



# Introduction to Quality Improvement Methods





## Learning objective

- To describe the principles of quality improvement.
- To introduce the basic methods and tools for improving the quality of health care.
- To understand the benefits of using quality improvement methods.
- To apply the principles and use the tools to undertake their own improvement project

## The purpose of Quality improvement methods



- X Identify a problem;
- X Measure the problem;
- X Develop a range of interventions designed to fix the problem;
- X Test whether the interventions worked

# The science of improvement



## The role of measurement in improvement

- X Measurement (collect and analyze data )is an essential component of quality Improvement.
- X There is strong evidence to show that when people use the appropriate measures to measure change, significant improvements can be made.
- X All quality improvement methods rely on measurement

# The science of improvement

## Three main types of measures



### Structure Measures:

Measures of infrastructures, capacity and system •

**Example:** Nursing to patient ratio in the ICU •

### Processes Measures:

They measure if parts of steps in the system are performing as planned •

**Example:** Bed occupancy rate •

### Outcomes Measures

Are results of overall process or system performance, reflect the impact of the health care service •

**Example:** The 30-day mortality rate •

# Picturing the Data

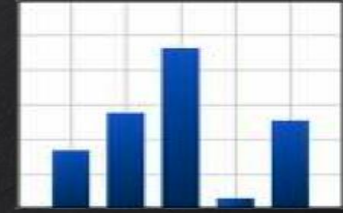


X There are many valuable tools for interpreting and presenting data  
eg. pie chart, bar chart ,line chart

X **Type of graph :**

1. **Bar chart**
2. **Pie chart**
3. **Line chart**

## Bar chart

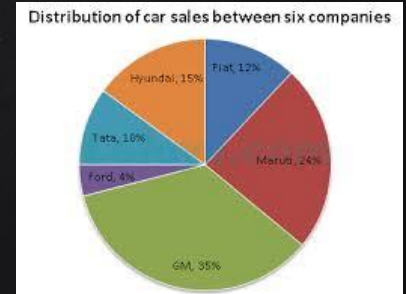


Bar Graph

- X Bar charts are one of the most commonly used types of graph.
- X The bar chart displays data using a number of bars, each representing a particular category
- X useful for looking at a set of data and making comparisons

## Pie chart

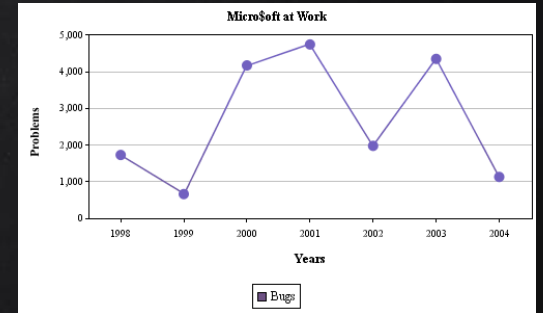
X A pie chart is a circular graph that shows the relative contribution that different categories contribute to an overall total.



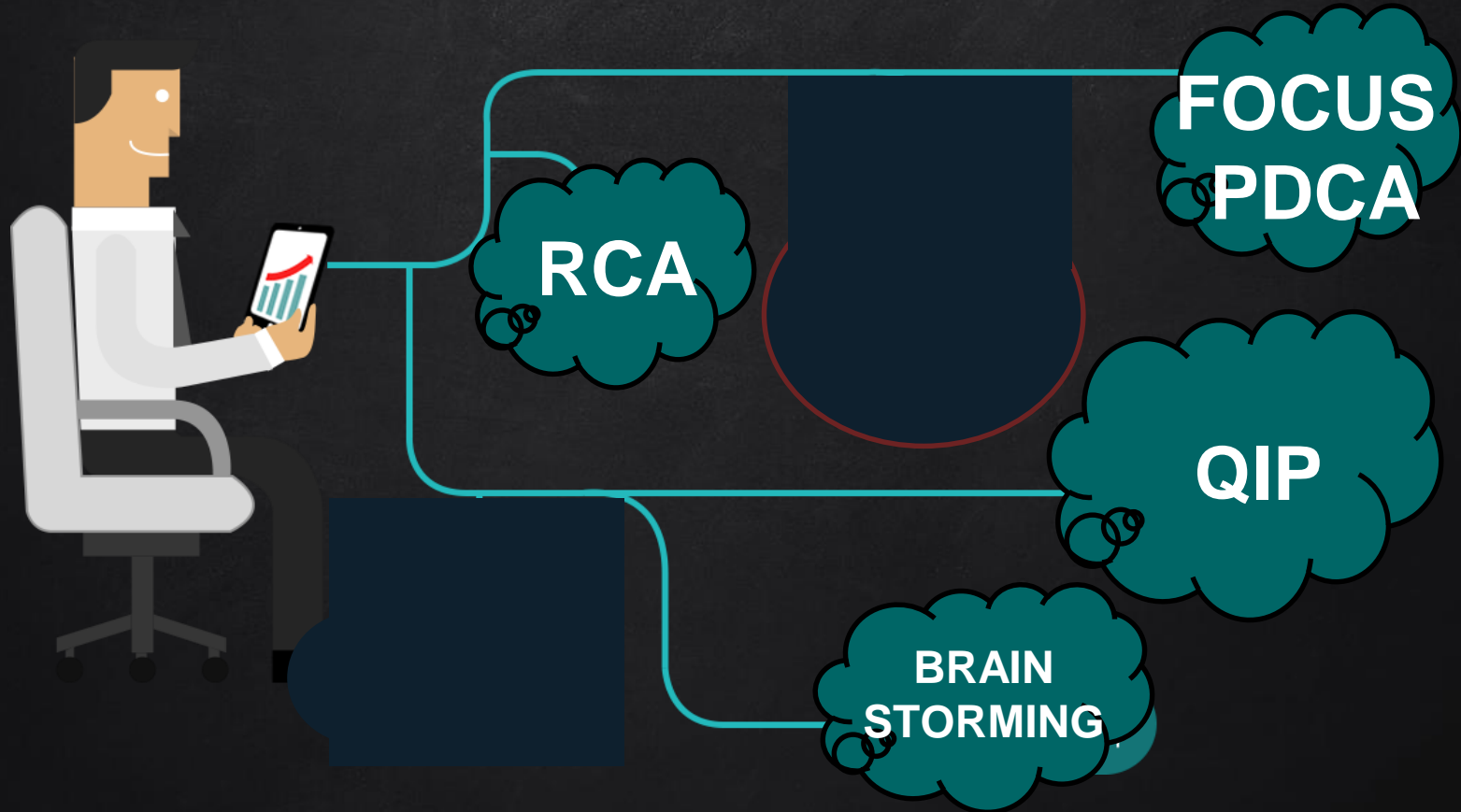


## Line chart

X A line graph, also known as a line chart, is a type of chart used to visualize the value of something over time



# Performance Improvement methods



improvement model- (Plan-do-study-act cycle)



X The IHI model has two parts:

- Three fundamental questions, which can be addressed in any order
- The PDSA cycle to test and implement changes in real work settings—the PDSA cycle guides the test of a change to determine if the change is an improvement.

# PDSA

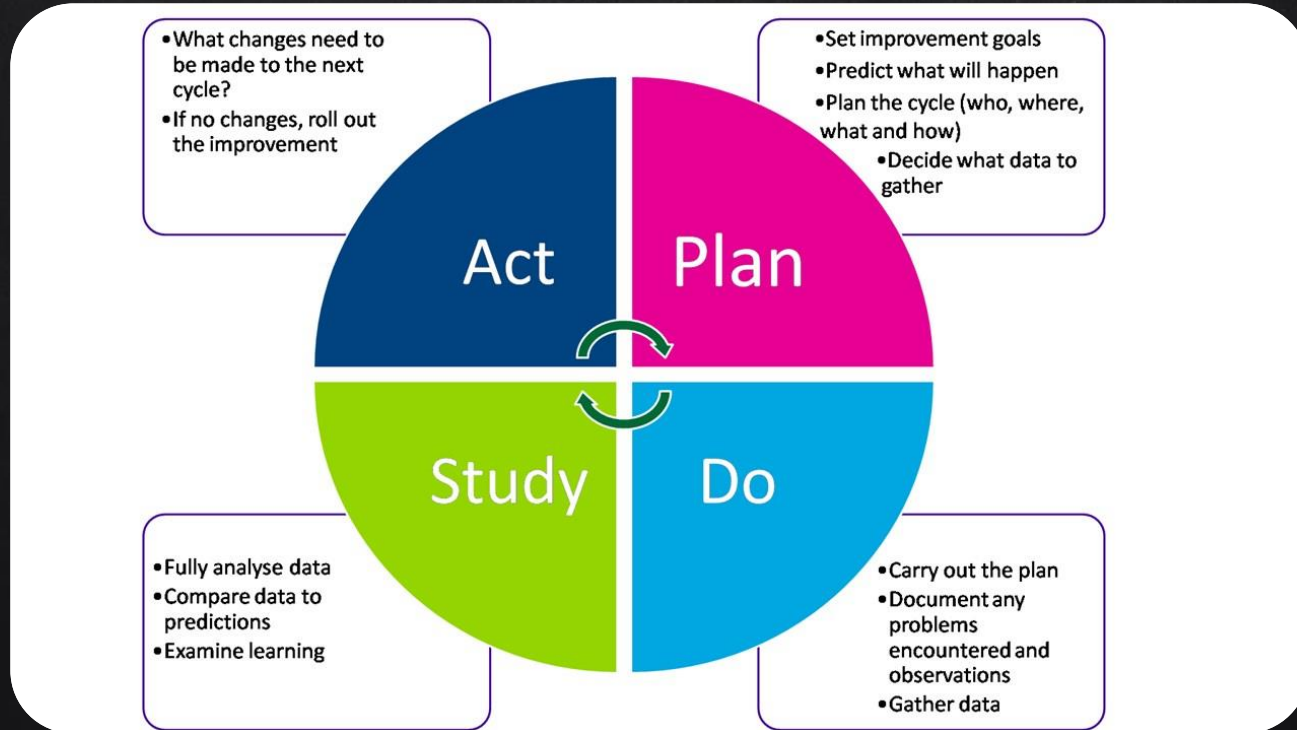
**Plan:** Define the problem to be addressed, collect relevant data, and ascertain the problem's root cause.

**Do:** Develop and implement a solution; decide upon a measurement to gauge its effectiveness.

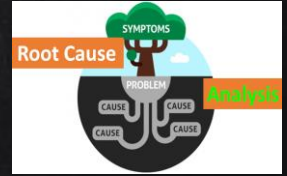
**Study:** Confirm the results through before-and-after data comparison.

**Act:** Document the results, inform others about process changes, and make recommendations for the problem to be addressed in the next PDCA cycle.

# improvement model-(Plan-do-study-act cycle)



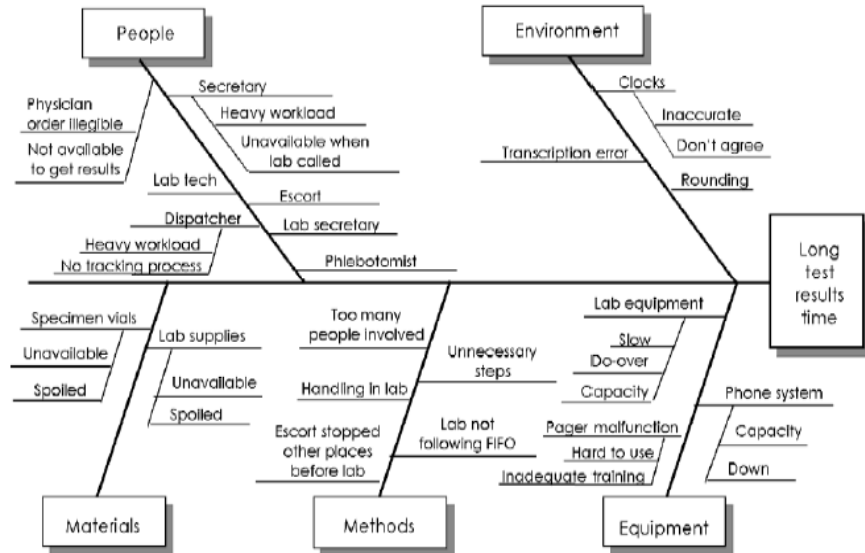
## *Root cause analysis (RCA) (ishikawa/fishbone)*



- X Is a defined process that seeks **to explore all of the possible factors associated with an incident** by asking what happened, why it occurred and what can be done to prevent it from happening again.
- X A tool for solving problems. The diagram is used to explore and display the possible causes of a certain effect

# Root cause analysis (RCA) (ishikawa/fishbone)

Cause and Effect Diagram: "Fishbone"



# An effective root cause analysis requires the following components



Multidisciplinary team

The team develops a problem statement



Root cause  
analysis effort  
is directed  
towards finding  
out what  
happened



**Documentation and review (medical records, incident forms, hospitals guidelines, literature review)**

**Site visit—to examine the equipment, the surroundings and observe the relationships of the relevant staff**

## improvement model- Root cause analysis (RCA)

X

Establishing the contributing factors or root causes are accomplished through A brainstorming process of all possible factors:

- **Environmental factors:** e.g. The work environment; medico-legal issues
- **Organizational factors:** e.g. Staffing levels; policies; workload and fatigue
- **Team staff factors:** e.g. Supervision of junior staff; availability of senior doctors
- **Individual staff factors:** e.g. Level of knowledge or experience
- **Task factors:** e.g. Existence of clear protocols and guidelines
- **Patient factors:** e.g. Distressed patients; communication and cultural barriers between patients and staff; multiple co-morbidities.

# QUALITY IMPROVEMENT PLAN (QIP)

- X A Quality Improvement Plan is a detailed work plan intended to enhance an organization's quality in a specific area
- X Quality Improvement Plan includes essential information about how your organization will design, implement, manage, and assess quality.



# Brain storming

- X Brainstorming is a technique by which a group attempts to find a solution(s) to a specific problem by amassing ideas spontaneously
- X It is a highly effective technique for maximizing group creative potential





thanks!

Any questions?