Total Quality management

And patient safety

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1- Quality Concepts.

Definition of key concepts:
Quality:
Having high degree of excellence doing right things right first time it is a cost – reduction.

"Quality of product as the degree in which it fulfills the requirement of the customer. It is not absolute but it judged or realized by comparing it with some standards".

Crosby defined as **"Quality is conformance to requirement or specifications".**

Juran defined as "Quality is fitness for use". "The quality of a product or service is the fitness of that product or service for meeting or exceeding its intended use as required by the customer."

ISO 9001: "The degree to which a set of inherent characteristics fulfills requirements."

Quality of care:
It is provide comprehensive components of care based on community facilities to reach the optimal health services.

Quality assurance:

It is an ongoing process that ensures the delivery of agreed standards. These agreed standards should make sure every educational institution, if which the quality is assured, has the potential ability to achieve a high quality of content. Quality assurance must not to be confused with accreditation. The goal of quality assurance is to improve education and therefore it should take place on all levels (course, program, and institution and its sub-divisions) and be a continuous process.

Criteria of standards:

- Credibility.
- Stability.
- Realism.
- Clarity.
- Modernity.

Quality circle

According to **Juran**, **quality circle** defined as **"a group of work force level people, usually from within one department, who volunteer to meet weekly (on company time) to address quality problems that occur within their department."**

Quality control:

Quality Control (QC) may be defined as "a system that is used to maintain a desired level of quality in a product or service". It is "a systematic control of various factors that affect the quality of the product".

Quality Improvement:

Quality Improvement (QI) involves continuously monitoring, analyzing, and improving of systems and procedures throughout the agency.

Quality management:

Quality management ensures that an organization, product or service is consistent. It has four main components: quality planning, quality assurance, quality control and quality improvement.

Total Quality Management (TQM):

"Total Quality Management is an effective system of integrating the quality development, quality maintenance and quality improvement efforts of various groups in an organization so as to enable marketing, engineering, production and service at the most economical levels which allow for full customer satisfaction".

Evidence-based services care:

It uses the best available research on the safety and effectiveness of specific practice to help guide health care decisions and to facilitate optimal outcomes.

Six sigma :

Is a process of management methodology that provides a systematic means of developing and improving processes by Eliminate waste, rework, and mistakes. Increase customer satisfaction and Increase profitability and competitiveness.

2- Quality of care. Services and product

Quality of care:
It is provide comprehensive components of care based on community facilities to reach the optimal health services.

Components of high quality health care:

- ***Structure:***

o It refers to physical setting, personnel, facilities, supplies & record.

- ***Process:***

o It refers to services provision for client general & specific.

- ***Outcome:***

o It refers to improvement for structure & process.

- **Basic concepts of quality:**

  - Effective.
  - Efficient.
  - Accessible.
  - Acceptable/patient-centered.
  - Equitable.
  - Safe.

Effective: delivering health care that is adherent to an evidence base and results in improved health outcomes for individuals and communities, based on need.

- ***Efficient:*** delivering health care in a manner which maximizes resource use and avoids waste.
- ***Accessible:*** delivering health care that is timely, geographically reasonable, and provided in a setting where skills and resources are appropriate to medical need.

 Acceptable/patient- centered: delivering health care which takes into account the preferences and aspirations of individual service users and the cultures of their communities.
 Equitable: delivering health care which does not vary in quality because of personal characteristics such as gender, race, ethnicity, geographical location, or socioeconomic status.

 Safe: delivering health care which minimizes risks and harm to service users.

Good quality health services are those which meet the following criteria:

Are accessible & available as close as possible to where person live, & at lowest level facility that can provide the services safely & effectively.

Are acceptable to potential users & responsive to cultural & social norms, such as preference for privacy, confidentiality & care by client health workers.
Have on hand all essential supplies & equipment.

Provide **comprehensive** care and or linkage reproductive health services.
Provide **for continuity** of care & follow up

Who provide **respectful & nonjudgmental** care that is responsive to needs?

Provide **information & counseling for clients** on their health & health needs.

Involve of patient in care plan and decision making.

High quality care must be assured in whatever environment client health care takes place: at home, rural or urban health centers, or well-equipped hospitals in large cities.

Dimensions of Quality-Product:

1. Performance: *Basic operating characteristics*

2. Features: *"Extra" items added to basic features*

3. Reliability: *Probability product will operate over time*

4. Conformance: *Meeting pre-established standards*

5. Durability: *span before replacement*

6. Serviceability: *Ease of getting repairs, speed & competence of repairs*

7. Aesthetics: *Look, feel, sound, smell or taste*

8. Safety: *Freedom from injury or harm*

9. Other perceptions
Subjective perceptions based on brand name, advertising,

Dimensions of Quality Service:

1. Time & Timeliness: Customer waiting time, completed on time.

2. Completeness: Customer gets all they asked for.

3. Courtesy: Treatment by employees.

4. Consistency: Same level of service for all customers.

5. Accessibility & Convenience: Ease of obtaining service.

6. Accuracy: Performed right every time.

7. Responsiveness: Reactions to unusual situations.

3- Elements of quality: Quality Model and Domains.

1 **Stakeholder involvement.**

2. Situational analysis.

3. Confirmation of health goals.

4. Quality goals.

5. Choosing interventions for quality.

6. Implementation process.

7. Monitoring progress.

1. Stakeholder involvement:

Include political and community leaders, service users and their advocates, health-care delivery organizations regulatory bodies, and representative bodies for health workers.

2. Situational analysis:

The situational analysis might include the following:

 Current structures and systems within the ministry of health relating to quality improvement.

 Current policies in health and across sectors .

 Current health goals and priorities.

 Current performance of the health system.

 Current quality interventions.

3. Confirmation of health goals:

 Reducing mortality

 Reducing morbidity

 Reducing health inequalities

 Improving outcomes

 Making health care safe.

4. Development of quality goals:

The questioning process in relation to the health goal will be to ask the following:

 What are the deficiencies in effectiveness?

 What are the deficiencies in efficiency?

 What are the deficiencies in accessibility?

 What are the deficiencies in acceptability?

 What are the deficiencies in equity?

 What are the deficiencies in safety?

5. Choosing interventions for quality:
This element moves attention from the "what" to the "how". It calls for judgments to be made about interventions, and agreement to be reached about the process of implementation.

6. Implementation process:
The strategy will have identified a framework for implementation and covered key issues such as leadership and accountability, time scales and milestones, and the monitoring of progress.

7. Monitoring progress:

 Benefits:

❖ It will be important to make early decisions about how the strategy and its selected interventions might be modified to achieve better results.

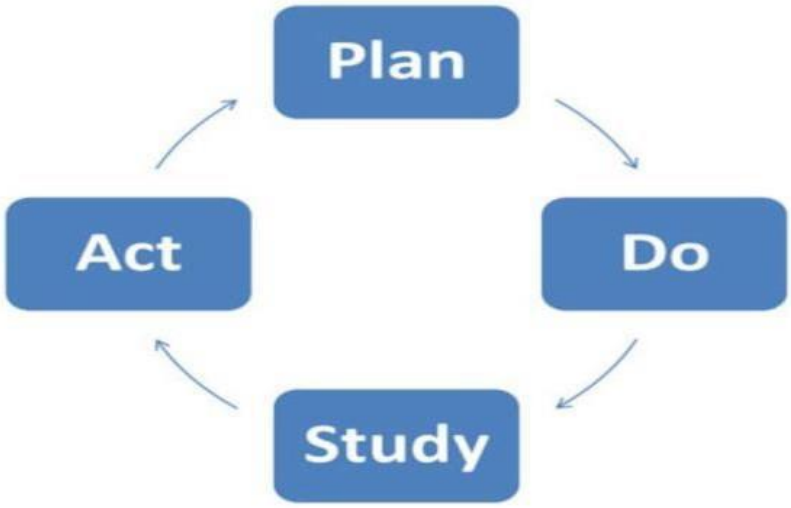
❖ Giving proper account to stakeholders for that investment can only be done with information about changing outcomes.

❖ Will be helped by being able to point both to progress and achievements.

❖ The delivery of the quality goals to which they have subscribed.

Identify and Utilize Quality Model

• Plan: how you plan to accomplish your goals.
• Do: implement procedures for reaching goals.
• Study: use data to determine effectiveness.
• Act: modify procedures as needed to reach goals more effectively



The six domains of quality interventions:

1. Leadership.

2. Information.

3. Patient and population engagement.

4. Regulation and standards.

5. Organizational capacity.

6. Models of care.

1- Leadership:
 Fundamental, strong leadership and support for quality

 Needs to come from national and community leaders.

 Strategic interventions may be needed to build commitment and leadership capacity, and to strengthen accountability.

2. Information:
 Fundamental. Apply consistently across the whole system. Complex and resource-intensive.

3. Patient and population engagement:

 Individuals and communities play many roles within health systems.
 Communities and service users will want to be involved in arrangements of the health system.

4- Regulation and standards:

 The more efficient means of facilitating higher compliance with evidence.

 The use of regulation and standards seeks to change performance
through the application of externally developed measures.

 The challenge to policy-makers is to find the right balance between internal and external drivers for improvement.

5. Organizational capacity:

 A health-service-provider organization is in the government sector, the private sector, or is part of a nongovernmental organization.

 Ability to develop systems to support quality improvement such as

audit and peer-review.

 Ability to build an organizational culture which values quality.

6. **Models of care:**

 Reflects currently understood best practice. The development of models of care is differentiated from organizational capacity because when health systems focus on models of care to improve quality.

 A new model of care may need to integrate the contributions of

primary, specialized, and social care organizations.

 The development of new models of care usually involves high levels of stakeholder involvement (including service users and communities), an appraisal of evidence, the development of protocols and guidelines, and a process to redesign the delivery of care.□□□□

4- Quality circle

Quality circle. "It is typically an informal group of people that consists of operators, supervisors, managers and so on who get together to improve ways to make the product or deliver the service".

According to **Juran**, **quality circle** defined as **"a group of work force level people, usually from within one department, who volunteer to meet weekly (on company time) to address quality problems that occur within their department."**

Quality circle members select the problems and are given training is problem-solving techniques.

A quality circle can be an effective productivity improvement tool because it generates new ideas and implements them.

Where the introduction of quality circle is capably planned and where the Company environment is supporting they are highly successful.

Benefits of Quality Circles (QC):
The most important benefit of quality circles is their effect on people's attitudes fall into three categories:

1. Quality Circles Effect on Individual Characteristics

(a) Quality circles enable the individual to improve personal capabilities—group participation and learning specific problem-solving tools.

(b) Quality circles increase the individual's self-respect.

(c) Quality circles help worker change certain personality characteristics—shy person become as active.

2. Quality Circles Effect on Individuals Relations with Other

(a) Quality circles increase the respect of the supervisor for the worker.

(b) Quality circles increase workers understanding of the difficulties faced by supervisors' problem selection, solving and implementations.

(c) Quality circle increase management's respect for worker.

3- **Quality Circles Effect on Workers and Their Attributes**

(a) Quality circles change some workers negative attitudes.

(b) Quality circle reduces conflict stemming from the working environment.

(c) Quality circles help workers to understand better the reasons while many problems solved quickly.

Quality circles, as a management tool, are based on the following basic principles of people:

(a) People want to do a good job.

(b) People want to be recognized as intelligent, interested employees and to participate in decisions affecting their work.

(c) People want information to better understand goals and problems of their organization and make informed decisions.

(d) Employees want recognition and responsibility and a feeling of self-esteem.

Motivational methods are not enough for successful quality circle programs. Management support, technical knowledge.

5- Quality control

Quality Control (QC) may be defined as "a system that is used to maintain a desired level of quality in a product or service". It is "a systematic control of various factors that affect the quality of the product".

According to **Juran** "**Quality Control** is the regulatory process through which we measure actual quality performance, compare it with standards, and act on the difference".

The objectives of quality control:

1. To improve the companies income by making the production more acceptable to the customers, i.e., by providing long life, greater usefulness, maintainability etc.
2. To reduce companies cost through reduction of losses due to defects.
3. To achieve interchangeability of manufacture in large scale production.
4. To produce optimal quality at reduced price.
5. To ensure satisfaction of customers with productions or services or high quality level, to build customer goodwill, confidence and reputation of manufacturer.
6. To make inspection prompt to ensure quality control.
7. To check the variation during manufacturing.

Steps of Quality Control Process:

1. Formulate quality policy.
2. Set the standards or specifications on the basis of customer's preference, cost and profit.
3. Select inspection plan and set up procedure for checking.
4. Detect deviations from set standards of specifications.
5. Take corrective actions or necessary changes to achieve standards.

6. Decide on salvage method i.e., to decide how the defective parts are disposed of, entire scrap or rework.

7. Coordination of quality problems.

8. Developing quality consciousness both within and outside the organization.

9. Developing procedures for good producer and customer relations.

Types of Quality Control:

QC is not a function of any single department or a person. It is the primary responsibility of any supervisor to turn out work of acceptable quality. Quality control can be divided into three main sub-areas, those are:

1. Statistical process control

2. Off-line quality control

3. Acceptance sampling plans.

1- Statistical Process control SPC On-line**:**

It also involves determining whether a process can produce a product that meets desired specification or requirements. On-line SPC means that information is gathered about the product, process, or service while it is functional. The corrective action is taken in that operational phase. This is real-time basis.

2- **Off-line quality control:** Its procedure deal with measures to select and choose controllable product and process parameters in such a way that the deviation between the product or process output and the standard will be minimized (test product after production before marketing to the customer).

3- Acceptance sampling plans: A plan that determines the number of items to sample and the acceptance criteria of the lot, based on meeting certain stipulated conditions (such as the risk of rejecting a good lot or accepting a bad lot) is known as an acceptance sampling plan.

6- Quality improvement :

Definition of Quality Improvement (QI):

Quality Improvement (QI) involves continuously monitoring, analyzing, and improving of systems and procedures throughout the agency.

Goals of Quality Improvement (QI):

Enhance performance by:

Setting aims.
Examining process of care. Testing changes in this process.
implementing those changes, which improve results.

Quality improvement process (QI):
The steps involved in quality improvement are identify the problem, root cause identification and analysis, research utilization, Optimal solution based on root cause**s,** action planning, implementation, and follow-up.

1- Identify the problem.

2- **Identify the root causes & analysis.**

3- Research utilization

Use of research about the processes and management of staff development education is the basis for quality-improvement strategies.

Research utilization provides a scientific basis for decision making and ensures a solid foundation for change.
4- Optimal solution based on root causes.

5- Action planning: Encourages participation in the planning and implementation of change.

Action planning uses the same concepts of lesson planning to design a framework for change within the department. No major change should occur without a written action plan

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structure that encourages participation in the planning and implementation of change.

 Action planning uses the same concepts of lesson planning to design a framework for change within the department. No major change should occur without a written action plan.

6- Implementation:
Participation of staff development educators and nursing service staff in the decisions and planning.

7- Follow-up:
Follow up the effectiveness of the implementation and verify that the desired results are met.

Examples:

 Decision-makers cannot hope to develop and implement new strategies for quality without properly engaging health-service providers, communities, and service users.

 Health-service providers need to operate within an appropriate policy environment for quality, and with a proper understanding of the needs and expectations of those they serve, in order to deliver the best results.

 Communities and service users need to influence both quality policy and the way in which health services are provided to them, if they are to improve their own health outcomes.

7- QUALITY MANAGEMENT (QM)

Quality management ensures that an organization, product or service is consistent. It has four main components: quality planning, quality assurance, quality control and quality improvement.

Objectives of Quality Management (QM):

 Preparing the internal processes of organization to global standers.

 Enhancing quality, productivity, and total performance of organization.

 Enriching the quality of work life of it is employee.

- Top Management must be completely involved in the quality improvement process rather than simply supportive of it.

 Give ownership for quality to your employees, encourage a continuous flow of incremental improvements.

 Make quality a religion. Make quality second nature of all your employees. Without it, all the corporate statements, procedures and standards will prove to be rules that are meant to be broken.

Historical development of quality management (QM):

(1) Quality inspection stage (QI) – 1920s
(2) Quality control stage (QC) – 1950s
(3) Quality assurance stage (QA) – 1970s;
(4) Total Quality management (TQM) stage.

Main principles of quality improvement:

1- Quality: meeting requirements (customer needs):

Specifications are imprecise means of conveying subjective aspects, i.e. Not everything is measurable, e.g. courtesy or friendliness Thus, Conformance to requirements is not necessarily all there is to achieving quality.

Quality: customer satisfaction:

- Customer Satisfaction or is it meeting requirements? It is only true measure of acceptable quality.

- Takes account of both subjective and objective interpretations of needs and expectations.
- Correct interpretation of needs and expectations…acceptable quality.
- Customers' Changing Perceptions Needs and Expectations of customers.
- Competitor products. (Wants become demands next time).

Quality Management (QM) Processes:

plan, do, check, and act (the ***PDCA cycle***).

 Planning phase: people define the problem to be addressed, collect relevant data, and define the problem's root cause.

 Doing phase: people develop and implement a solution, and decide upon a measurement to gauge its effectiveness.

 Checking phase: people confirm the results through before-and- after data comparison.

 Acting phase: people document their results; inform others about process changes, and make recommendations for the problem to be addressed in the next PDCA cycle.

Tools of Quality Management:

. Graphical methods are easy to understand and provide comprehensive information; they are a viable tool for the analysis of product and process data. These tools are effect on quality improvement.

The Seven Tools for Quality are:

1. Pareto charts

2. Check sheets

3. Cause and effect diagram

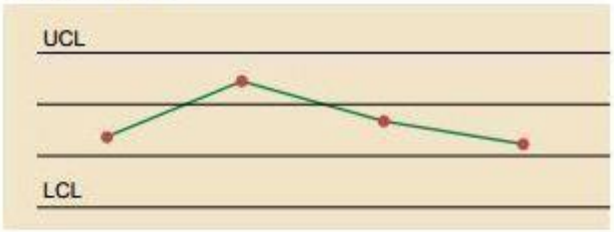
4. Scatter diagrams

5. Histogram

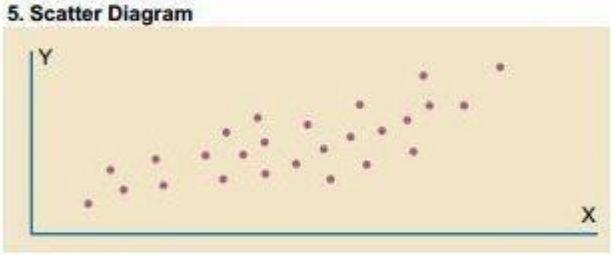
6. Graphs or flow charts

7. Control charts.

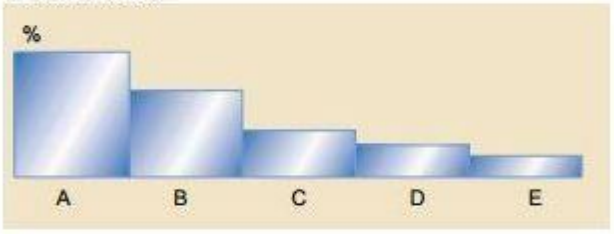
4. Control Chart



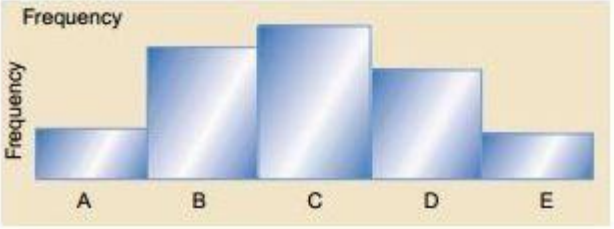
5. Scatter Diagram



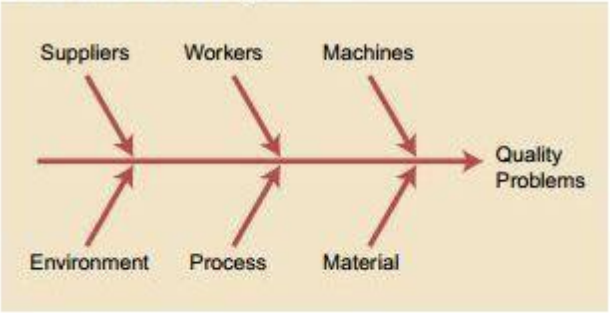
6. Pareto Chart



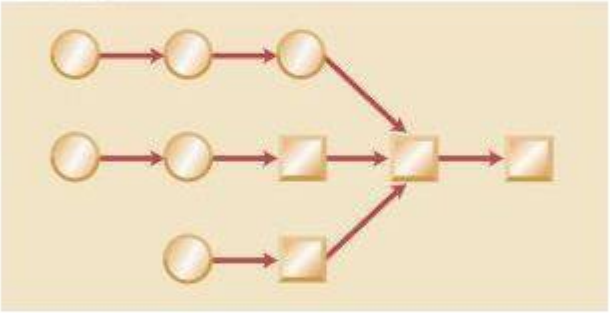
7. Histogram



1. Cause-and-Effect Diagram



2. Flowchart



3. Checklist

Defect Type	No. of Defects	Total
Broken zipper	✓✓✓	3
Ripped material	✓✓✓✓✓✓✓	7
Missing buttons	✓✓✓	3
Faded color	✓✓	2

8- TOTAL QUALITY MANAGEMENT (TQM)

"Total Quality Management is an effective system of integrating the quality development, quality maintenance and quality improvement efforts of various groups in an organization so as to enable marketing, engineering, production and service at the most economical levels which allow for full customer satisfaction".

Benefits of Total Quality Management (TQM):

1. Customer satisfaction oriented benefits.

2. Economic improvements oriented benefits

1. **Customer satisfaction oriented benefits:** The benefits under this category are listed below:
(a) Improvement in product quality.
(b) Improvement in product design.
(c) Improvement in production flow.
(d) Improvement in employee morale and quality consciousness.
(e) Improvement of product service.
(f) Improvement in market place acceptance.

2. **Economic improvements oriented benefits:** The benefits under this category are as follows:
(a) Reductions in operating costs.
(b) Reductions in operating losses.
(c) Reductions in field service costs.
(d) Reductions in liability exposure.

Principle of Total Quality Management:

The basic principle of TQM should be carried out using the 8 QM principles which are:
1. **Customer focus.**
2. The role of Leadership.
3. Involvement of People.
4. Process Approach.
5. System Approach to Management.
6. Continual Improvement.
7. Factual Approach to decision making.
8. **Mutual Beneficial Supplier relationship**.

1- Customer focus:
Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

2. Leaders:
Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

3-Involvement of People:
People at all levels are the essence of an organization and their involvement enables their abilities to be used for the organizations benefit.
Involving people means sharing knowledge, encouraging and recognizing their contribution, utilizing their experience and operating with integrity.

4. Process Approach:
A desired result is achieved more efficiently when activities and their related resources are managed as a process.

- Processes are dynamic-they cause things to happen. Processes within an organization should be structured in order to achieve a certain objective in the most efficient and effective manner.

5. System Approach to Management:

- Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives
- Systems are constructed by connecting interrelated processes together to deliver the system objectives which in the case of the QMS are the satisfaction of the interested parties.

6- Continual Improvement:
Continual improvement of the organization's overall performance should be a permanent objective of the organization

- Continual improvement is the progressive improvement in organizational efficiency and effectiveness.

7- Factual Approach to Decision Making:

- Effective decisions are based on the analysis of data and information.
- Facts are obtained from observations performed by qualified people using qualified means of measurements i.e. the integrity of the information is known.

8- Beneficial relationships are those in which both parties are knowledge, vision, values, and understanding. Suppliers are not treated as adversaries. By:

- Clear and open communication.
- Sharing information and future plans.
- Establishing joint development and improvement activities.

The importance of TQM in Health care systems:

 Health services include a wide variety of quality aspects, all of which are important. In the case of medical services, the seller is doctors, hospitals, nursing homes, clinics, etc.

 Because they offer health services for sale as stipulated prices.

 They buyer is the client or patient who buys these health services at the stipulated prices.

 It may also include quality of performance that is directly connected and closely related to healthcare such as food, housing, safety, security, attitude of employees, and other factors that arise in connection with hospitals and nursing homes.

TQM for the Workforce:

 -Kaizen teams -An intense and rapid improvement process in which a team or a department throws all its resources into an improvement project over a short period of time.

 -Blitz teams usually comprise of employees *from all areas involved in the process* who understand it and can implement the changes on the spot.

-Quality Circles: Teams of workers and supervisors that meet regularly to address work related problems involving quality and productivity.

- Typically small day-to-day problems are given to quality circles. Since workers are most familiar with the routine tasks, they are asked to identify, analyze and solve quality problems in the routine processes.

- **TQM and Six Sigma:**

- Generally, a Six Sigma approach covers one or more areas of TQM Elements.

- **Barriers to Successful TQM:**
  Lack of long-term commitment and leadership for management.

 Insufficient empowerment of workers.
 Lack of cross-functional, cross-disciplinary efforts.
 Misdirected focus – emphasis on the unimportant many problems facing the organization rather than a critical problems.
 Emphasis on internal processes to the neglect of external - customer- focused – results.
 Lack of focus in training and coaching

 Lack of cost-of-quality measurement, performance reporting, and reward/formal recognition systems.

9- Six Sigma

As per Joseph M. Juran:

Quality is the final product being in 'conformance to specifications' or 'conformance to standards'. Conformance to specification is only one of the many means to reach at end product that is 100% defect free.

Definition of Six Sigma:

Is a process of management methodology that provides a systematic means of developing and improving processes by Eliminate waste, rework, and mistakes. Increase customer satisfaction and Increase profitability and competitiveness

The Six sigma was founded by Motorola in the 1970s.

• **Bill Smith, "Father of six sigma"** introduces this quality improvement Methodology to Motorola. They founded a connection between increases in quality and decreases in costs of production.

• **Six sigma** focuses on understanding the voice of the customer and using data-driven techniques.

Six Sigma + Lean Manufacturing

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Six Sigma:	**Lean:**
Improve quality Focus on part of Process Reduce defects, Increase Capability & Productivity.	Reduced waste Holistic view of process Reduce lead Time, Increase Capacity & Lower Inventory

Lean six sigma is reducing the defect of the process and eliminate the wast in time, effort and resources.

Six sigma is a business statistical Strategy.

 Is to identifying defects and removing them from the process of products to improve quality.

 A defect is defined as any process output that does not meet customer specifications.

 Statistical measure used to objectively evaluate process.

2. Six Sigma DMAIC Process:

- **Define:** Define who your customers are, and what their requirements are for your products and services – Their expectations.

Define your team goals, project boundaries, what you will focus on and what you won't. Define the process you are striving to improve by mapping the process.

- **Measure:** Eliminate guesswork and assumptions about what customers need and expect and how well processes are working.

Collect data from many sources to determine speed in responding to customer requests, defect types and how frequently they occur, client feedback on how processes fit their needs, how clients rate us over time, etc. The data collection may suggest charter revision

Analyze: Grounded in the context of the customer and competitive environment, analyze is used to organize data and look for process problems and opportunities. This step helps to identify gaps between current and goal performance, prioritize opportunities to improve, identify sources of variation and root causes of problems in the process.

 Improve: Generate both obvious and creative solutions to fix and prevent problems. Finding creative solutions by correcting root causes requires innovation, technology and discipline. Control: Insure that the process improvements, once implemented, will "hold the gains" rather than revert to the same problems again. Various control tools such as statistical process control can be used. Other tool such as procedure documentation helps institutionalize the improvement.

 Design: Develop detailed design for new process. Determine and evaluate enabling elements. *Create control and testing plan for new design. Use tools such as simulation, benchmarking and cost/benefit analysis.*

 Validate: Test detailed design with a pilot implementation. If successful, develop and execute a full-scale implementation. *Tools in this step include: planning tools, flowcharts/other process management techniques, and work documentation.*

The nursing role in quality management.

1. The coordinator:

 Responsible for planning, organizing, developing, implementing and evaluating quality program on cooperation with nursing and medical staff in the organization.

 Share in organization and nursing committees.

 Share in developing nursing standard & criteria.

 Recommend for change to improve quality.

2. The director of nursing service:

 Make commitment for implementing quality program.

 Share in evaluating institutional effectiveness & efficiency.

Part 2:10- Concepts of patient safety

Definition of Safety:
It is the freedom from danger, risk, or injury in the workplace.

Definition of Patient Safety:

 Patient safety was defined as “the prevention of harm to patients”.
(1) Emphasis is placed on the system of care delivery that.
(2) prevents errors; (3) learns from the errors that do occur; and (4) is built on a culture of safety that involves health care professionals, organizations, and patients.

Patient Safety Culture:

 Pervasive commitment to patient safety.

 Open communication.

 Just culture vs Blame/No Blame environment.

 Safety design.

 Involvement and accountability of all employees.

<u>Concept of patient safety in health care:</u>

 Safety is a fundamental principal of patient care and critical component of quality management.

 Its improvement demands a complex system wide effort, involving abroad rang of actions in performance improvement, environment.

 Safety and risk management, including infection control equipment safety safe clinical practice add safe environment of care.

 It embraces nearly all health –care disciplines and actors, and thus requires a comprehensive, multifaceted approach to identifying and managing actual and potential risks to patient safety in individual services and fining broad long-term solutions for the system as a whole.

The six aims *of Patient Safety* are:

Safety – avoiding injuries to patients from the care that is intended to help them.
Effective – providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit

Patient-centered – providing care that is respectful of and responsive to patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.

Timely – reducing waits and sometimes harmful delays
for both those who receive and those who give care.

Efficient – avoiding waste, including waste of equipment, supplies, ideas, and energy.
Equitable – providing care that does not vary in quality because of personal characteristics such as gender, geographic location, and socioeconomic status.

11- Common error in the medical and critical care units regarding patient safety:

1- Fall the patient:

 Injury resulting from patient's falls in the hospitals setting is a common cause of lawsuits against nurses.
If a patient is unsteady or receiving medication that causes drowsiness, take appropriate precautions before leaving him unattended (for example; when appropriate raise side rails on the stretcher or bed.)-
In addition, document all measures taken to protect patient in the patient's medical record.

 For Example if changed a patient's room to be closer to the nurses' station document these nursing interventions.
On the other hand, faulty use of protective measures and procedures for patient handling and bathing is a malpractice act resulting in patient slips down and injury. Therefore, the patient nurses take appropriate precautions before handling them

The nurse uses safety measures, such as keeping the patient's bed in a low position and checking on the patient whenever the nurse or other caregivers pass the patient's room, in an effort to avoid the.

Use of restraints. ***Chemical restraints, primarily psychotropic medications*** such as sedatives, hypnotic, anti- anxiety agents, and narcoleptics, are used control hyperactive behavior of agitated patient. Restraints are legal only if they are necessary to protect the patient others from harm.

 Acting with restraint: one of most important legal obligations is to protect patient from harming themselves or others, according to:

 A physician must order the restrain in writing. The order must include the date and time, the type of restraint ordered; the purpose; and a specific short-term (**24 hours or** less) time limit.

 The order **cannot renewed** without reassessment of the patient. If restraints are still indicated after reassessment, the physician must write a new order.

 In an emergency, may apply restraints without an order, but you should obtain a written order within a short time (such (as 1 hour), as specified by policy.

- If need to restrain a patient to prevent falls, remember that physical restraints can cause a number of adverse injuries as well,
including **skin breakdown, friction burns, abrasions, bruises, paired circulation, suffocation increased agitation, contractures, and pressure ulcers secondary to decreased mobility, dehydration and incontinence**.

Medication Errors:

Medication administration is an area fraught with potential danger. According to the President of National Medication Error Reporting Program, medication error kills one person per day.

- Furthermore, the director of projects for the People's Medical Society "a patient advocacy group" has estimated that thousands of deaths occur each year as a result of medication errors.
- The number of deaths caused by medication errors in PICUs increased from 2.876 in 1995 to 7.391 in 2000. Consequently, hospital medication delivery system should be designed, hence, there is of system checks and balances to reduce medication errors.
- Good nursing practice requires understanding the medication administer before administrating a medication to the patient.
- Know the drug's dosage range, possible adverse effect, toxicity level, indications and contraindications. In addition, always be aware of hospital's policies and procedures. If nurses are unfamiliar with a medication plan to administer, review text or consult a pharmacist.
- Alternatively can ask supervisor about the drug. If nurses do not understand a physician order questions the physician about the drug dosage, potential adverse effect, and routs of administration as necessary.

Failure to Provide Sufficient Monitoring.
Failure to remove foreign Objects.
Improper Use of Equipment.
Failure to Communicate: Communication between nurse and patient's family and between nurse and other health care professionals
Failure to Documentation
Risk of infection
Prevent the spread of infection as the health care facility may adopt its own infection control policies and practices. infections, is a high priority in health care.

Nurses should use techniques that prevent microorganisms from living, growing, and spreading. Two methods are used to reduce or eliminate the presence of microorganisms and thus prevent infections.

<u>These two methods are called surgical asepsis and medical asepsis</u>.

Surgical asepsis refers to the practice that eliminates the presence of all microorganisms (bacteria, viruses, fungi, yeasts, molds, rickettsia, and protozoa).

This practice is sterilization, while medical asepsis refers to practices that help reduce the number and' inhibit the growth of microorganisms, especially pathogens (those that cause infections or contagious diseases).

Medical asepsis, also called clean technique includes use of antimicrobial agents, hand washing, cleaning supplies and equipment, and disinfection.

It is important that the nurse teach patient and their family facts and practices about surgical and medical asepsis.

12- Guidelines for hospital fire safety measures.

Health care facilities should have regular fire drills so that all personnel know exactly what to do.

Health care personnel should be trained and drilled in: Fire prevention, Location and use of fire alarms, Location and use of fire extinguishers, Location of emergency exits, and evacuation procedures.

Signs should be posted to show that oxygen is in use where applicable.

If patient is receiving oxygen as part of his treatment, be sure that the patient, his roommates, and visitors know that smoking is prohibited.

NOTE: Smoking is prohibited in treatment areas of most health care facilities.

If a fire occurs, follow these steps;

Activate the fire alarm procedures, turn off oxygen, lights, and any electrical equipment in the vicinity of the fire, remove the patients who are in immediate danger, notify the hospital "switchboard" of the location of the fire, close windows and doors to reduce ventilation, using the fire extinguisher,

Attempt to extinguish the fire, return patients who are not endangered to their rooms.

Guidelines for Hospital electrical Safety Measures includes:

1. Use electrical equipment for the intended purpose only.

2. Keep television sets, telephones, radios, electric shavers, and all other electrical equipment and appliances away from bathtubs and washbasins.

3. Test all small appliances before use to see that they are in good working order.

4. Ensure periodic service checks of all electrical equipment; remove a plug from a wall socket by grasping the plug, not the cord, use plugs and outlets with a ground when possible.

5. Do not overload an electrical outlet, never use faulty equipment.

6. If an appliance overheats, produces a shock or gives off an odor while being used, remove the appliance from the area.

7. Follow procedures to have the appliance evaluated by medical maintenance.

NOTE: An electric spark near a high concentration of oxygen or certain anesthetic gases may cause an instant and serious fire**.**

Role of Nurses in patient safety

 Nurses are very close to the patient as they are responsible for their care, they are in well position to observe and influence care. Thereby, nurses can detect and address threats to patient safety in hospital.

 Researches have pointed a strong relationship between nurses and patient safety outcomes.
Nurses have power to identify risk factors that could affect patient safety; they are the one who implement the safety elements in dealing with patient by understanding him/her and communicate patient's needs to healthcare system. Failure in listening to the patient is jeopardizing patient safety.

 Preventing hospital-acquired infections, which sometimes result in increasing rate of morbidity and mortality, as a result increase in health care cost. Most of hospital-acquired pathogens are transmitted from patient to patient through the hands of health care workers.

 Because of that hand washing is the best, simplest and most effective proven method to reduce the incidence of nosocomial infection.

 Nurses are responsible also in preventing fall of the patient in hospitals. A fall is defined as unintentionally coming to rest on the ground floor, or other lower level, but not as a result of syncope or overwhelming external force.

 Nurses should do risk assessment to identify individuals at risk for falling by taking patient safety history to detect past falls, Hospitals should provide protocol used by nurses as tool to perform falls risk assessment and prevent it. Prevention of pressure ulcer in immobilized patient is an important issue in patient safety.

 Because a large part of nurse's job is assessment, health care organizations as well as investigators have issued various nursing assessment tools as interventions, such as fall risk assessment, pressure ulcer risk assessment, or identification of patient at high risk for malnutrition to reduce adverse events and provide safety.