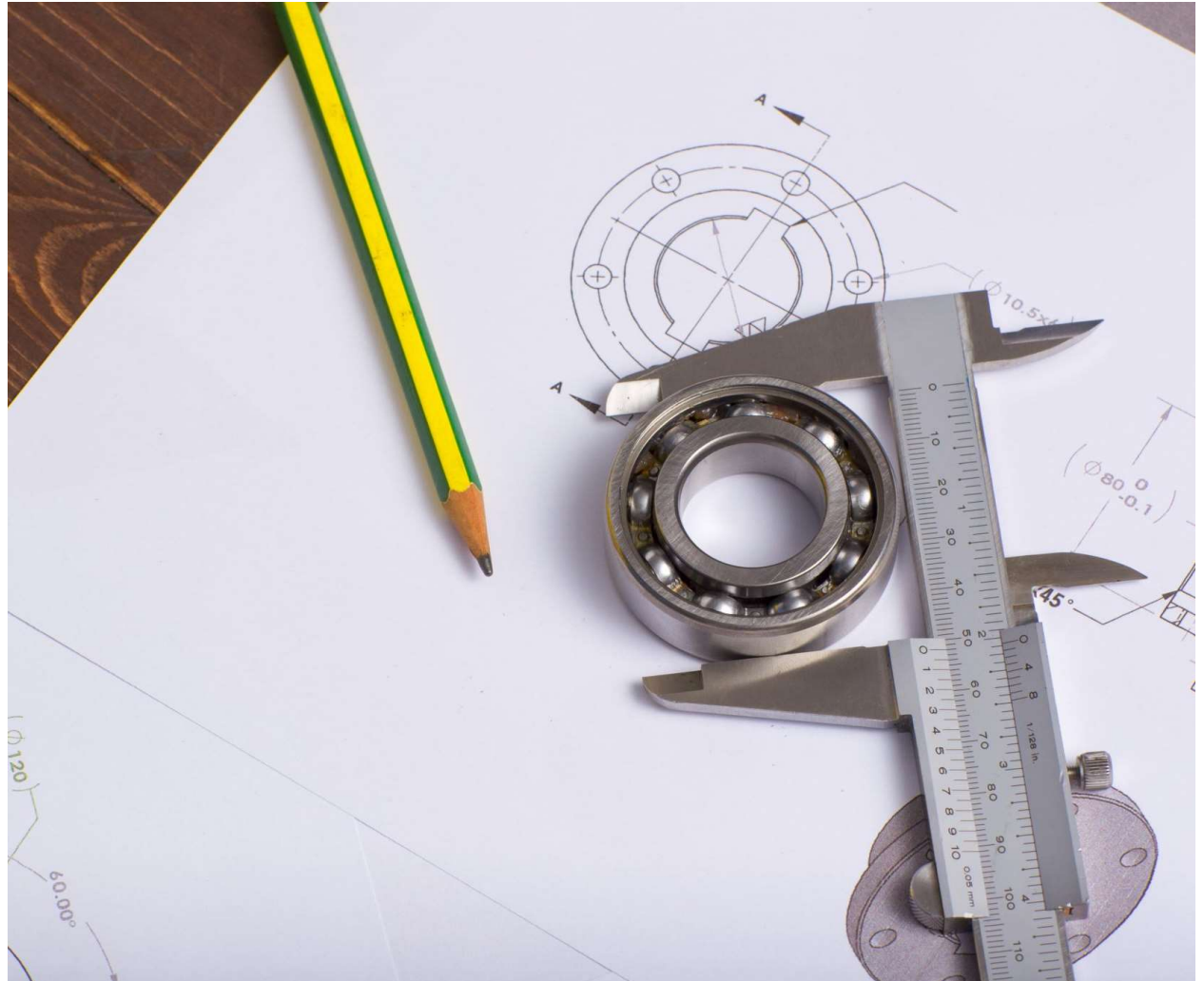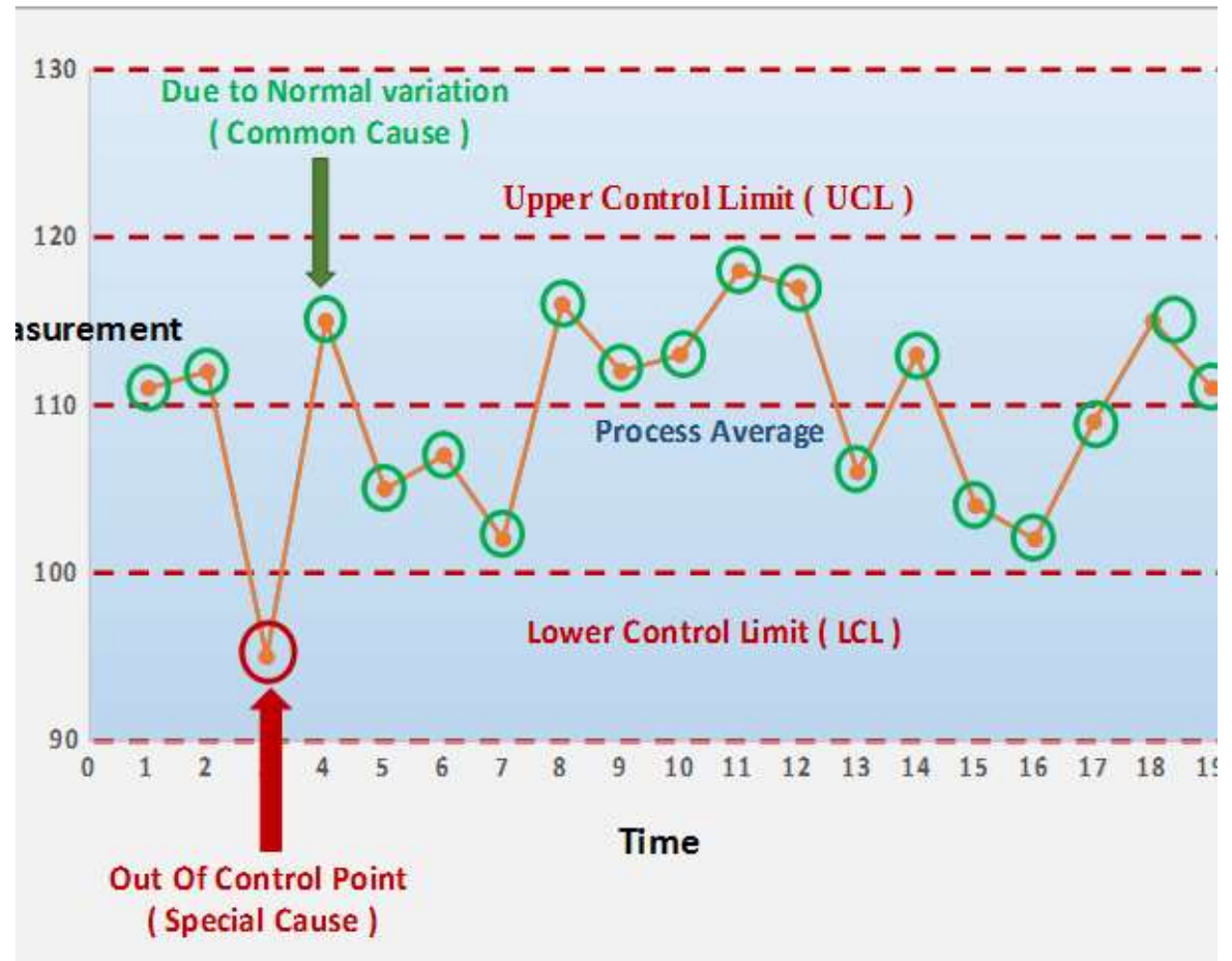|	
Identify	Identify unnecessary measures
Eliminate	Eliminate duplication of work
Decide	Decide what is important!!!
Determine	Determine who will collect and report
Streamline	Streamline reporting process

Methods and Tools
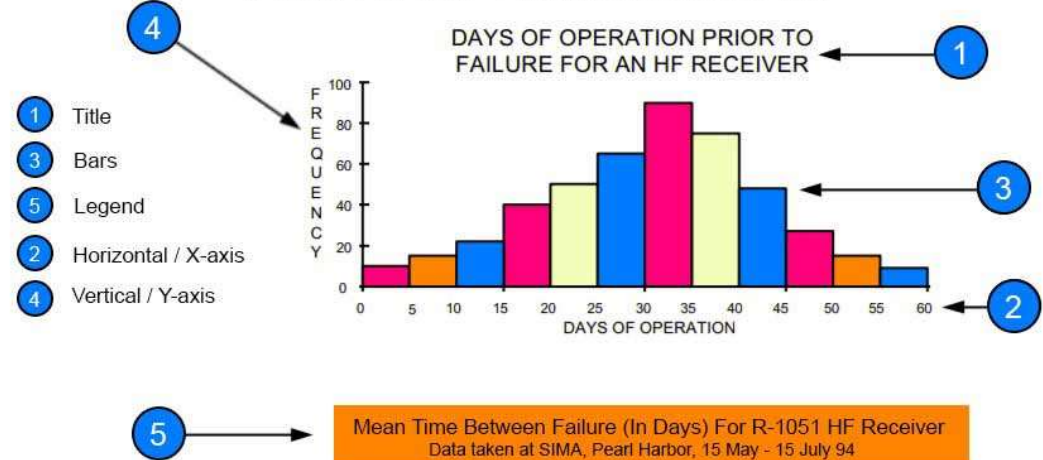
Stratification Chart

Designed to show where a problem does and does not occur or to demonstrate under-lying patterns
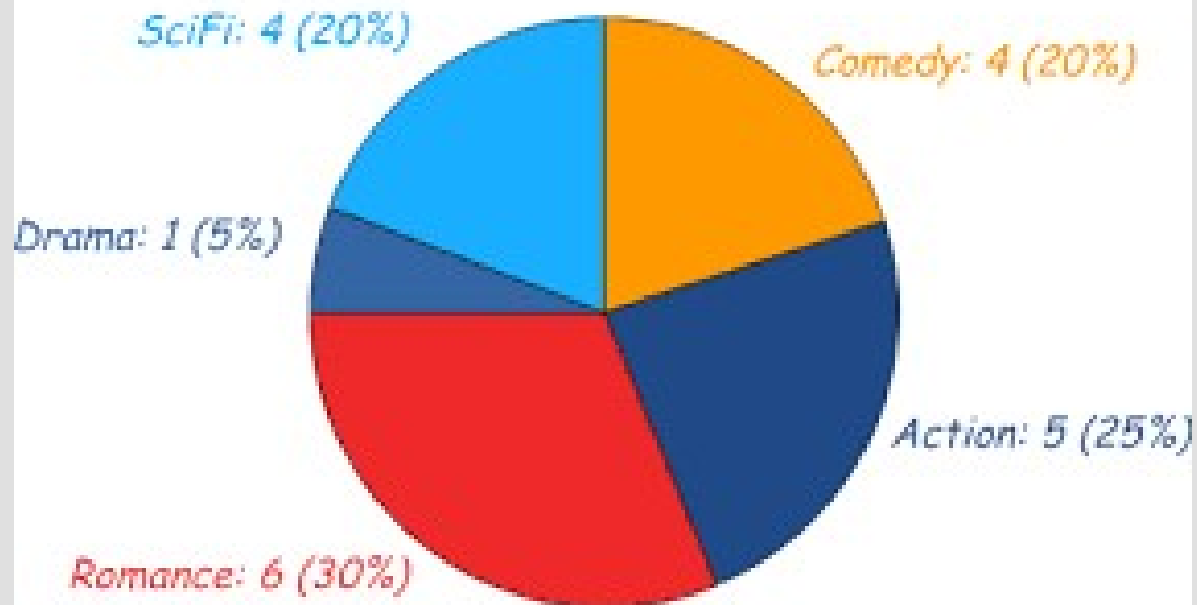
Histogram (Bar Chart)

Distribution of values for each of the variables placed in segmented columns
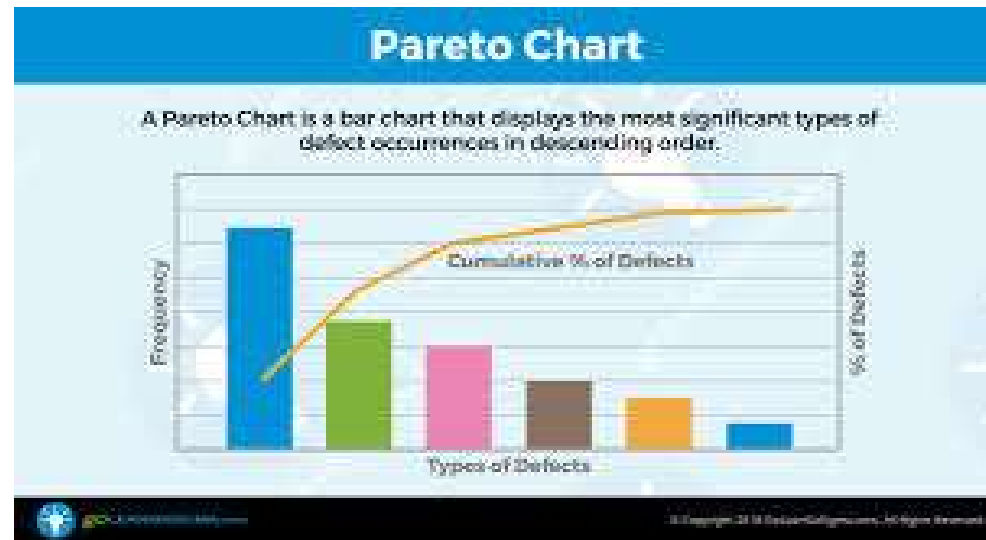

PARTS OF A HISTOGRAM

1. Title
3. Bars
5. Legend
2. Horizontal / X-axis
4. Vertical / Y-axis

DAYS OF OPERATION PRIOR TO FAILURE FOR AN HF RECEIVER

FREQUENCY

DAYS OF OPERATION

Mean Time Between Failure (In Days) For R-1051 HF Receiver
Data taken at SIMA, Pearl Harbor, 15 May - 15 July 94

Favorite Type of Movie

SciFi: 4 (20%)

Comedy: 4 (20%)

Drama: 1 (5%)

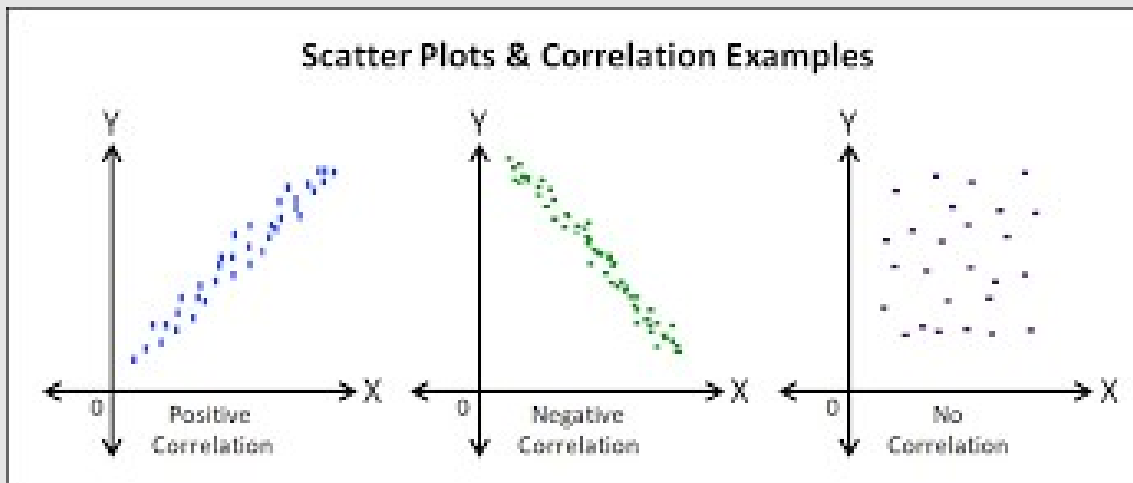Action: 5 (25%)

Romance: 6 (30%)

Pie Chart

Usually expressed in percentages

Pareto Diagram

- Series of bars of varying heights arranged in descending height with tallest bar being most frequently occurring issue

Scatter or Plot Diagram

Scatter Plots & Correlation Examples

Positive Correlation — Negative Correlation — No Correlation

- Used to determine the extent to which two variables (quality effects or process causes) relate to one another. The extent between which two variables relate is called correlation

Run or Trend Chart
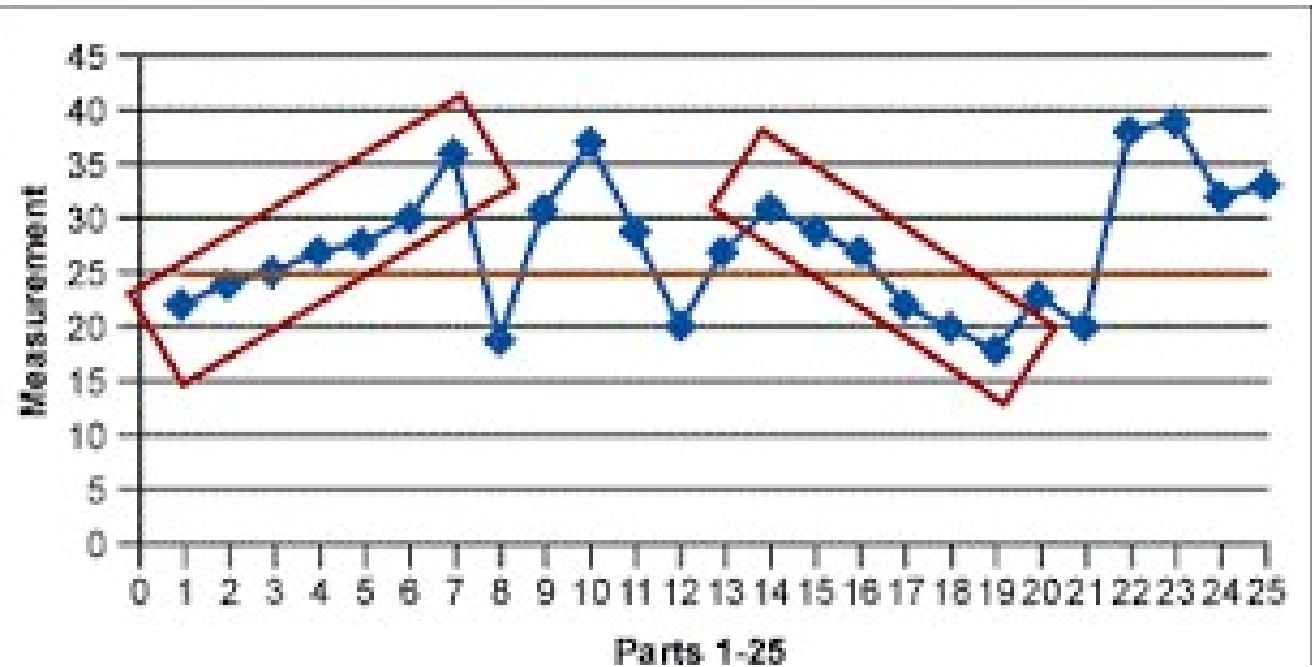
- Graphic displays of data over time. A trend would be five or more consecutive points all going up or all going down
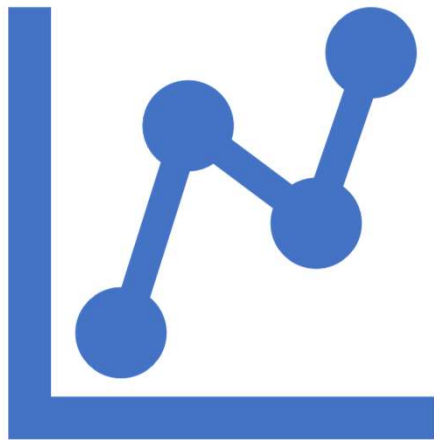
Presentation Matters!

- **Users must understand data to use data**
- **Use colors!**
- **Avoid too many graphs – Pick one!**
- **Remember who your audience is!**

Make sure you tell the whole story

- 2 inpatients for the month, 1 CAUTI = 50% CAUTI rate
- 20 inpatients for the month, 1 CAUTI = 5% CAUTI rate

- 12 patients present on back boards, 2 not removed in timely manner
- Do you report 17% non-compliance rate or 83% compliance rate?

- Is the story positive or negative? You Decide!!

Questions?