Symbiosis Institute of Health Sciences

A Dissertation on

"To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"

Submitted by

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Under the guidance of

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Submitted to

Symbiosis Institute of Health Sciences,
(Symbiosis International University)

in partial fulfillment of the requirements for the award of the Degree of Master of Business Administration
2019-2021

CERTIFICATE

This is to certify that the Dissertation entitled **"To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"** by Mr. **Digvijay Shishodia** is the bonafide work completed under my supervision and guidance, hence approved for submission in partial fulfillment of the requirement for the Degree of Master of Business Administration in Hospital and Healthcare Management (2019-2021).

Date:_____ _____

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MBA-HOSPITAL AND HEALTHCARE MANAGEMENT 2019-21

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Organization: **International Society for Quality and**

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Dissertation Title: "To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"

Declaration:

I hereby declare that the Dissertation entitled **"To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"** has been submitted during the year 2020-2021 under the guidance of "Dr ROOPASHREE M.R" at Symbiosis Institute of Health Sciences, in partial fulfilment of the requirements of the Master of Business Administration (MBA-HHM) degree from Symbiosis International University.

I hereby confirm that the project I have provided is solely my own effort. I have not copied from any other student or from any other source either against payment or free, and I did not provide any plagiarized material in any section of my report. I further confirm that the documents provided are genuine and have been issued by the authorized person in the organization.

(DIGVIJAY SHISHODIA)

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Digvijay Shishodia** pursuing MBA in Hospital & Healthcare Management (Batch 2019-21) from Symbiosis Institute of Health Sciences, Pune has successfully completed his Summer Internship during May-Jun 2020 with ISQSH, Qatar. The project undertaken by him is titled **"To study how to improve process of Quality Improvement and Patient Safety Process (QPS) with JCI standards."**

The Project on evaluation fulfills all the stated criteria and the student's findings are his original work. We found his sincere, hardworking, technically sound and result oriented. He worked diligently during his tenure and hence we hereby certify his work as "**Excellent**".

We take this opportunity to thank him and wish him all the best for his future endeavors.

Signed:

CEO Asia Pacific
International Society for Quality and Safety in Healthcare
Place: Doha, Qatar.
Date: August 28, 2020

Dissertation Title: "To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"

Abstract

Introduction**:** Improvement in quality is the way for enhancing patient safety, efficiency and effectiveness. Reconstructing, redesigning and modifications in healthcare system requires indulgence in specialised tools and methods know to assist improvement. The process of improving the Quality Improvement and Patient Safety (QPS) unit are to set improved norms, standards and promote best practices towards quality improvement and patient safety with the help of Joint Commission International (JCI). This can be achieved by setting the process for betterment. The outcomes can be seen as effectiveness and efficiency in care delivery process.

Methods: Descriptive study on the process improvement of QPS with the help of different surveying tools such as questionnaires and discussion with quality improvement professionals.

Results: Improvement in Measurable Elements (MEs), Intents and Standards of QPS improved the patient and staff safety. Improvement in the process will enhance the Quality measures of Patient Safety. It helps to implement the improved process, tools and strategies used for the QPS by the Quality management professionals in the organisation.

Discussion: Process Improvement in QPS started from the existing process in QPS of JCI. Using different tools and strategies of Quality management like Lean Management, Six Sigma Methodology, Project Management, PDCA (Plan, Do, Check, Act) cycle will improve the process.

Application: The improved process of QPS revise the new edition of JCI Accreditation.

Conclusion: Improvement in process of QPS provides the revised norms and standards for patient safety and improves Quality.

Keywords: Quality Improvement, Quality Tools, Joint Commission International Accreditation (JCI), Quality Management, Patient Safety.

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Digvijay Shishodia

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[MBA HHM (2019-21)]

SIHS, Pune

To study how to improve process of Quality Improvement and Patient Safety with JCI Standards

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DISSERTATION TITLE-

"To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"

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"To study how to improve process of Quality Improvement and Patient Safety (QPS) with Joint Commission International (JCI) Standards"

CHAPTER -01

INTRODUCTION

According to the World Health Organization (WHO), Accreditation is the most important approach for improving the quality of health care structures. Accreditation is a means to improve quality care.

In the 21st century, trends for greater transparency and performance monitoring have become established in the health care industry. The healthcare systems across the world now recognize the need to pay attention to patient safety. The continual increase in the number of research publications relating to the health care industry reflects the powerful improvement. Semi-annual reports by the Institute of Medicine (IOM)[1] in the United States (US) and the United Kingdom's (UK's) Department of Health (DH) over the last decade capture the main issues surrounding quality and safety of care.[2]

In the International Patient Safety Goals (IPSG), there are ten (10) standards and thirty (30) measurable elements (MEs). As per JCI Accreditation, International Patient Safety Goals (IPSG) is a very important and critical chapter in the Joint Commission International (JCI) Accreditation.

In the Quality Improvement and Patient Safety (QPS), there are eleven (11) standards and fifty-three (53) Measurable Elements (MEs). As per the JCI Accreditation, Quality Improvement and Patient Safety is one of the important Chapter in the Joint Commission International (JCI) Accreditation.

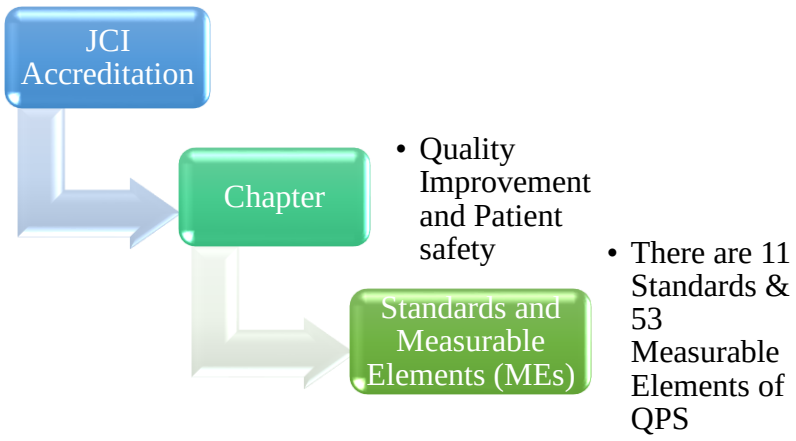


Figure 01: Flow chart of QPS chapter of JCI

Source: Manual of JCI 6th edition

Hospitals must have a framework to support ongoing quality improvement and patient safety. Quality improvement and patient safety (QPS) impacts all aspects of the operations in the hospital.

Quality improvement and patient safety (QPS) programs are as follows:

- Leadership-driven.
- To change the culture of an organization.
- Proactively identify and reduce variation.
- Use data-driven to focus on priority issues.
- To demonstrate sustainable improvements.

There are 11 standards of quality improvement and patient safety (QPS) given by the JCI.

QPS. NO	**STANDARD**	**NUMBER OF MEs**
QPS1	A qualified individual guides the implementation of the hospital's program for quality improvement and patient safety and manages the activities needed to carry out an effective program of continuous quality improvement and patient safety within the hospital. P	05
QPS2	Quality and patient safety program staff support the measure selection process throughout the hospital and provide coordination and integration of measurement activities throughout the hospital	04
QPS3	The quality and patient safety program use current scientific and other information to support patient care, health professional education, clinical research, and management.	05
QPS4	The quality and patient safety program include the aggregation and analysis of data to support patient care, hospital management, and the quality management program and participation in external databases.	05
QPS4.1	Individuals with appropriate experience, knowledge, and skills systematically aggregate and analyse data in the hospital.	06
QPS5	The data analysis process includes at least one determination per year of the impact of hospital-wide priority improvements on cost and efficiency.	03
QPS6	The hospital uses an internal process to validate data. P	04
QPS7	The hospital uses a defined process for identifying and managing sentinel events. P	04

QPS8	Data are always analysed when undesirable trends and variation are evident from the data. P	05
QPS9	The organization uses a defined process for the identification and analysis of near-miss events.	04
QPS10	Improvement in quality and safety is achieved and sustained	04
QPS11	An ongoing program of risk management is used to identify and to proactively reduce unanticipated adverse events and other safety risks to patients and staff. P	04

Table 01: Standards of Quality improvement and patient safety (QPS)

List of 34 JCI accredited Hospitals in India as per the 2019 data, the list of the JCI accredited hospitals is given below.

Sl. No.	**Hospital Name**	**Location**
1	Aditya Birla Memorial Hospital	Pune – Maharashtra
2	Ahalia Foundation Eye Hospital	Palakkad – Kerala
3	Alexis Multispecialty Hospital	Nagpur – Maharashtra
4	Apex Heart Institute	Ahmedabad – Gujrat
5	Apollo Gleneagles Hospitals	Kolkata – West Bengal
6	Apollo Hospital, Chennai	Chennai – Tamil Nadu
7	Apollo Hospital, Hyderabad	Hyderabad – Andra Pradesh
8	Apollo Hospitals Enterprise Limited	Navi Mumbai – Maharashtra
9	Apollo Hospitals International Limited	Gandhinagar – Gujrat
10	Apollo Hospitals, Bangalore	Bangalore – Karnataka
11	Artemis Hospital	Gurgaon – Delhi
12	Asian Heart Institute and Research Center	Mumbai – Maharashtra
13	Aster Medcity	Kochi- Kerala
14	Care Institute of Medical Sciences	Ahmedabad – Gujrat
15	Columbia Asia Hospital	Bangalore – Karnataka
16	Continental Hospitals Limited	Hyderabad – Andhra Pradesh
17	Dr B. L. Kapur Memorial Hospital	New Delhi – New Delhi
18	Eternal Heart Care Center & Research Institute	Jaipur – Rajasthan
19	Fortis Hospital, Mulund	Mumbai – Maharashtra
20	Fortis Hospital, Mohali	Mohali – Punjab
21	Fortis Memorial Research Institute	Gurgaon – New Delhi
22	Indraprastha Apollo Hospitals	New Delhi – New Delhi
23	Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute	Mumbai – Maharashtra

24	Maharaja Agrasen Hospital	New Delhi – New Delhi
25	Max Super Speciality Hospital	New Delhi – New Delhi
26	Medanta – The Medicity	Gurgaon – New Delhi
27	Moolchand Hospital	New Delhi – New Delhi
28	Narayana Institute of Cardiac Sciences	Bangalore – Karnataka
29	Narayana Multi-speciality Hospital	Jaipur – Rajasthan
30	Rajagiri Hospital	Ernakulam – Kerala
31	Satguru Partap Singh Hospital	Ludhiana – Punjab
32	Seven Hills Hospital	Mumbai – Maharashtra
33	Sri Ramachandra Medical Centre	Chennai – Tamil Nadu
34	Wockhardt Hospitals	Mumbai – Maharashtra

Table 02: List of JCI Accredited Hospitals in India

Source: From Internet

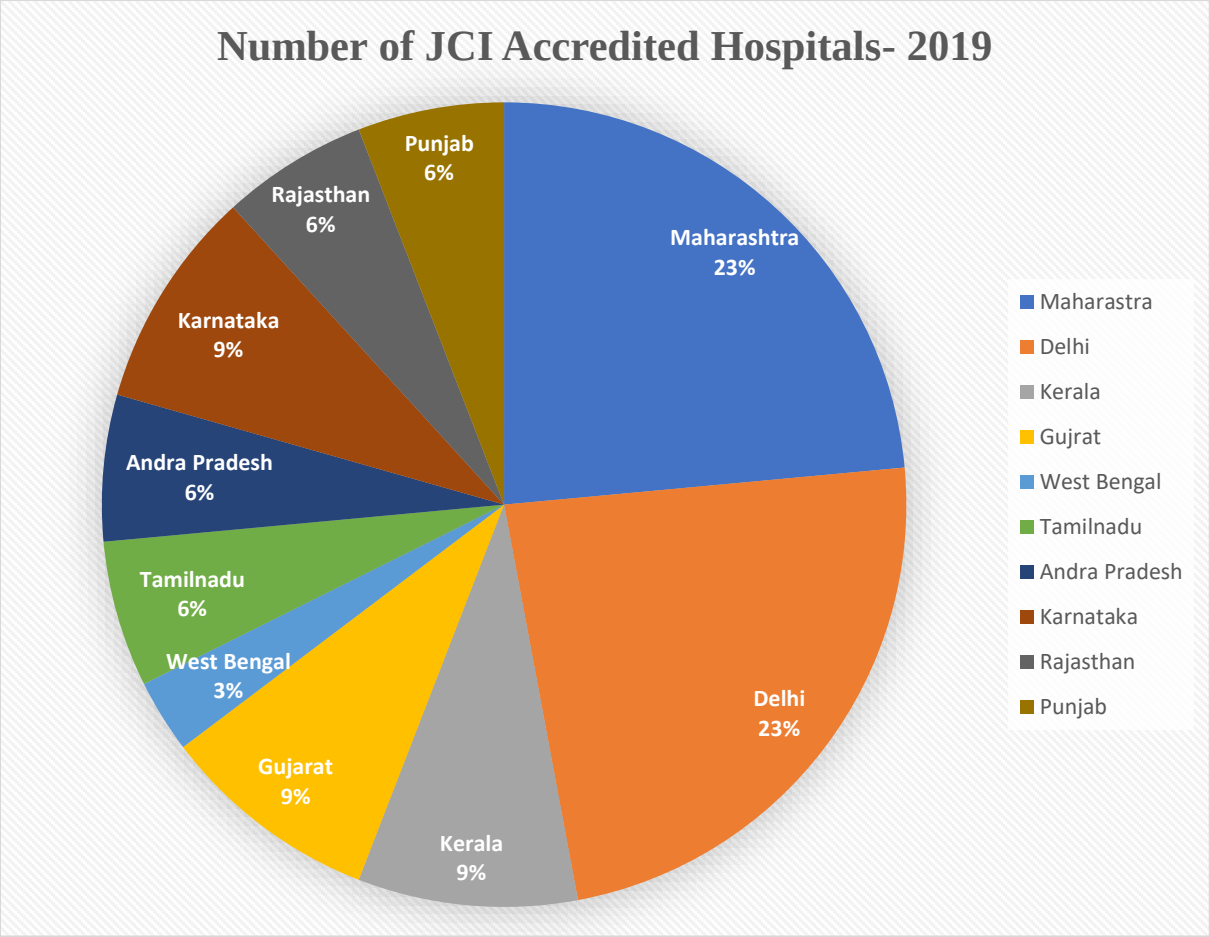


Figure 02: Pie Chart of JCI accredited Hospitals in India

Source: Author's own source

CHAPTER-02

THEME OF THE STUDY

- Quality improvement process for the International patient safety by JCI Standards.

CHAPTER-03

AIM

- To provide suggestions and recommend measurable elements for the new edition of Joint Commission International (JCI) with process improvement in Quality Improvement and Patient Safety (QPS) chapter.
- To implement JCI norms among the healthcare workers in developing countries.

OBJECTIVES OF THE STUDY

1. To Understand and analyse critically International Patient Safety Goals (IPSG) Standards in Joint Commission International (JCI) Accreditation.
2. To achieve the Quality Improvement and Patient Safety (QPS) with the help of Standards, Intents and Measurable elements (MEs) of Joint Commission International Accreditation.
3. To promote specific quality improvements norms in patient safety.

The key objective of this study is to achieve the improved QPS norms and standards. So that the guidelines and norms set for the current and future situations in the Quality department of healthcare organisations will be easily followed.

The study is framed after studying the major guidelines, standards, intents, measurable elements and norms set by the JCI in the field of Quality Improvement and Patient Safety (QPS).

CHAPTER 4

LITERATURE REVIEW

The International Patient Safety Goals (IPSG), as needed for implementation as of 1 January 2011 in altogether organizations accredited by Joint Commission International (JCI) under the International Standards for Hospitals.[3]

The purpose of the IPSG is to promote certain improvements in patient safety. Recognizing that sound system design is constitutional to the delivery of safe, high-quality health care, the goals generally focus on system-wide solutions, wherever possible.

The goals are structured in the same manner as the other standards, including a standard (goal statement), an intent statement, and measurable elements (ME). The goals are scored similarly to other standards as "met," "partially met," or "not met." The accreditation decision rules include compliance with the IPSG as a separate decision rule. The goals highlight problematic areas in health care and describe evidence- and expert-based consensus solutions to those problems.

These are the following goals of International Patient Safety Goals (IPSG):

To identify patients correctly.	To improve effective communication	To improve the safety of high-alert medications
To ensure safe surgery	To reduce the risk of health care-associated infections	To reduce the risk of patient harm.

Tools and Strategies for Quality Improvement:

The necessity for quality and safety improvement initiatives permeates health care. Quality health care is defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional

knowledge. According to the Institute of Medicine (IOM) report, the majority of medical errors result from faulty systems and processes, not individuals[4]. Processes that are inefficient and variable, changing case mix of patients, health insurance, differences in provider education and experience, and numerous other factors contribute to the complexity of health care. The IOM put forth the following six aims of health care: **effective, safe, patient-centre, timely, efficient, and equitable.**

Due to system or process failure errors are caused, it is important to adopt various process-improvement techniques to identify inefficiencies, ineffective care, and preventable errors to then influence changes associated with systems. Each of these techniques involves assessing performance and using findings to inform change. The strategies and tools for quality improvement—including failure modes and effects analysis, Plan-Do-Study-Act (PDSA), Six Sigma, Lean, and root-cause analysis—that have been used to improve the quality and safety of health care.

Measures and Benchmarks

Efforts to improve quality need to be measured to demonstrate "whether improvement efforts

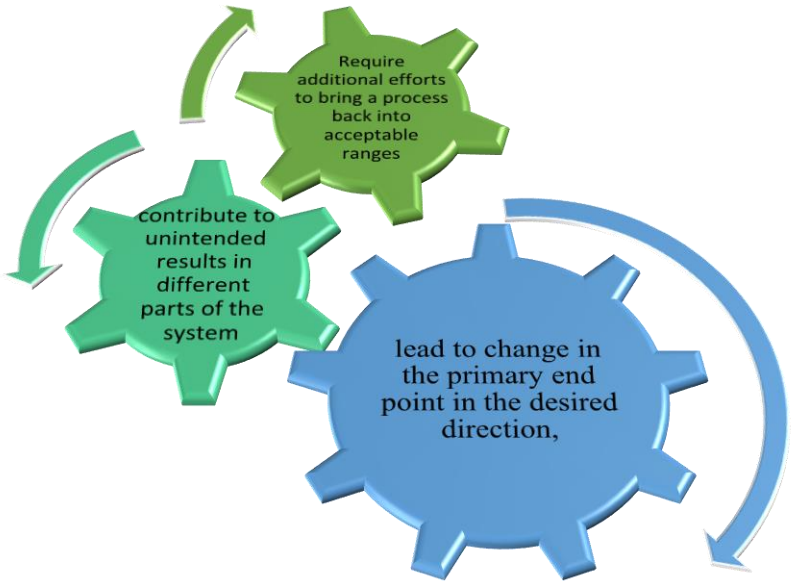


Figure 03- Quality Improvement Efforts

Source: Author's own source

The rationale for measuring quality improvement is the belief that good performance reflects good-quality practice, and that comparing performance among providers and organizations will encourage better performance.

The Agency for Healthcare Research and Quality (AHRQ), the National Quality Forum, the Joint Commission, and many other national organizations endorse the use of valid and reliable measures of quality and patient safety to improve health care. Many of these useful measures that can be applied to the different settings of care and care processes can be found at AHRQ's National Quality Measures Clearinghouse[5] and the National Quality Forum's[6]. These measures are generally developed through a process including an assessment of the scientific strength of the evidence found in peer-reviewed literature, evaluating the validity and reliability of the measures and sources of data, determining how best to use the measure (e.g., determine if and how risk adjustment is needed), and actually testing the measure.

Measures of quality and safety can track the progress of quality improvement initiatives using external benchmarks. There are two types of benchmarking that can be used to evaluate patient safety and quality performance.

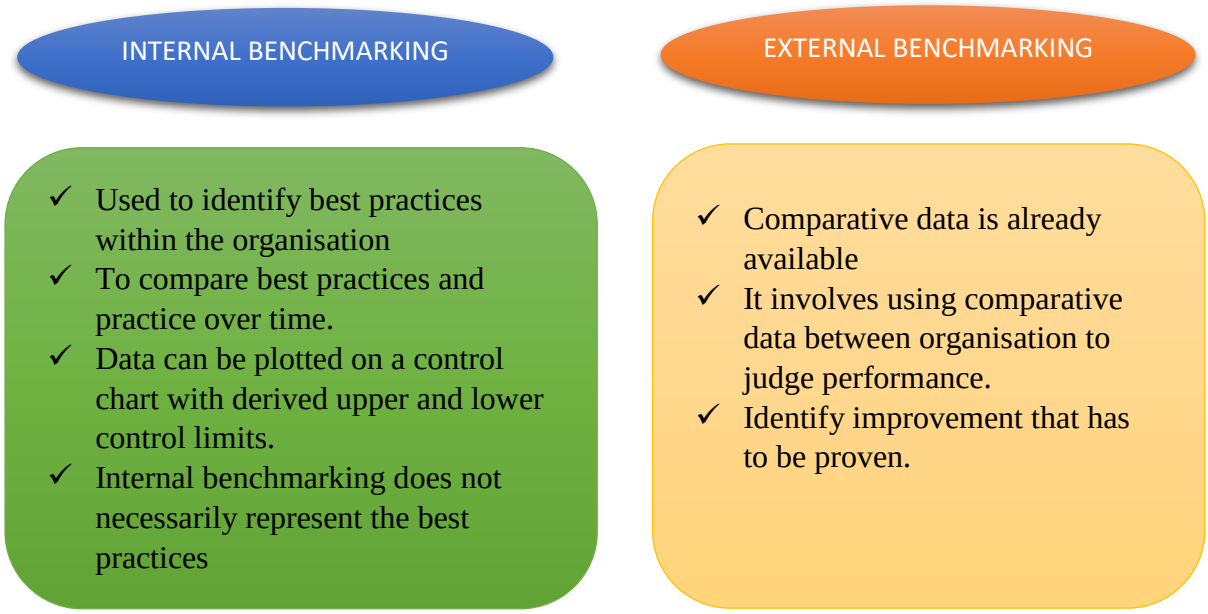


Figure 04- Internal & External benchmarking

Source: National Quality Forum's

Quality Improvement Strategies:

Donabedian proposed measuring the quality of health care by observing its structure, processes, and outcomes.[7] Structure measures assess the accessibility, availability, and quality of resources, such as health insurance, bed capacity of a hospital, and number of nurses with advanced training.

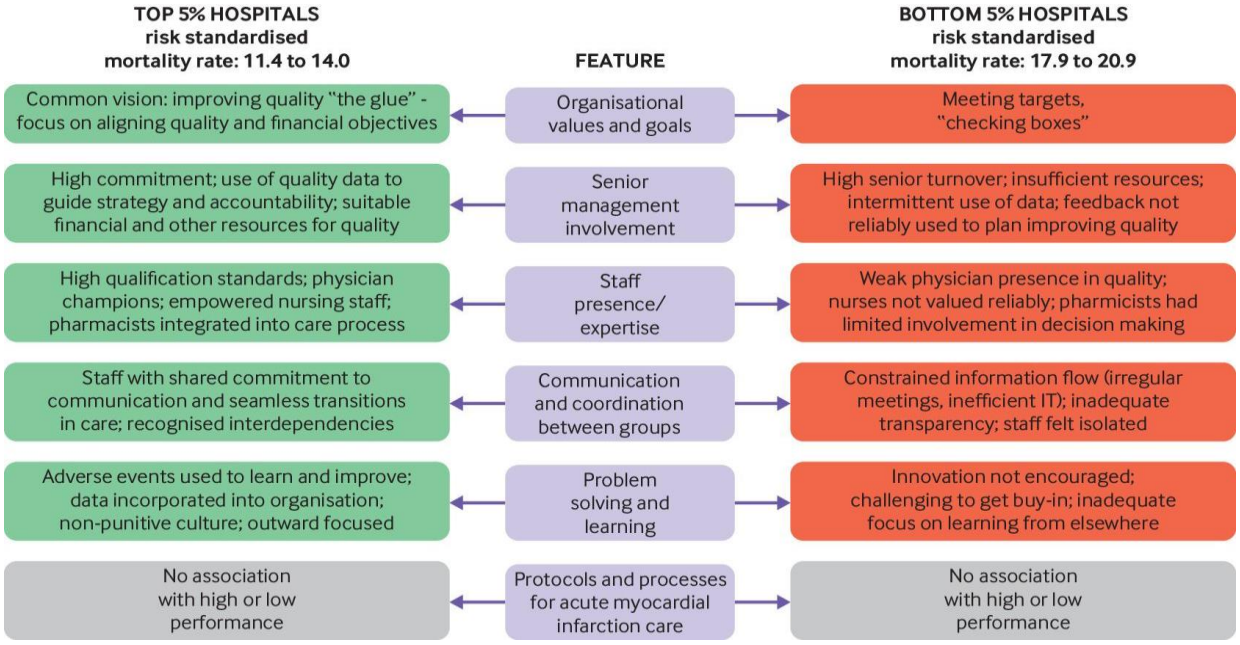


Figure 05- Strategies of Quality Improvement.

Source: Hospitals Strategies for quality Improvement.[7]

Deming, the father of Total Quality Management (TQM), promoted "constancy of purpose" and systematic analysis and measurement of process steps in relation to capacity or outcomes.[8]

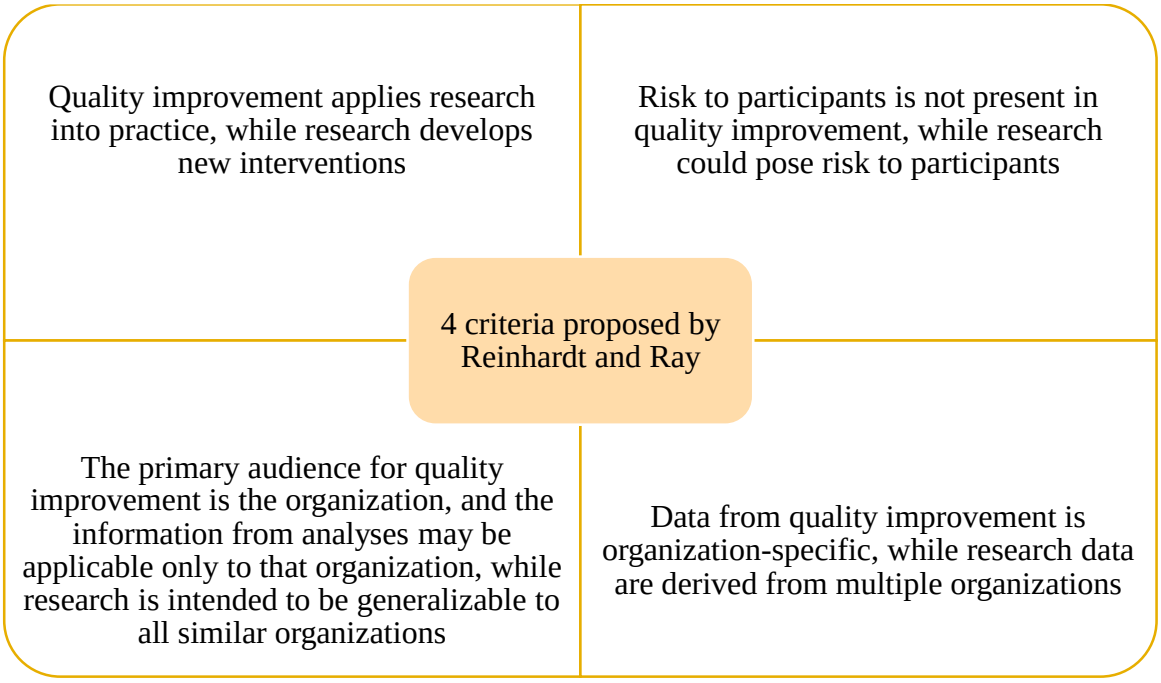
Quality improvement strategies have come forth, including the International Organization for Standardization ISO 9000, Zero Defects, Six Sigma, Baldridge, and Toyota Production System/Lean Production.[9]

Quality improvement is defined "as systematic, data-driven activities designed to bring about immediate improvement in health care delivery in particular settings. A quality improvement strategy is defined as "any intervention aimed at reducing the quality gap for a group of patients representative of those encountered in routine practice. Many other strategies and tools for quality improvement can be accessed at AHRQ's quality tools Web site (www.qualitytools.ahrq.gov) and patient safety Web site (www.patientsafety.gov).

Quality improvement projects and strategies differ from research: while research attempts to assess and address problems that will produce generalizable results, quality improvement projects can include small samples, frequent changes in interventions, and adoption of new strategies that appear to be effective.

There are 15 literature reviews are taken into consideration for the study.

In a review of the literature on the differences between quality improvement and research, Reinhardt and Ray[10] proposed four criteria that distinguish the two:



The minimal availability of scientific health services literature has restricted the acceptance of quality improvement methods in health care, but new rigorous studies are emerging. It has been asserted that a quality improvement project can be considered more like research when it involves a change in practice, affects patients and assesses their outcomes, employs randomization or blinding, and exposes patients to additional risks or burdens—all in an effort towards generalizability.

CHAPTER 5

MATERIAL AND METHOD

METHOD

Place of study:

The study was conducted at online platform for summer Internship project. Study was conducted during the working hours of the personnel i.e. from 9 am in the morning till 5 pm in the evening during the period 15th May 2020 to 15th July 2020.

Study procedure:

This study is Cross sectional, Exploratory, Descriptive, Observational and Qualitative. The study usually involves process of quality improvement for the patient safety.

Study variable:

- All quality parameters are taken into consideration.
- Awareness & importance of quality tools in healthcare industry.
- The working behaviour and pattern of staff towards the implementation of quality tools.
- Maintenance of standards, intents and measurable elements.

Outcome variable:

- Improved Quality and efficiency.
- Suggestion and recommendation for new JCI edition.

Study subject:

- No human environment.
- Online data collection.

Tools used in analysis:

- Data in collected and entered in Microsoft excel, Google spread sheet, interpreted and analysed.
- Required tools and software:
  - MS Excel
- System requirement
  - Window operating system.
- Database:
  - Google Spreadsheet and Google Drive.

METHODOLOGY

Study Settings:

- Study consist of reviewing of existing materials such as text material, publications, review articles, research papers.
- The study is conducted on reference of secondary data and primary data.

Primary data is collected from different quality healthcare professionals.

Following are the categories:

- Quality Department of Insurance companies
- Hospitals
- Diagnostic centres
- Technology companies
- Bio medical Devices companies

Secondary data: Google, websites, articles and journals.

- Online portals for Quality Improvement
- Internationally unique and exclusive Quality Improvement and Safety programs offered by countries e.g. Switzerland, Singapore, and the Qatar are analysed.
- Online data on Quality Improvement and Patient Safety are analysed.

Sample size:

- The primary data was collected from 76 quality healthcare professionals on an online platform with the help of google questionnaire.
- There is no separate breakup in the respondents, convenient sampling has been done.
- This data gives the suggestion and recommendation for the process improvement for Quality Improvement and Patient Safety (QPS) chapter of JCI.

CHAPTER 6

DISCUSSIONS

What was needed to Implement Quality Improvement Strategies:

Dynamic and consistent support from the leadership and management, involvement, diligent attempt for a better and evolving improvements and visibility, not just on paper but in behavior, are necessary for making significant changes [11]. A supporting and available hospital board is an added advantage. The unpreventable demands of resources associated with changing process required senior leadership.

Framework

(1) To ensure adequate financial resources by identifying sources of funds for training and purchasing and testing innovative technologies and equipment.

(2) To facilitate and enable key players to have the needed time to be actively involved in the change processes, providing administrative support

(3) To support a time-consuming project by granting enough time for it to work; and

(4) To emphasize safety as an organizational priority and reinforce expectations, especially when the process was delay or results were periodically not realized.

Leadership was needed to make patient safety a key aspect of all meetings and strategies, to create a formal process for identifying annual patient safety goals for the organization, and to hold themselves accountable for patient safety outcomes.

The improvement process needed to involve all stakeholders and gain their understanding that the investment of resources in quality improvement could be recouped with efficiency gains and fewer adverse events.

Stakeholders were used to:

Figure 06- Quality Improvement Strategies from stakeholder perspective

Source: Author's own Source

It is imperative to inform about the purpose and strategy of the quality initiative to the stakeholders and can be done by sharing important and necessary[13].

Establishing and evolving pathways of communications at all the levels;

Making sure that patients and families are properly included in the dialogue;

ensuring a feeling of belongingness to the healthcare team from the stakeholders and making sure that each stake holders feels responsible for patient safety;

Discussing the learnings from the casual analysis; and

Making a focused attempt of the stakeholders by sharing patient safety stories with staffs and celebrating all the successes.

Although the process made sure that each employee was informed about the process and data behind the decision but then also few employees find difficulties in accepting a system change.

Other key factors to improvement success were implementing protocols that could be adapted to the patient's needs and to each unit-

Major Factors

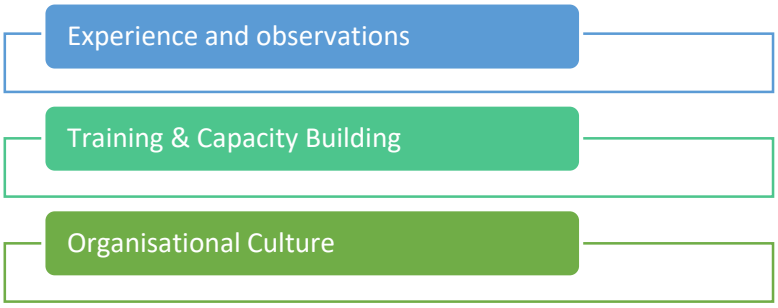


Figure 07: Key factors to implementing successful improvement.

Source: Author's own source

It is important to understand and define different approaches; different approaches can converge and arrive at the same point. Providing an understanding on the debility of the project and whether its effects are quantitatively measurable, and it is able to present evidence-based changes.

Quality Improvement Tools in Healthcare

List of Quality tools:

Sl. No	Quality Tools
1	A3 Report
2	Affinity Diagram
3	Arrow diagram

4	Balanced Scorecard
5	Benchmarking
6	Box and Whisker plot
7	Brainstorming
8	Cause & effect diagram/ Ishikawa/ fishbone Diagram
9	Check Sheet
10	Control Chart

Table 03: List of Quality Tools

Source: Primary data from respondents

Relevance

- Hospitals and healthcare organisation across the globe have been progressively implementing total quality management tools to reduce the costs, improve the efficiency and provide high quality patient care.
- Benefits of quality improvement tools in healthcare system:
  - ✓ It embraces a culture of safety, quality and transparency
  - ✓ Helps in improving the process an organisation reduces the chances associated with failure and redundancy.
  - ✓ Quality tools helps to efficiency of managerial and clinical processes leaves transition space for doctors and staff to provides responsive, respectful and value based care to a patient.

Quality tools usefulness in findings and analyzing problems with healthcare were seen more as helpful in arranging problems and focusing on systems rather than focusing on specific separate needs. Various tools are used to solve and change the errors, increasing costs and provider practices. Many of the initiatives used not only one but multiple of the quality improvement tools, such as beginning with root-cause analysis then using either Six Sigma, Toyota Production System/Lean, or Plan-Do- Study-Act to bring the change in processes. Almost every initiative included in this analysis performed some type of pretesting/pilot testing.

Investigators and leaders of several initiatives reported advantages of using specific types of quality tools. These are discussed as follows:

1. **Root-cause analysis** is seen to be very useful to assess errors and the mistakes and also helps in differentiate between the latent errors and the active errors, to identify need for changes in policies and procedures, and to serve as a basis to suggest system changes, including improving communication of risk[15].

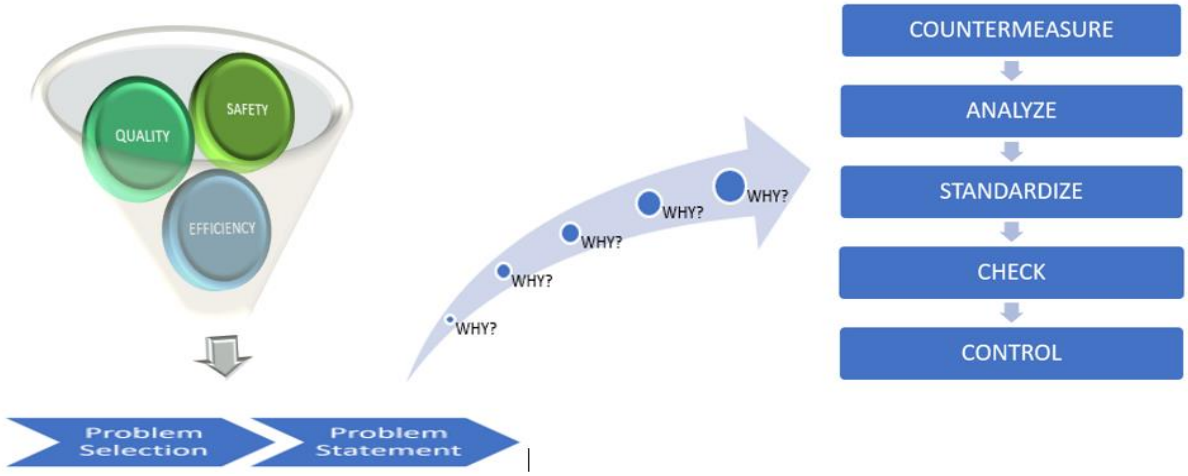


Figure 08: Root cause Analysis

Source: Internet

2. **Six Sigma/Toyota Production System** was reported to have been successfully used to decrease defects/variations and operating costs and improve outcomes in a variety of health care settings and for a variety of processes. Six Sigma was found to be a detailed process that clearly differentiated between the causes of variation and outcome measures of process. One of the advantages of using Six Sigma was that it made work-around and rework difficult because the root causes of the pre-implementation processes were targeted.[11] Additionally, investigators reported that the more teams worked with this strategy, the better they became at implementing it and the more effective the results. Six Sigma was also an important strategy for problem-solving and continuous improvement; communicating clearly about the problem; guiding the implementation process; and producing results in a clear, concise, and objective way.

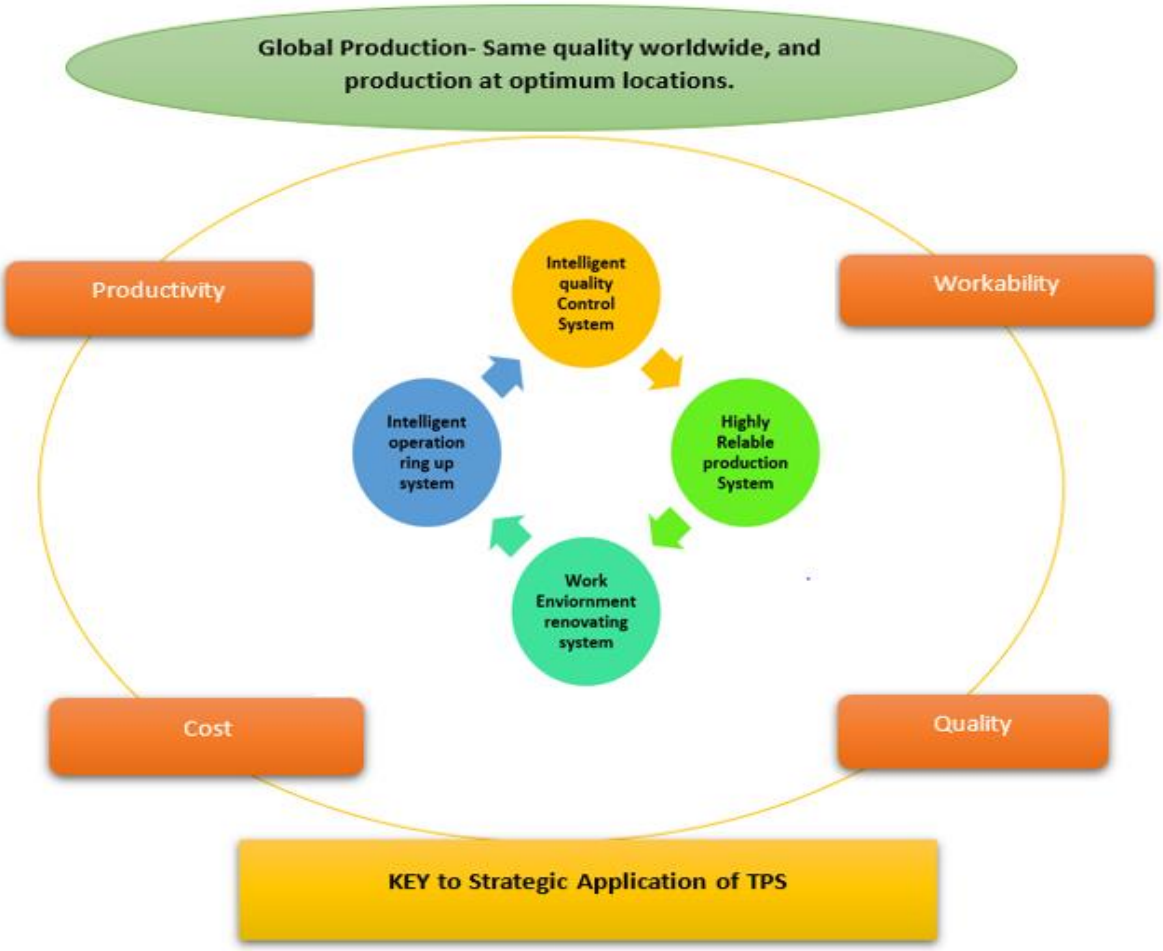


Figure 09: Toyota Production System

Source: Author's Own Source

3. **Plan-Do-Study-Act** (PDSA) was used by the majority of initiatives included in this analysis to implement initiatives gradually, while improving them as needed. The rapid-cycle aspect of PDSA began with piloting a single new process, followed by examining results and responding to what was learned by problem-solving and making adjustments, after which the next PDSA cycle would be initiated. The majority of quality improvement efforts using PDSA found greater success using a series of small and rapid cycles to achieve the goals for the intervention, because implementing the initiative gradually allowed the team to make changes early in the process and not get distracted or side tracked by every detail and too many unknowns. The ability of the team to successfully use the PDSA process was improved by providing instruction and training on the use of PDSA cycles, using feedback on the results of the baseline measurements, meeting regularly, and increasing the team's effectiveness by collaborating with others, including patients and families, to achieve a common goal. Conversely, some teams experienced difficulty in using rapid-cycle change, collecting data, and constructing run charts, and one team reported that applying simple rules in PDSA cycles may have been more successful in a complex system.

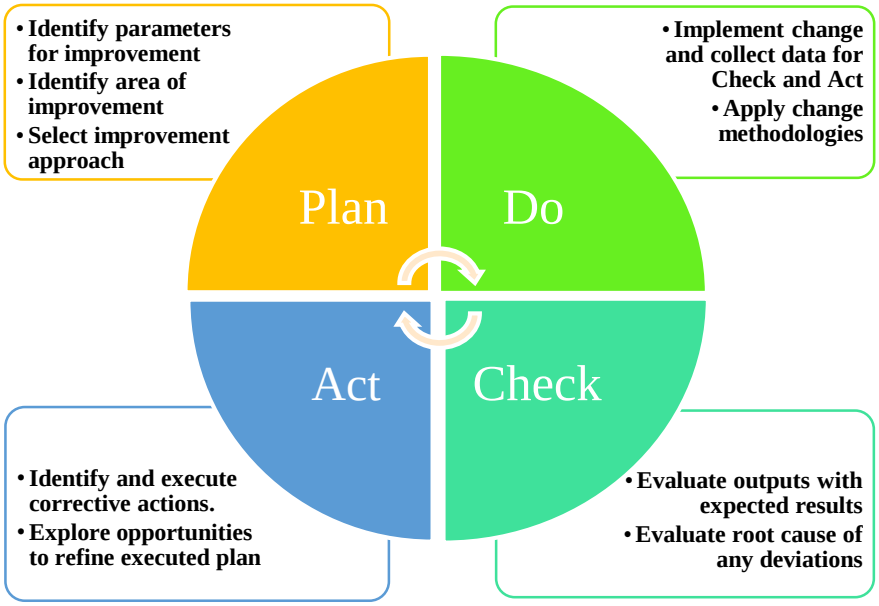


Figure 10- PDCA cycle

Source: Author's Own Source

4. **Hospital failure modes and effects analysis** (HFMEA)
   It is utilised to provide vague analysis of the small processes, which resulted to the specific suggestions and bring large processes together. HFMEA is known as proactive analytical tool in hospitals, which facilitate a thorough and in-depth analysis of the failure modes and predict the extreme events that will going to happen in future. HFMEA plays a major role in recognising the various ways for most of the errors and also find out the potential risk of those errors which is a very time taking process. By using HFMEA enable the team-work by providing step by step process and also reduce the group biases through the multidisciplinary levels in the hospitals.

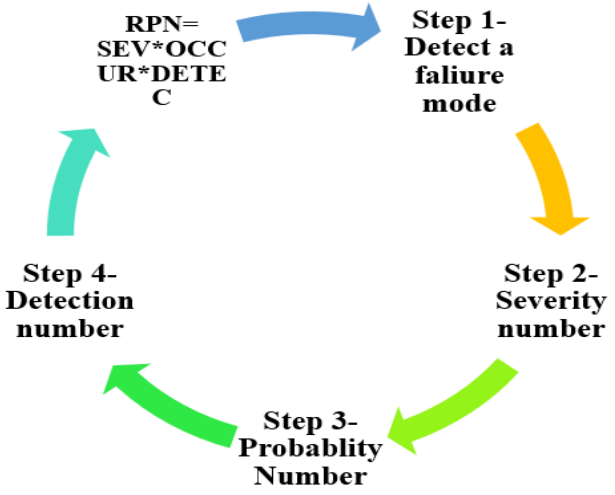


Figure 11: Hospital Failure modes and effects analysis

CHAPTER-7

Result

The findings of the project show that process improvement and quality management will results in significant improvement of the patient safety goals, this measure has a significant positive pre-process slope.

This project results in the improved process of patient safety with the help of standards, intents and measurable elements (MEs) of JCI QPS.

ANALYSIS AND INTERPRETATION:

According to the data collected from the Quality Healthcare professionals with the help of Questionnaire, a detailed analysis of quality Improvement and patient safety, made using MS Excel and corresponding interpretations build.

In this project analysis are total 14 factors are taken into consideration, 3 out of 14 questions are closed ended questions and 11 question are analysed with the help of 5 Likert scale range which is a ready reference available on the Wikipedia.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Source: Wikipedia

1. In the below analysis of Experience of Quality Healthcare Professionals in Quality Department gives the insight about the numbers of years they have worked in Quality healthcare Department.

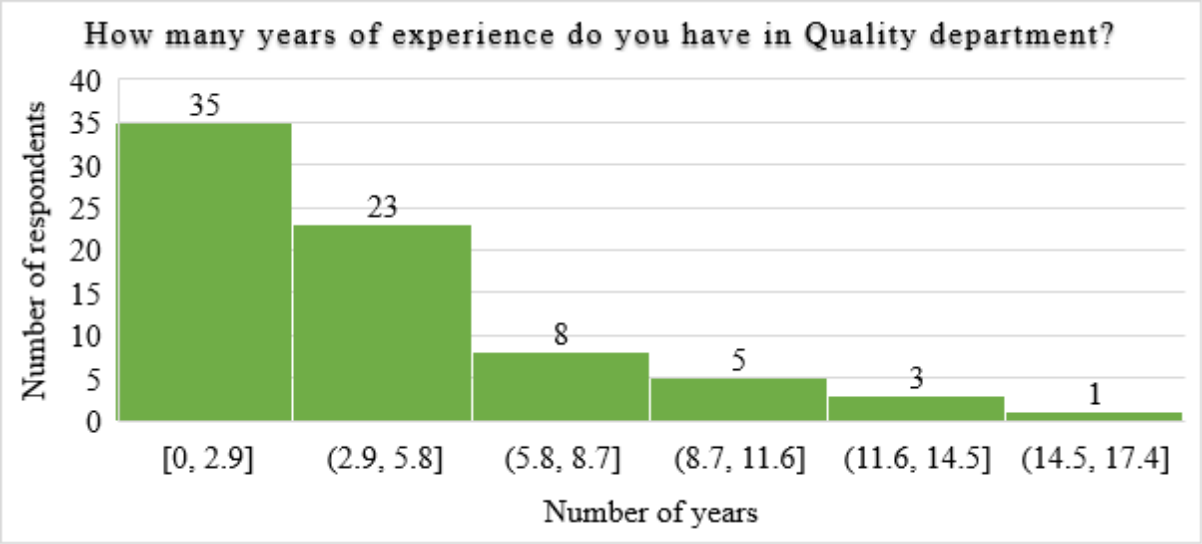


Figure 12 -Years of Experience in Quality Department

Years of Experience in Quality Department	**Number of Subjects (n)**	**Percentage**
0-3	35	46.6%
3-6	23	30.6%
6-9	8	10.6%
9-11.5	5	6.6%
11.5-14.5	3	4%
14.5-17.5	1	1.3%
Total	76	100%

Table 04- Years of Experience in Quality Department.

Interpretation

In the above histogram it is shown that:

Out of 76 respondents

- 35 Quality professionals are having about 0-3 years of experience,
- 23 have 3-6 years of Experience,
- 8 having 6-9 years of experience,
- 5 respondents are having experience more than 9 years and
- 4 respondents are having about 15 years of experience in Healthcare Quality Department.

Relevance: More the experience in the quality department better will be their suggestions and recommendations for process improvement in the QPS chapter of JCI new edition.

2.

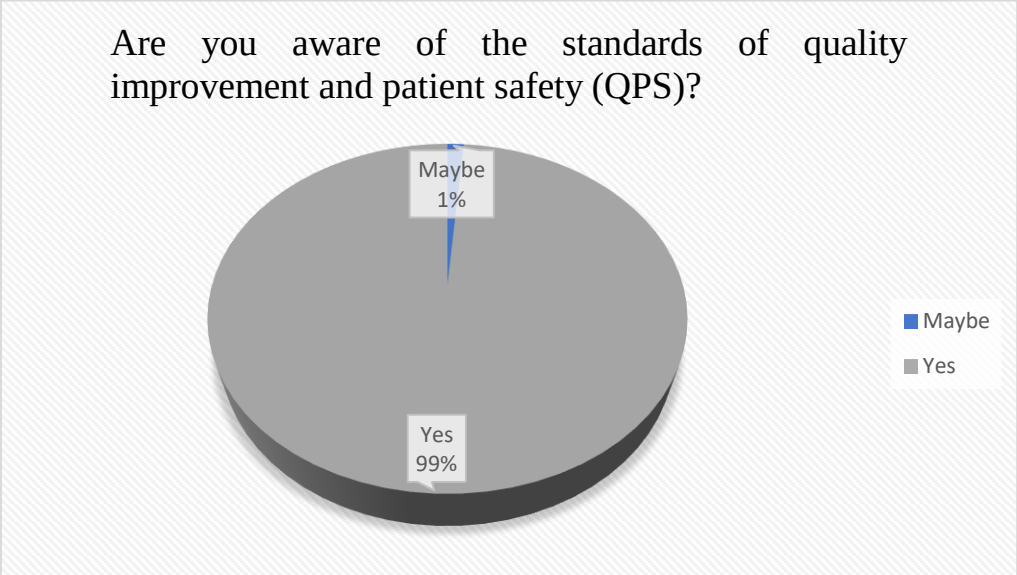


Figure 13- Awareness of the standards of Quality Improvement and Patient Safety (QPS) among the Quality Professionals.

Awareness of QPS among the Quality Professionals.	**Number of Subjects (n)**	**Percentage**
Yes	75	99%
No	0	0%
Maybe	1	1%
Total	**76**	**100%**

Table 05- Awareness of QPS among the Quality Professionals.

Interpretation

- 99% of the respondents are aware about the JCI standards of Quality Improvement and Patients Safety and,
- 1% are not sure about the JCI Standards of QPS.

Relevance: As per the data collected from Quality healthcare professionals it is clear that almost all the respondents are aware about the QPS standards of JCI and will ultimately helps to give the insight for the improvement in this particular chapter of JCI.

3.

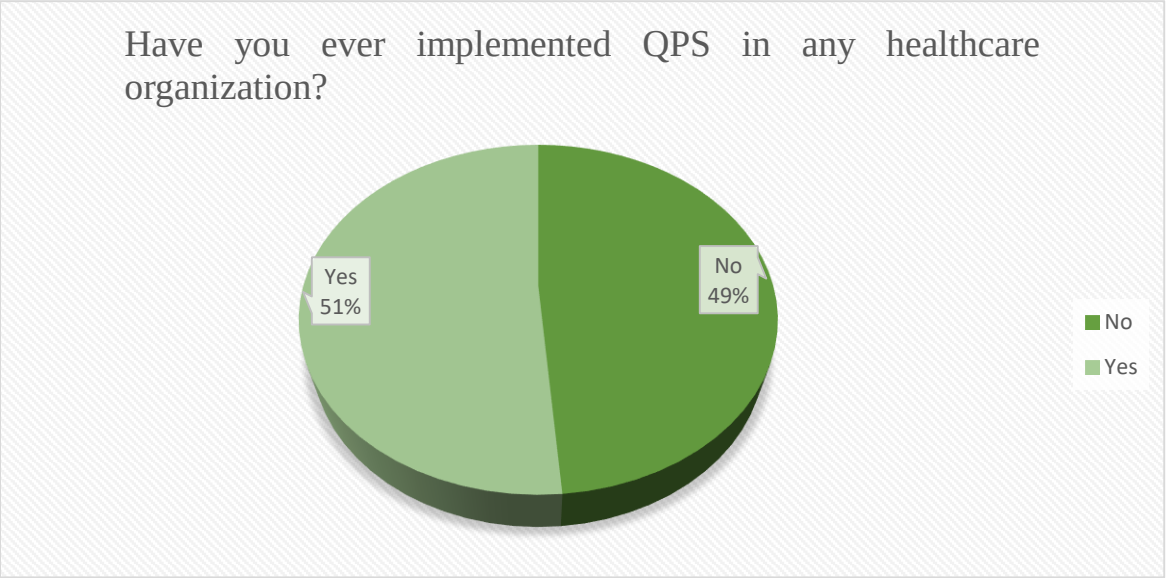


Figure 14- Implementation of QPS in any healthcare organization.

Have you Ever Implemented QPS in the healthcare organization. Closed ended Question (yes/No)	**Number of Subjects (n)**	**Percentage**
Yes	n = 39	51%
No	n = 37	49%

Table 06- Implementation of QPS in Healthcare Organisation

Interpretation

From above pie chart:

- 51% (39) quality professionals have implemented the QPS in their healthcare organisation.
- 49% (37) have never implemented QPS.

Relevance: Those who have ever implemented the QPS in their healthcare organisation, they better know the loopholes where we need to work upon

4.

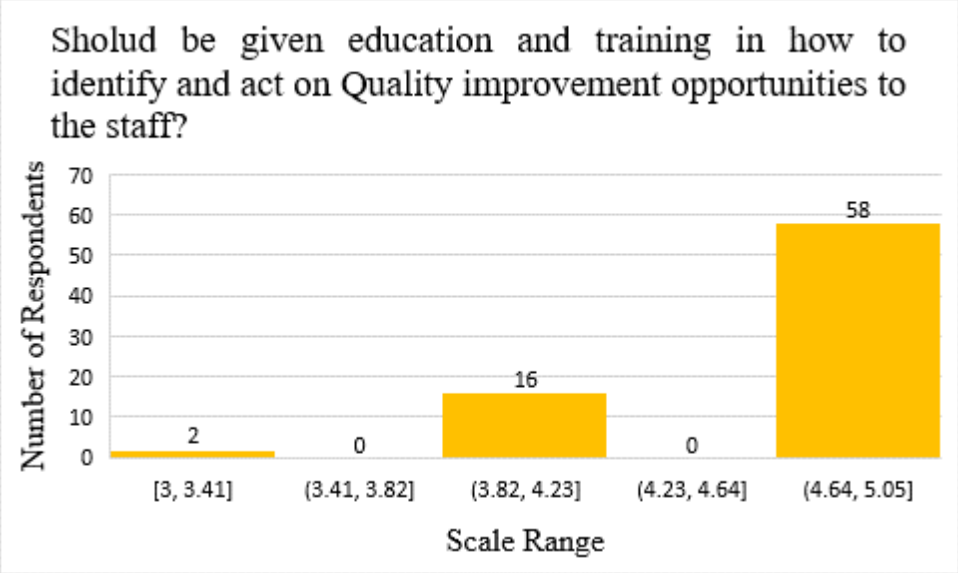


Figure 15- Should be given education and training in how to identify and act on Quality improvement opportunities to the staffs.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	2	2.6%
Agree	16	21%
Strongly Agree	58	76.3%

Table 07- Training and capacity building to the staffs

Interpretation

- 76.3% respondents are Strongly Agree,
- 21% respondent are agreed
- 2.6% respondent are neutral in the response of that training and education should be given to the staff to identify and act on Quality Improvement opportunities.

Relevance: Giving education and training to the staff helps to identify and act on the quality improvement opportunities, that will ultimately reduce the defects and increase the efficacy of the staffs.

5.

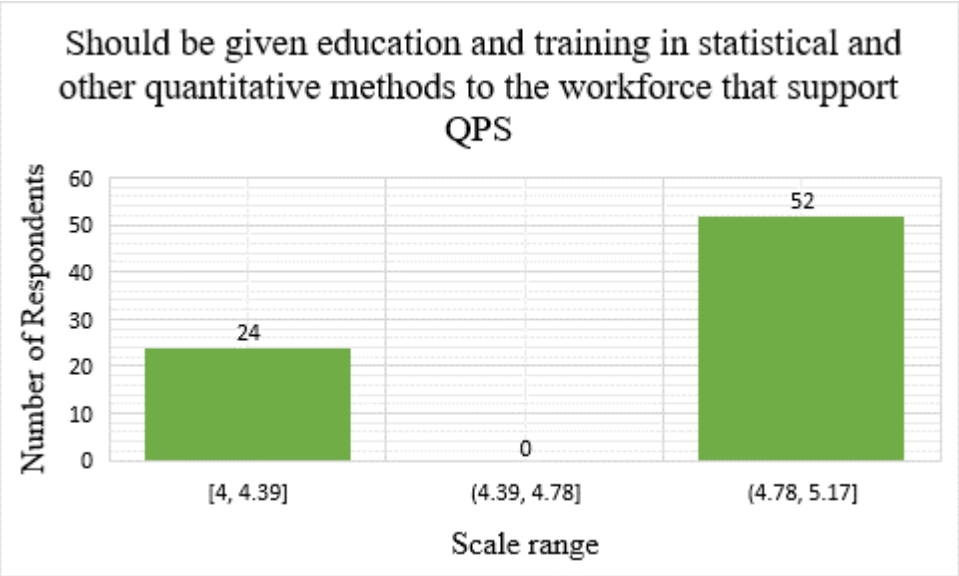


Figure 16- Should be given education and training in statistical and other quantitative methods to the workforce that support QPS

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	24	31.5%
Strongly Agree	52	68.4%

Table 08- Education, statistics & other methods to the staffs

Interpretation

- 68.4% respondents are strongly agreed.
- 31.5% healthcare professionals are agreed on that education and training in statistical and other quantitative methods should be given the workforce that support QPS.

Relevance: Giving education and training in statistical and other quantitative methods to the staff helps to identify and act on the quality improvement opportunities, that will ultimately reduce the defects and increase the efficacy of the staffs.

6.

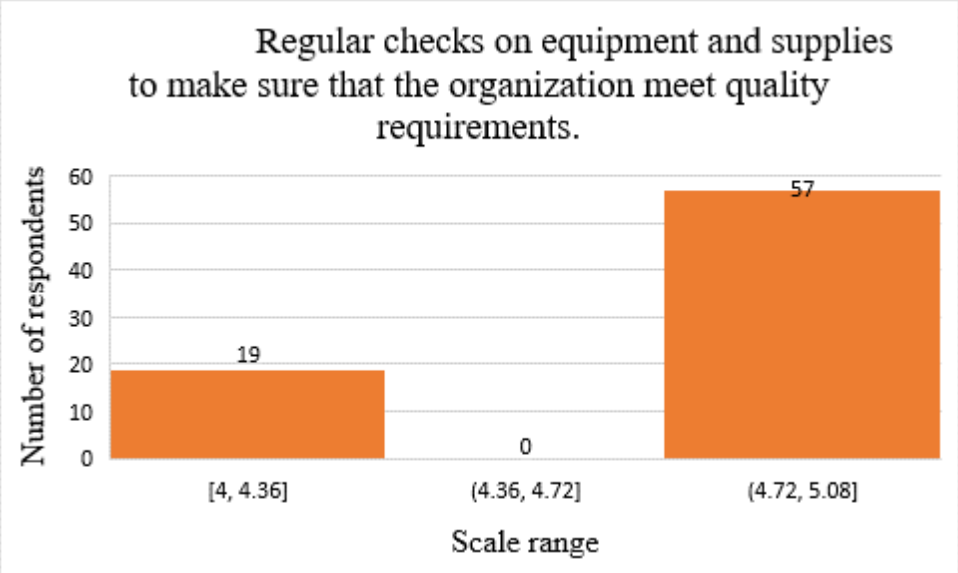


Figure 17- Regular checks on equipment and supplies to make sure that the organization meet quality requirements.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	19	25%
Strongly Agree	57	75%

Table 09- Regular check on Equipment and supplies.

Interpretation

- 75% healthcare professional are strongly agreed and,
- 25% are agree to keep a regular check on the equipment and supplies to make sure that the organisation meet the Quality requirements.

Relevance: Keep a regular check on the equipment and supplies to make sure that the organisation meets the quality requirements and that will further lead to improve the quality standards of the JCI's chapter QPS.

7.

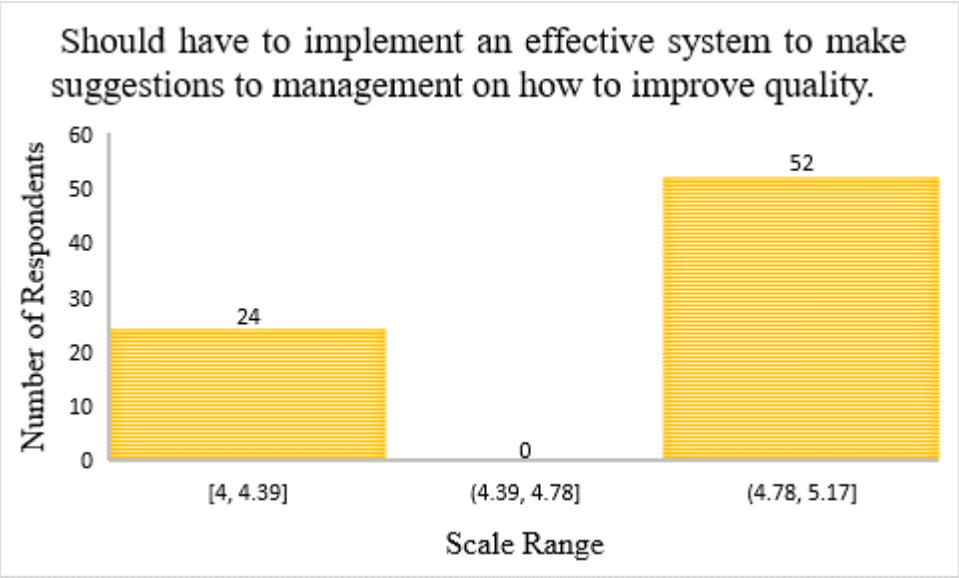


Figure 18- Should have to implement an effective system to make suggestions to management on how to improve quality.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	24	31.5%
Strongly Agree	52	68.4%

Table 10 – Implementation of effective system for suggestions to the management.

Interpretation

- Out of 76 responses 52 (68.4%) Quality healthcare Professionals are strongly agreed
- 24 (31.5%) respondent are agree that implementation of effective system to make suggestion to management helps to improve the quality.

Relevance: Implementation of effective system for the suggestions to the management helps to improve the team building in the organisation and reduce the conflicts that will ultimately enhance the quality work in the organisation.

8.

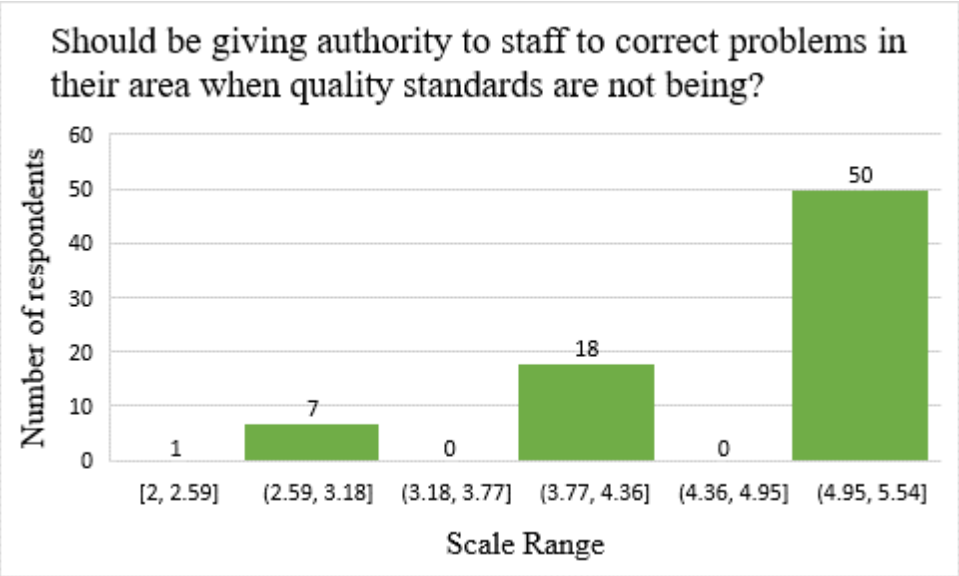


Figure 19- Should be giving authority to staff to correct problems in their area when quality standards are not being.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	1	1.3%
Neutral	7	9.2%
Agree	18	23.68%
Strongly Agree	50	65.7%

Table 11- Giving authority to the staffs.

Interpretation

- 65.7% respondent are strongly agreed, 23.68% are agreed,
- 9.2% are neutral and,
- 1.3% are disagree on the authority should be given to the staff to correct the problem in their area when quality standards are not meeting properly.

Relevance: Giving authority to staff to correct problems in their area when quality standards are not being, that will save time and enhance the productivity in the healthcare system and which will also increase the revenue of the organisation.

9.

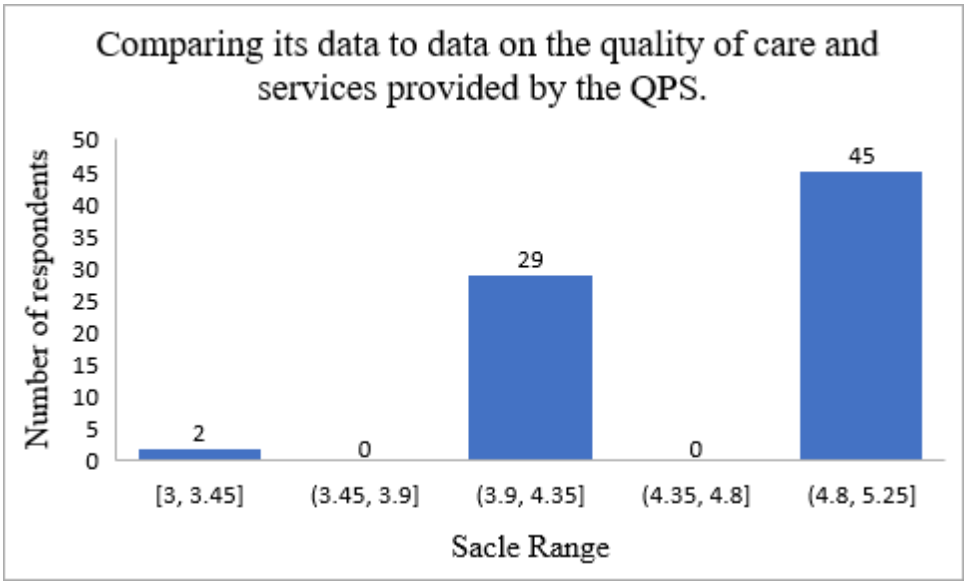


Figure 20 - Comparing its data to data on the quality of care and services provided by the QPS.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	2	2.6%
Agree	27	35.5%
Strongly Agree	47	61.8%

Table 12- Comparing its data to data on the quality of care and services provided by the QPS

Interpretation

- 47 (61.8%) quality healthcare professionals are strongly agreed,
- 27(35.5%) are agree and,
- 2(2.6%) have neutral responses on the comparing its data to data on the quality of care and services provided by the QPS**.**

Relevance: Comparing its data to data on the quality of care and services provided by the QPS, this helps to standardised the data as per the requirement of the patient care.

10.

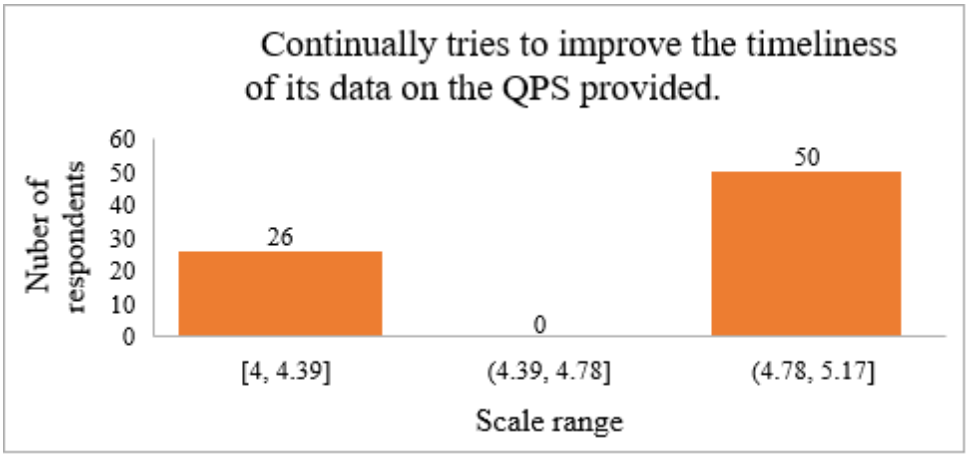


Figure 21- Continually tries to improve the timeliness of its data on the QPS provided.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	25	32.89%
Strongly Agree	51	67.10%

Table 13 - Continually tries to improve the timeliness of its data on the QPS provided.

Interpretation

- 67.1% quality healthcare professionals are strongly agreed and,
- 32.89% are agree that continually tries to improve the timeliness of its data on the QPS provided helps in quality improvement.

Relevance: Continually tries to improve the timeliness of its data on the QPS provided, will helps to revise the new edition of JCI.

11.

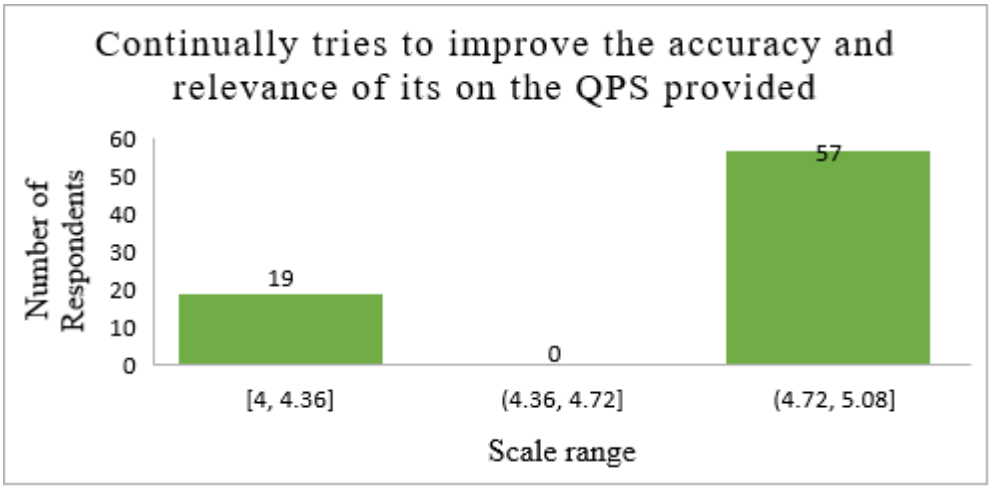


Figure 22- Continually tries to improve the accuracy and relevance of it's on the QPS provided.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	19	25%
Strongly Agree	57	75%

Table 14 - Continually tries to improve the accuracy and relevance of it's on the QPS provided.

Interpretation

- 75% quality healthcare professionals are strongly agreed and,
- 25% are agree that continually tries to improve the accuracy and relevance of it's on the QPS provided helps in quality improvement.

Relevance: Continually tries to improve the accuracy and relevance of it's on the QPS provided, that will help to improve the quality and also helps in process improvement of QPS standards.

12.

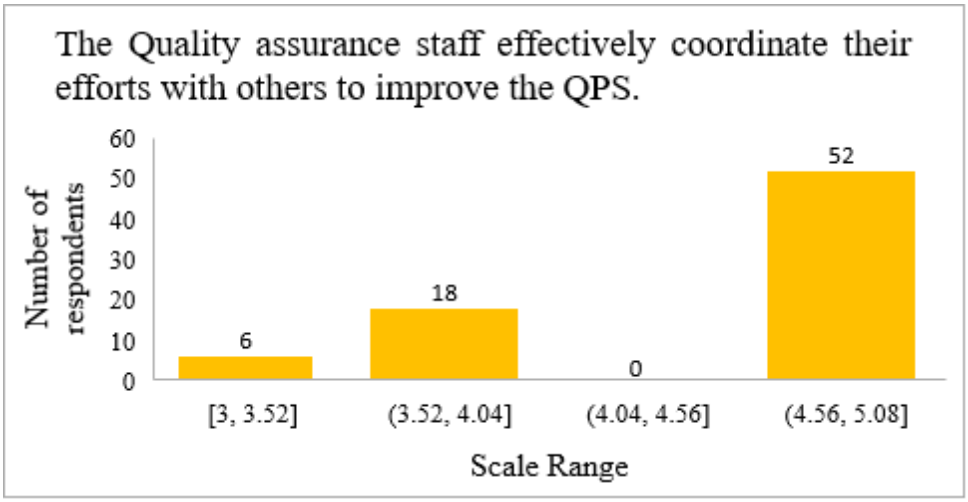


Figure 23- The Quality assurance staff effectively coordinate their efforts with others to improve the QPS.

Criteria (5 Likert scale range)	Number of Subjects (n)	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	5	6.57%
Agree	18	23.68%
Strongly Agree	53	69.73%

Table 15- The Quality assurance staff effectively coordinate their efforts with others to improve the QPS.

Interpretation

- 69.73% quality healthcare professionals are strongly agreed,
- 23.68% are agreed and
- 6.57% gave neutral response that the Quality assurance staff effectively coordinate their efforts with others to improve the QPS.

Relevance: Team building or effective coordination between the staff and their efforts with other employees in the organisation helps in Quality improvement and patient safety in the healthcare organisation.

13.

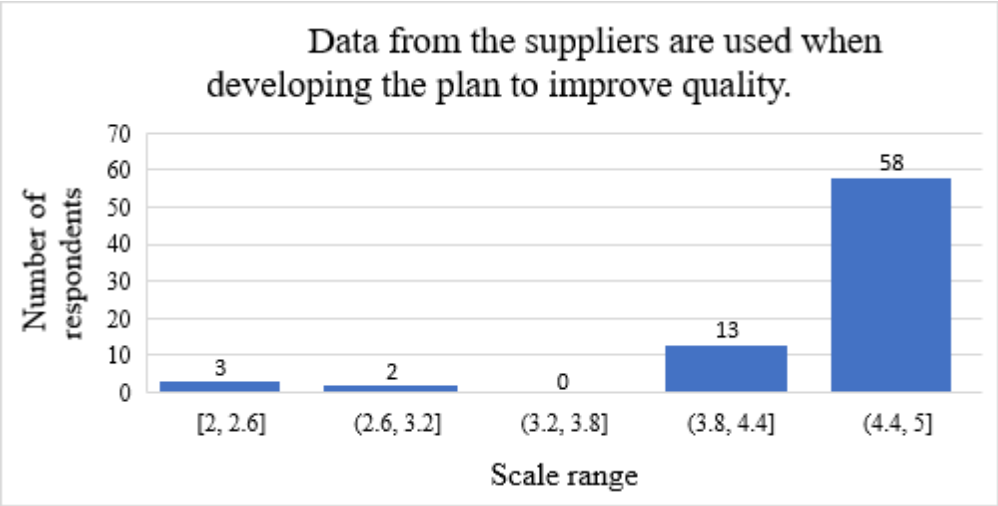


Figure 24- Data from the suppliers are used when developing the plan to improve quality.

Criteria (5 Likert scale range)	Frequency	Percentage
Strongly Disagree	0	0%
Disagree	3	3.94%
Neutral	2	2.6%
Agree	13	17.1%
Strongly Agree	58	76.3%

Table 16- Data from the suppliers are used when developing the plan to improve quality.

Interpretation

- 76.3% quality healthcare professionals are strongly agreed, 17.1% are agreed,
- 2.6%% gave neutral response and
- 3.94% are disagree that the data from the supplier are used when developing the plan to improve the Quality.

Relevance: Collection of external data from the suppliers are used when developing the plan to improve the quality, because external data from the external source give insight about the need and demand of the end user and that will ultimately help to give an idea about the improvement plans.

14.

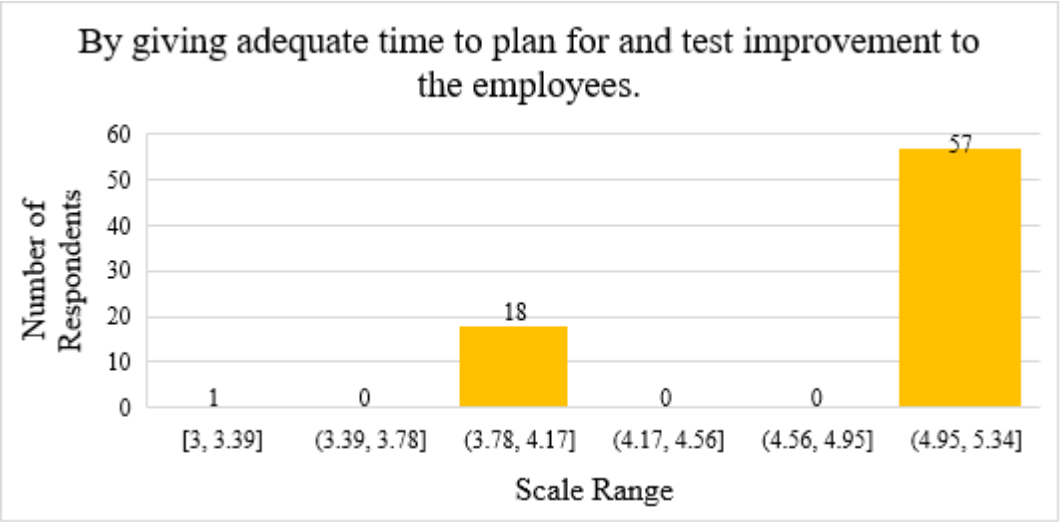


Figure 25- By giving adequate time for planning and testing the standardize process for improvement to the employees.

Criteria (5 Likert scale range)	Frequency	Percentage
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	0	0%
Agree	19	23.6%
Strongly Agree	58	76.3%

Table 17- By giving adequate time to plan for and test improvement to the employees.

Interpretation

- 76.3% Quality healthcare professionals Strongly agreed and
- 23.6% are agree by giving adequate time to plan for and test improvement to the employees helps in Quality Improvement.

Relevance: Giving adequate time to plan for and test improvement to the employees increase the accuracy and decrease the number of defects which will ultimately improve the end result of the process.

Summary of Analysis

Number of Respondents.			**76**		
Are you aware of the standards of Quality Improvement and Patient Safety (QPS)?			Yes **99%**	No **0%**	Maybe **1%**
Have you ever implemented QPS in any healthcare organization?			Yes **51%**	No **49%**	
5 Likert Scale Range	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Should be given education and training in how to identify and act on Quality improvement opportunities to the staff.	**0%**	**0%**	**2.6%**	**21%**	**76.3%**
Should be given education and training in statistical and other quantitative methods to the workforce that support QPS.	**0%**	**0%**	**0%**	**31.5%**	**68.4%**
Regular checks on equipment and supplies to make sure that the organization meet quality requirements.	**0%**	**0%**	**0%**	**25%**	**75%**
Should have to implement an effective system to make suggestions to management on how to improve quality.	**0%**	**0%**	**0%**	**31.5%**	**68.4%**
Should be giving authority to staff to correct problems in their area when quality standards are not being.	**0%**	**1.3%**	**9.2%**	**23.6%**	**65.7%**
Comparing its data to data on the quality of care and services provided by the QPS.	**0%**	**0%**	**2.6%**	**35.5%**	**61.8%**
Continually tries to improve the timeliness of its data on the QPS provided.	**0%**	**0%**	**0%**	**32.89%**	**67.1%**
Continually tries to improve the accuracy and relevance of it's on the QPS provided.	**0%**	**0%**	**0%**	**25%**	**75%**

The Quality assurance staff effectively coordinate their efforts with others to improve the QPS.	**0%**	**0%**	**6.57%**	**23.68%**	**69.73 %**
Data from the suppliers are used when developing the plan to improve quality.	**0%**	**3.94%**	**2.6%**	**17.1%**	**76.3%**
By giving adequate time to plan for and test improvement to the employees.	**0%**	**0%**	**0%**	**23.6%**	**76.3%**

Giving education and training to the staff helps to identify and act on the quality improvement opportunities that will ultimately reduce the defects and increase the efficacy of the staffs.

Keeping a regular check on the equipment and supplies to make sure that the organisation meets the quality requirements and that will further lead to improve the quality standards of the chapter QPS of JCI.

Implementation of effective system for the suggestions to the management helps to improve the team building in the organisation and reduce the conflicts that will ultimately enhance the quality work in the organisation.

Giving authority to staff to correct problems in their area when quality standards are not being, that will save time and enhance the productivity in the healthcare system and which will also increase the revenue of the organisation.

Comparing its data to data on the quality of care and services provided by the QPS, this helps to standardised the data as per the requirement of the patient care.

More the experience in the quality department better will be their suggestions and recommendations for process improvement in the QPS chapter of JCI new edition

CHAPTER-8

SIGNIFICANCE OF THE STUDY

Quality Improvement and Patient Safety (QPS) is the absence of restrain-able harms to a patient during the process of health care. Reduction of the risk of redundant harms associated with the health care to an admissible minimum.

As per the data given by World Health Organisation (WHO) up to 4 out of 10 of patient are vulnerable and risk prone in primary and ambulatory care settings and about 134 million adverse events occur each year in hospitals.

All the aspects of Quality and Improvement of patient safety such as clear policies, organisational leadership capacity, data to drive safety improvements, skilled health care professionals and effective involvement of patients in their care, and all need to ensure sustainable and significant improvement in the safety of health care.

CHALLENGES OF THE STUDY

- In any hospital or healthcare industry, the prime importance is given to the revenue generation aspects and the volume of the patients whereas, quality improvement programs are side line, which leads to lesser attention to the quality department.

- In the implementation of patient safety and quality tools, documentation is the main problem.

CHAPTER-9

LIMITATION OF THE STUDY

- This study is pertained to JCI Quality norms. It is not covering the other quality standards like NABH, NABL and ISO.

- Implementation of the culture of quality within the organisation.

- This study is exclusively for quality, it is not considering the other aspects such as operations, training and development, research modalities or any other business related aspects.

APPLICATIONS

- It gives suggestion and recommendations which helps to design the new edition of JCI with revised QPS Standards and corporate quality programs for the well-being of the end users in the healthcare Industry.
- Understanding the benefits of Quality tools helps to design and implement new quality improvement programs in the hospital that will help to achieved the JCI accreditation to the hospitals
- It helps to understand globally what steps are taken to improve the Quality Indicators.

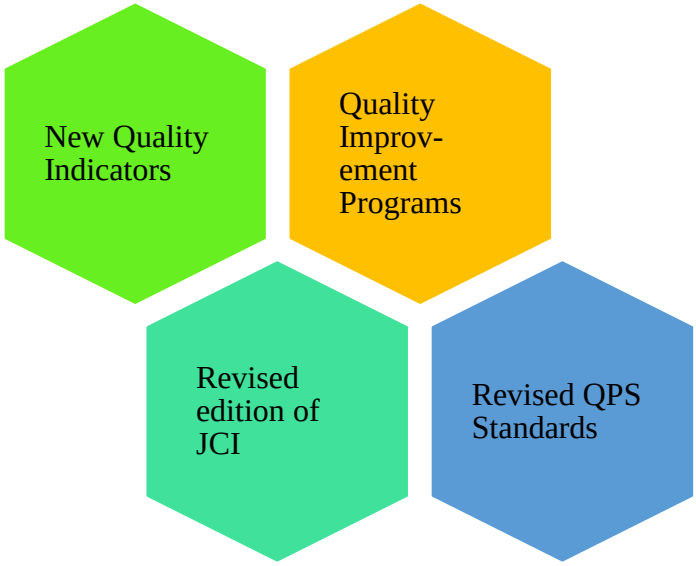


Figure 26: Applications

Source: Author's own Source

CHAPTER-10

CONCLUSION

The Implementation and actualization of Joint Commission International (JCI) Quality Improvement and Patient Safety (QPS) standards, intents and Measurable Elements (MEs) improve the process and also the patient safety goals.

- Helps to understand and analyse critically International Patient Safety Goals (IPSG) Standards in JCI Accreditation.
- Give insight how to achieve the Quality Improvement and Patient Safety (QPS) with the help of Standards, Intents and Measurable elements (MEs) of Joint Commission International Accreditation.

- Helps to promote specific quality improvements norms in patient safety.

The process improvement and patient safety goals require certain infrastructures in the hospitals which are as follows:

- Better knowledge on the part of managers regarding the principles and tools of quality improvement,
- Training personnel about the standards,
- Implementation of models of quality management and organizational excellence,

To achieve the patient safety goals and process improvisation with Joint Commission International (JCI) Quality Improvement and Patient Safety (QPS).

RECOMMENDATIONS

- Creating awareness among the hospital personnel to lead the Quality Improvement In the healthcare industry.
- Quality directly affect the cost containment the JCI guidelines to achieve the patient safety goals.
- Imparting knowledge, attitude and practices in regarding to the Quality tools.
- Execution of quality tools and quality Improvement programs.
- Clinical process mapping is a tool, which is strongly recommended to know each loophole in the workflow and with the help of which we can easily access our directives.
- The process of quality improvement will try to achieve the following parameters in the hospitals
  - ✓ Develop greater leadership support for an organization-wide program
  - ✓ Training and capacity building involve more staff
  - ✓ Set clearer priorities for what to measure
  - ✓ Base decisions on measurement data; and
  - ✓ Make improvements based on comparison to other organizations, nationally and internationally.

SCOPE FOR FURTHER STUDIES

- The main focus of this project was to give suggestions and recommendations to design the QPS for new edition of JCI manual.
- This will improve the process of QPS improvement and its implementations in the healthcare sector.
- It will ultimately help to reduce the defects and increase the efficacy in the organisation.

- This project is limited to the JCI Chapter and its standards, intents and Measurable Intents (MEs).
- This project can be used to improve the process for quality department in all the existing healthcare organisation along with other Quality standards of NABH, NABL and ISO.

ABBREVATIONS

1	QPS	Quality Improvement and Patient Safety
2	JCI	Joint Commission International
3	WHO	World Health Organization
4	IOM	Institute of Medicine
5	DH	Department of Health
6	IPSG	International Patient Safety Goals
7	MEs	Measurable Elements
8	PDCA	Plan, Do, Check, Act
9	AHRQ	Agency for Healthcare Research and Quality
10	TQM	Total Quality Management
11	CQI	Continuous Quality Improvement
12	CPI	Clinical Practice Improvement
13	IOS	International Organization for Standardization
14	FMEA	Failure modes and effects analysis
15	HFMEA	Hospital Failure modes and effects analysis
16	RCA	Root cause Analysis
17	PDSA	Plan-Do-Study-Act
18	QA	Quality Assurance
19	TPS	Toyota Production System
20	US &UK	United States and the United Kingdom’s

CHAPTER- 11

Annexure I

Questionnaire

Name					
Email					
Name of organisation					
How many years of experience do you have in Quality?					
Are you aware of the standards of Quality Improvement and Patient Safety (QPS)?			Yes	No	Maybe
Have you ever implemented QPS in any healthcare organization?			Yes	No	
Should be given education and training in how to identify and act on Quality improvement opportunities to the staff.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Should be given education and training in statistical and other quantitative methods to the workforce that support QPS.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Regular checks on equipment and supplies to make sure that the organization meet quality requirements.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Should have to implement an effective system to make suggestions to management on how to improve quality.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Should be giving authority to staff to correct problems in their area when quality standards are not being.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Comparing its data to data on the quality of care and services provided by the QPS.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Continually tries to improve the timeliness of its data on the QPS provided.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Continually tries to improve the accuracy and relevance of it's on the QPS provided.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The Quality assurance staff effectively coordinate their efforts with others to improve the QPS.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Data from the suppliers are used when developing the plan to improve quality.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
By giving adequate time to plan for and test improvement to the employees.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Annexure II

List of Quality Tools

Sl. No	Quality Tools
1	A3 Report
2	Affinity Diagram
3	Arrow diagram
4	Balanced Scorecard

5	Benchmarking
6	Box and Whisker plot
7	Brainstorming
8	Cause & effect diagram/ Ishikawa/ fishbone Diagram
9	Check Sheet
10	Control Chart
11	Data collection and analysis tools
12	Decision Matrix
13	Design of experiment
14	Evaluation and Decision-making tools
15	FMEA
16	Five S
17	Flowchart
18	Gantt Chart
19	Gage Repeatability & Reproducibility
20	Histogram
21	House of Quality (HOQ)
22	Impact effort matrix
23	Interrelationship Diagram
24	Kano Model

25	Matrix Diagram
26	Nominal Group Technique
27	Pareto Chart
28	PDCA
29	Process Analysis tools
30	Quality Function Deployment
31	Quality Plans
32	Relations Diagram
33	Scatter Diagram
34	Seven Basic Quality Tools
35	X-Y graph
36	Project planning and Implementation
37	Process Decision Program Chart
38	Five Why and Five How model
39	Force and Analysis
40	Eight Disciplines
41	Critical Incident
42	Nine Windows
43	Mistake Proofing
44	Multi-voting

45	SIPOC
46	SMART matrix
47	Survey
48	Tree Diagram
49	Value Stream Mapping
50	Voice of Customer table

Annexure III

Name	How mar	1.	Ar	2.Have y	A.1Shoul	A.2 Shou	A.3Regul	A.4 Shou
Deepak singh	1	Yes		No	4	4	4	5
Jyoti	0	Yes		Yes	5	5	5	5
Harshali	3 yrs	Yes		Yes	5	5	5	5
Sachin	1	Yes		Yes	5	5	5	5
Sachin yaduwanshi	1	Yes		Yes	5	5	5	5
Akash Chaudhary	5	Yes		Yes	5	5	5	5
Dr Akarsh Chaudhary	5	Yes		Yes	5	5	5	5
tushar sawant	1	Yes		No	4	4	5	5
Sashi Sharma	1	Yes		Yes	5	5	5	5
Dr. Roopashree	12	Yes		Yes	5	5	5	5
Pooja kajrolkar	0	Yes		No	5	5	5	4

CHAPTER-12

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