

Evaluation of Quality Standards through NQAS (National Quality Assurance Standards) Implementation at a Community Health Center, Budgam Jammu and Kashmir

Dr. Ermeen Khurshied Wani¹, Dr. Suhail Mansoor², Dr. Malik Roohi Iqbal³ CHC Nagam

¹MD SPM

²MD Medicine

Corresponding Author Email: [suhailmansoor760\[at\]gmail.com](mailto:suhailmansoor760[at]gmail.com)

³BMO Nagam

Abstract: ***Background:** The study aims to evaluate the improvements in quality standards of working at a community health centre through implementation of NQAS, so that insights from the data can be taken in determining further policy making and amendments in NQAS (National Quality Assurance Standards). **Methodology:** This study is an observational study which was conducted at community health centre Nagam, Jammu and Kashmir for a period of six months from May 2023 to November 2023. Our sample size N= 70 included both doctors and paramedics of all sections. Data was collected from all 12 sections of the hospital from registers and digital data was taken from head office. Statistical analysis was done using SPSS version, using questionnaire from NQAS guidelines. **Results:** The data was analyzed in terms of knowledge, attitude and practices of health staff in pre and post application of NQAS standards. There was a significant improvement in knowledge, attitude and practices of healthcare employees post NQAS. our sample size was 70, including 50 paramedics and 20 doctors (N=70). Results show significant ($p = 0.002217/0.00001$) association of knowledge implementation through NQAS in table 1. Significant ($p=0.00001$, table 2) change in attitude in employees through NQAS. Significant ($p=0.00027$ table 3) changes in practice through NQAS implementation. Statistical analysis of outcome indicators (table 4) and quality management tools shows an important and significant correlation of improving hospital quality standards through NQAS. **Conclusion:** The study concluded that NQAS implementation showed a significant improvement in knowledge, attitude and practices of healthcare employees. It also pointed towards the need of implementing it in all health facilities of India.*

Keywords: NQAS (National Quality Assurance Standards), Quality.

Objective of the study:

- 1) To assess impact of applying quality standards in a peripheral health setup.
- 2) As a comparative study for assessment of different quality standards.

1. Introduction

The National Quality Assurance Standards (NQAS) program was launched by Government of India in 2013 with an aim to improve the Quality of Care in Public Health Facilities of India. These standards for District Hospitals, Community Health Centers, Primary Health Centers and Urban Primary Health Centers have been developed over the years. In the year 2020, the standards for Ayushman Bharat Health and Wellness Centers, Sub Centers have also been developed, to ensure the quality of promotive, preventive and primary health care services; early screening and identification; timely referrals and regular follow ups. The NQAS continue to meet the global benchmark and have once again been awarded with accreditation under the International Society for Quality in Healthcare (ISQua) till August' 2024.; An impact assessment study of NQAS certification was done by Population Research Centre, Dharwad, Karnataka in three (03) States of India i. e. Chhattisgarh, Karnataka and Maharashtra¹. Study results indicate various advantages of NQAS accreditation of Public Health Facilities. Study

respondents perceived NQAS accreditation as a good tool for improving the quality of healthcare. It was also observed that, in order to make accreditation an effective regulatory instrument, there is a need to assess quality based on patient outcome indicators. As on 31st December 2020, a total of 700 public health facilities are certified under the NQAS.

Public Health System in India has been organised at three levels, namely primary, secondary and tertiary. While Primary Health Care is being provided at PHCs and Sub centers, the secondary health care is being provided at Community Health Centres (CHCs) and other higher level facilities such as Sub - District Hospitals (SDH) and District Hospitals (DH). The CHCs are expected to function as First Referral Unit (FRU), thereby providing referral linkage to the Primary Health Centres and Sub centres. A FRU should have facilities for Emergency Obstetric Care including facilities for LSCS and Anesthesia, Blood Storage Unit and NBSU. Indian Public Health Standards (IPHS) guidelines divide services at CHC into two categories, Essential and Desirable. A CHC is expected to have 30 - beds and provide specialist care in Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Dental and AYUSH. Providing an equitable, accessible and affordable primary healthcare, which is of an assured quality, would be a mandatory pre-requisite before the dream of 'Health for All' can be realized.

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Past experiences have shown that an in - built system of quality assurance addresses not only such requirements, but is sustainable as well. Therefore, an in - house quality management system needs to be built into the design of each facility, which will regularly measure its quality, take corrective active and promote the quality of care culture. Incentivisation of the quality initiative may be planned. .

Following is the brief outline of Areas of Concerns, under which Quality standards for Primary Health Centre are presented in this manual –

- a) **Service Provision** – This area of concern has six standards, which measures availability of the Curative, RMNCH+A, Diagnostics services, and also the services under National Health Programs.
- b) **Patients' Rights** – This area of concern also has five standards. These standards measures different aspects of patients' rights i. e. Availability of information, Physical access, Ensuring Privacy and Confidentiality, Availability of mandated free services, and provision of incentive schemes at CHCs.
- c) **Inputs** - This area of concern has five standards, which measure Availability of required infrastructure, Physical safety, Skilled human resources, Drugs, Consumables, Equipment and Instruments.
- d) **Support services** – There are total of ten standards in this area of concern. These standards are related with processes required for equipment maintenance, inventory management, and auxiliary services such as laundry, diet, housekeeping and power backup. This area of concern also contains standards for Financial Management, Community Monitoring, and Human Resource Management.
- e) **Clinical services** – This area of concern has 22 standards that measure quality of clinical services at a CHC. This includes standards on the consultation, admission, assessment and reassessment, continuity of care, nursing care, medication safety, High risk and vulnerable patients, usage of standard treatment guidelines (STGs), safe drug administration, emergency services, laboratory services, medical records and discharge process. Last six standards under the area of concern pertains to those clinical processes related to antenatal care, intranasal care, post - natal care, new - born care, child health, adolescent health, family planning and clinical services, and the National Health Programs.
- f) **Infection Control** - There are six standards pertaining to infection control program, hand - washing facilities, personal protection, instrument processing, environment control and Biomedical waste management under this area of concern.
- g) **Quality Management** – This area of concern encompasses four standards related to Quality team, Internal and external quality assurance, Patient satisfaction survey and Standard Operating Procedures.
- H. Outcome** – This area of concern has four standards related with measuring performance of CHC in terms of productivity, efficiency, clinical care and service quality,

Departmental Checklists:

There are twelve checklists, namely –Accident and Emergency, Outpatient Department, Labor Room, Inpatient

Department, Operation Theatre, Pharmacy, Laboratory, Radiology, Blood Storage, NBSU, and General Administration and Auxiliary Services, which are given in this publication. Brief description of each check - list is given below:

- 1) **Accident and Emergency** – This checklist is applicable to Accident and Emergency department of a CHC. The checklist has been designed to assess all aspects of dedicated emergency services, which a CHC should provide. If emergency department is shared with OPD, then both the checklists are required to be used independently.
- 2) **Outdoor Department** – This checklist is applicable to outdoor department of a CHC. It includes OPD services, ICTC, ANC clinics, Family planning and Support areas like immunization room, dressing room, and waiting area. Similarly dispensary has been included in the Pharmacy check list. It may be possible that OPD services are dispersed geographically, for example ANC Clinic and Immunization clinic may not be located in the main OPD complex. However, all such facilities should be visited and assessed as a part of assessment of OPD.
- 3) **Labor Room** - This checklist is applicable to the labor room and its auxiliary area like nursing station, waiting area and recovery area. It also includes septic labor room (if available).
- 4) **Inpatient Department** – This is a common checklist for indoors wards including male and female wards. As facilities of indoor wards are shared by all the departments in the CHC, IPD requirements of Medicine, Gynecology and Obstetrics, Pediatrics, and Surgery have been included in the same Checklist.
- 5) **Newborn Stabilization Unit** - This checklist is applicable to a functional Level NBSU, located at the CHC.
- 6) **Operation Theatre** - This checklist is applicable for OT in the CHC. As TSSU is collocated with OT, are also included in the Checklist.
- 7) **Laboratory** - This checklist is meant for main clinical laboratory of a CHC, which would include routine biochemistry, hematology, serology, etc. Essential tests for OPD and IPD patients including ANC and National Health Programs are covered under this checklist
- 8) **Radiology** - This checklist covers X - Ray and Ultrasound facility available in the CHC.
- 9) **Pharmacy and Stores** - This checklist is applicable to Drug store, Cold Chain storage and Drug dispensing counter.
- 10) **Blood Storage** - The checklist is meant for Blood storage facility in the facility. Although some component of parent blood bank e. g. valid registration is included in the checklist, this checklist is not applicable to Blood Bank.
- 11) **General Administration** - The checklist covers checkpoints related to general administration of CHC. It

would essentially cover policy level issues, and cross-cutting processes, which are followed at a CHC. This checklist is complimentary to other ten checklists. Assessment Protocols and scoring methodology for this system will be same as Quality Assurance Standards for District Hospitals.

12) **Auxiliary Services** - This checklist covers Laundry, Kitchen, and Medical records. As per 'Operational Guidelines for Quality Assurance in Public Health Facilities 2013'; four level of assessments (Facility, District, State and National level) have been defined to be undertaken, in order to sustain the quality and to ensure the continual improvement. Quality Certification of the health facilities is the outcome of the periodic monitoring and evaluation under the National Quality Assurance Program; which has shown an exponential growth over the past five years. The Quality Improvement Division, The National Health Systems Resource Centre, New Delhi (QIQuality Improvement, NHSRC) and the Regional Resource Centre for North Eastern States, Guwahati (RRC - NE)), the technical support unit for National Health Mission under Ministry of Health and Family Welfare, Government of India are persistently rendering the technical support to the States and Union Territories in terms of capacity building and training; strengthening the human resources for program implementation, analyzing the identified gaps, developing the time bound action plans for closing the gaps, applying quality tools, measuring and evaluating the key performance indicators to improve the health outcomes etc. This mechanism provides an opportunity of cyclical and continuous quality assessments which has proven to be an incremental process for improvement. Globally, a growing number of countries, both developed and developing, are adopting a system of healthcare assessment to get hospital accreditation (Greenfield and Braithwaite, 2008) ². The accreditation is based on a systematic assessment of health care facilities against accepted predetermined standards by an authorized body, either government or nongovernment. Though, accreditation is mainly dealt with quality management, but its effect on improving service is debatable. It is being argued that accreditation standards helps to improve quality in health care and strengthen patient safety (The Joint Commission, 2016; Nicklin, 2015³ Institute for Kvalitet og Akkreditering I, 2009) ⁴; and they are designed to encourage continuous quality improvement efforts within the accredited institute (Rooney and vanOstenberg, 1999).

2. Methodology

This study is an observational study conducted at community health centre Nagam, Jammu and Kashmir since May 2023. Data was taken from all twelve areas from May 2023 to November 2023 before and after NQAS implementation. Our sample size N= 70 included both doctors and paramedics of all sections. Data analysis was done from record registers in respective sections and digital section of block medical officer. Analysis was done using (spss_29, 2022).

3. Results

Knowledge: Standard operating procedures along with local operating procedures were created in all twelve sections of CHC.

Employees were taught about the need of working as per national standards.

Role specific responsibility was assigned in every department.

Team approach management was taught to employees.

Disaster management plan was established for hospital.

Infection control committee was framed.

Construction of layout plan was designed.

Registration section was digitalized.

Accident and emergency triaging was updated.

Unidirectional flow as per protocol was established in gynecology department. .

Auxillary and Medical Records Department was updated.

Proper segregation of hospital waste was updated through implementation of recent biomedical waste management guidelines, including color coded bins, disposal pits, proper treatment of effluent in laboratory, operation theatre and labor room was established.

Color coded directional signs were placed in all sections along with work instructions.

Table 1 depicting significant (p =0.002217/0.00001) association of knowledge implementation through NQAS.

Table 2 showing significant (p=0.00001) change in attitude in employees through NQAS.

Table 3 showing significant (p=0.00027) changes in practice through NQAS implementation.

Attitude: Pre and Post NQAS implementation attitude towards work was assessed through questionnaires.

PSS Our patient satisfaction score and employment satisfaction score showed significant improvements. PSS improved from 3 to 4 over a period of six months, ESS improved from 50% to 70%.

Table 1: Table depicting significant (p =0.002217/0.00001) association of knowledge implementation through NQAS.

Knowledge (BMW)		Doctors		Paramedical Staff		P value
		Pre	Post	Pre	Post	
Biomedical waste generation	Yes	19	19	40	48	0.002217
	No	1	1	10	2	
Knowledge on color coding	Yes	17	19	25	45	0.002217
	No	3	1	25	5	
Hazards of wrong disposal of waste	Yes	15	19	15	38	0.002217
	No	5	1	25	12	
Need for puncture proof boxes	Yes	12	18	34	40	0.00001
	No	8	2	16	10	
Disposal of Biomedical waste (process)	Yes	8	15	10	35	0.00001
	No	12	5	40	15	

Attitude:

Table 2: table 2 showing significant (p=0.00001) change in attitude in employees through NQAS.

Attitude		Doctors		Paramedics		P value
		Pre	Post	Pre	Post	
Should bins be colour coded	Yes	15	19	23	45	0.00001
	No	5	1	27	5	
Is there a need for training on BMW	Yes	14	19	15	40	0.00001
	No	6	1	35	10	
Should waste be segregated and disposed	Yes	18	18	14	35	
	No	2	2	36	15	
Is colour coding easy to follow	Yes	19	19	45	48	
	No	1	1	5	2	
Should safety measures be taken while handling waste	Yes	17	19	22	40	
	No	3	1	28	10	

Practice:

Table 3: Table 3 showing significant (p=0.00027) changes in practice through NQAS implementation.

Practice		Doctors		Paramedics		P value
		Pre	Post	Pre	Post	
Using PPE while handling BMW	Yes	12	19	34	48	0.00027
	No	8	1	16	2	
Puncture proof boxes for needles	yes	13	19	30	40	0.01
	No	7	1	20	10	
Treatment of waste before segregation	No	7	1	20	10	
Maintaining of records	Yes	15	19	25	45	
Segregation of wastes	No	5	1	25	5	

Outcome indicators:

Indicators		May	June	July	Aug
A&E	Response time for initial assessment (minutes)	3.5	3.5	3	2.5
	Average turn around time (minutes)	40	42	35	32
OPD	Waiting time (minutes)	30	25	20	22
	PSS	3.2	3	3.6	3.5
Labor Room	Rational oxytocin usage	5.3	5	5.3	5.2
	PSS	3.4	3.7	3.5	3.6
IPD	Bed occupancy rate	22	25	21	25
	Referral Rate	0	1	0	0
	Time taken for initial assessment (mins)	2	4.2	3.1	5
	PSS	3.4	3.5	3.7	3.65
NBSU	Waiting time for new born assessment (mins)	5	4.2	2	2
OT	C - section rate	52%	64%	48%	60%
	Surgical site infection rate	0	0	0	0
Lab	Turn around time for routine lab inv (mins)	45	42	30	28
	Emergency lab inv (mins)	12	10	12	8
Radiology	Average waiting time Xray (mins)	5	4	4	3.5
General Administration	Staff satisfaction score	3.3	3.56	3.7	3.9
	Overall referral rate	7	5	4	4
Pharmacy	Waiting time for pharmacy counter (mins)	12	8	9	6
	Percentage of expired drugs during the month.	1	1	0	0

Quality Management: For quality management we used following seven basic tools of quality management.

- 1) 5S lean;** 5S is a lean method for workplace organization; it is an abbreviation representing five Japanese words that can be translated as sort, set in order, shine, standardize, and sustain. The 5S management method has been recognized recently as a potential solution for improving the quality of government healthcare services in low - and middle - income countries.
- 2) FISH bone;** Ishikawa diagrams (also called fishbone diagrams, herringbone diagrams, cause - and - effect

diagrams) are causal diagrams created by Kaoru Ishikawa that show the potential causes of a specific event.

Common uses of the Ishikawa diagram are product design and quality defect prevention to identify potential factors causing an overall effect. Each cause or reason for imperfection is a source of variation. Causes are usually grouped into major categories to identify and classify these sources of variation.

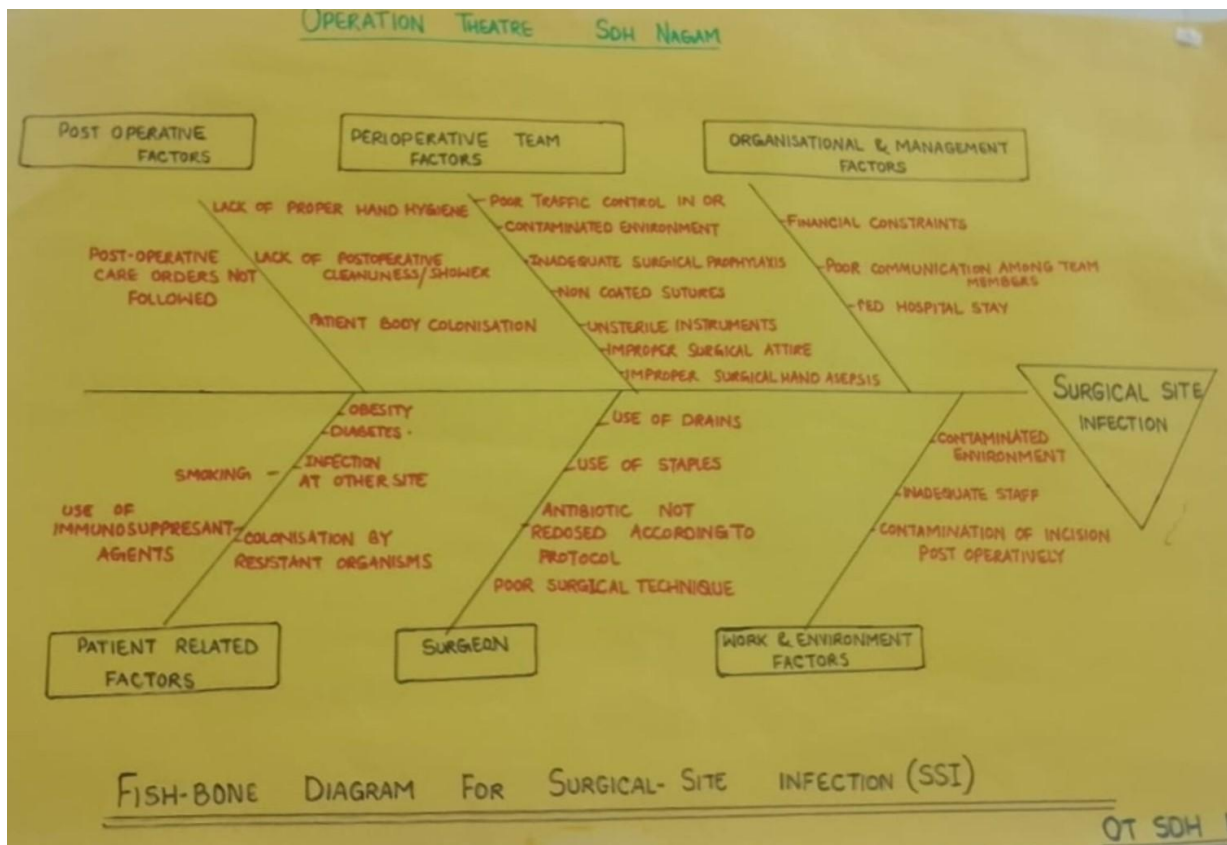
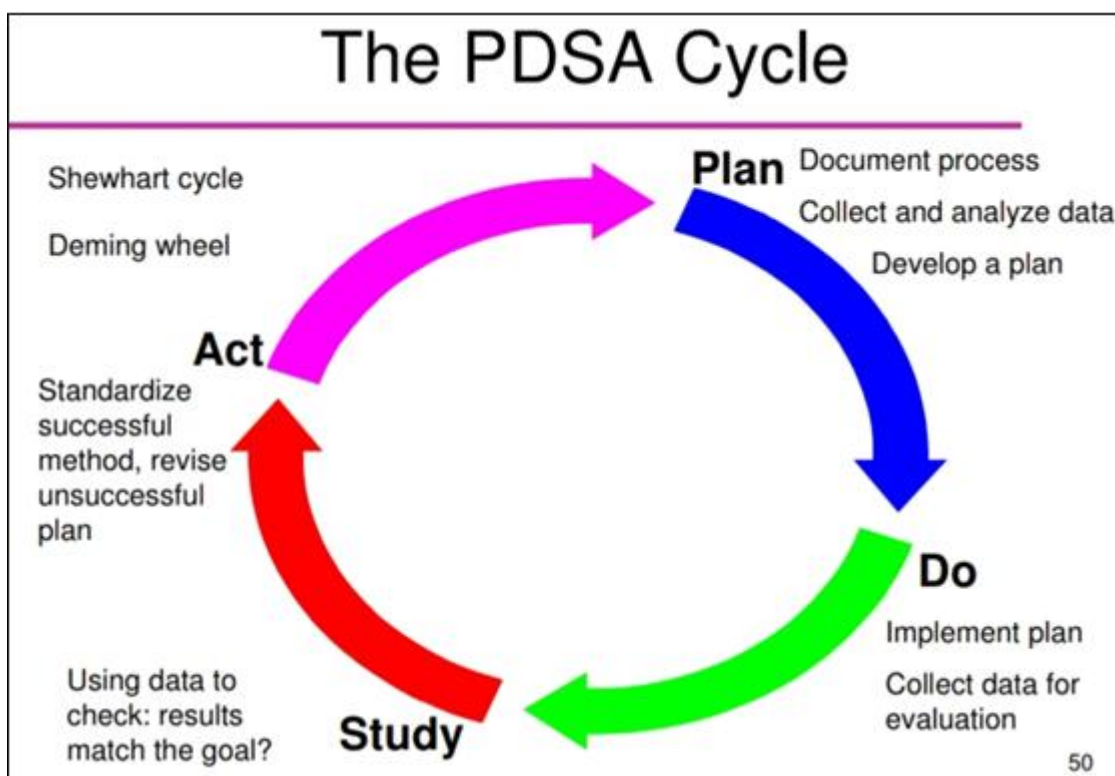


Diagram 1: Fish bone diagram of OT section showing causes for surgical site infection.

3) **PDCA**; PDCA or plan–do–check–act (sometimes called plan–do–check–adjust) is an iterative design and management method used in business for the control and continual improvement of processes and products. It is also known as the Shewhart cycle, or the control circle/cycle. Another version of this PDCA cycle is OPDCA. The added "O" stands for *observation* or as some versions say:

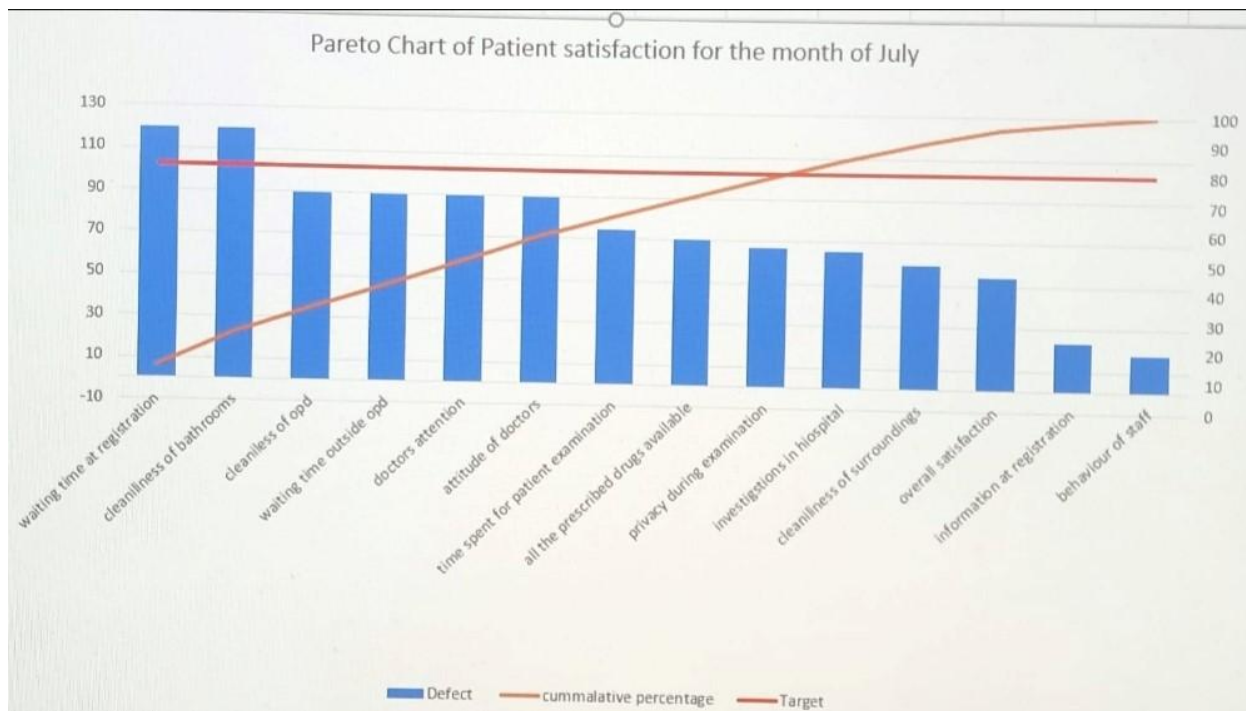
"Observe the current condition. " This emphasis on observation and current condition has currency with the literature on lean manufacturing and the Toyota Production System. The PDCA cycle, with Ishikawa's changes, can be traced back to S. Mizuno of the Tokyo Institute of Technology in 1959.



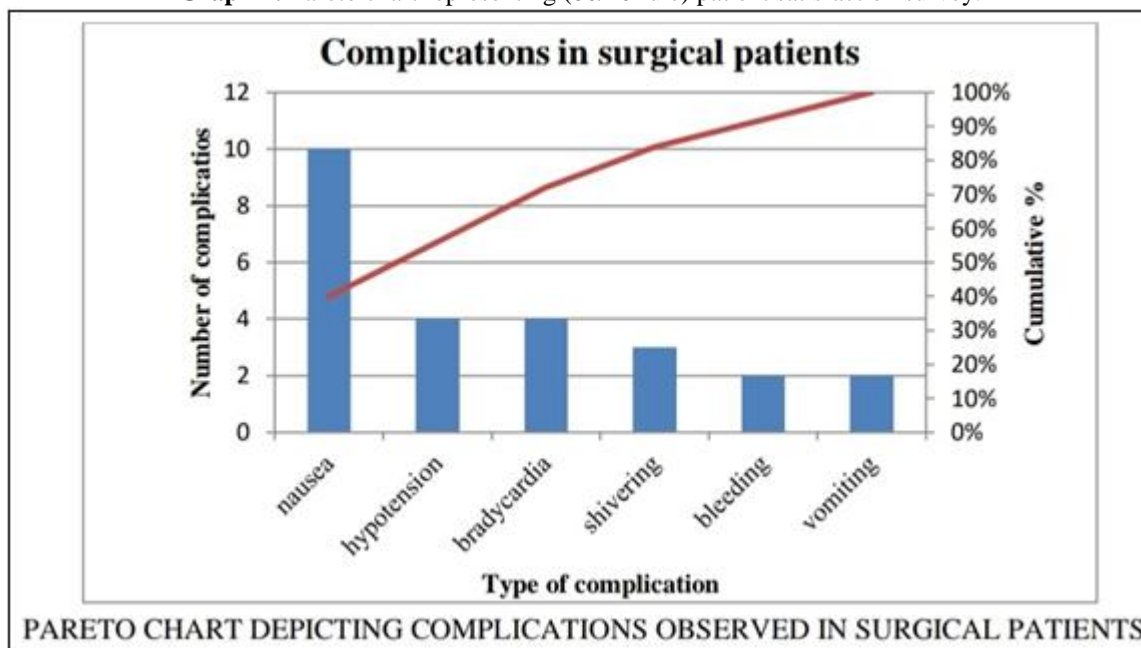
4) PARETO; A Pareto chart is a type of chart that contains both bars and a line graph, where individual values are represented in descending order by bars, and the cumulative total is represented by the line. The chart is named for the Pareto principle, which, in turn, derives its name from Vilfredo Pareto, a noted Italian economist.

measure. The right vertical axis is the cumulative percentage of the total number of occurrences, total cost, or total of the particular unit of measure. Because the values are in decreasing order, the cumulative function is a concave function. To take the example below, in order to lower the amount of late arrivals by 78%, it is sufficient to solve the first three issues.

The left vertical axis is the frequency of occurrence, but it can alternatively represent cost or another important unit of



Graph 1: Pareto chart representing (80/20 rule) patient satisfaction survey.



Graph 2: Pareto chart depicting complications observed in surgical patients.

5) Scatter: A Scatter diagram represents a degree of correlation between two variables.

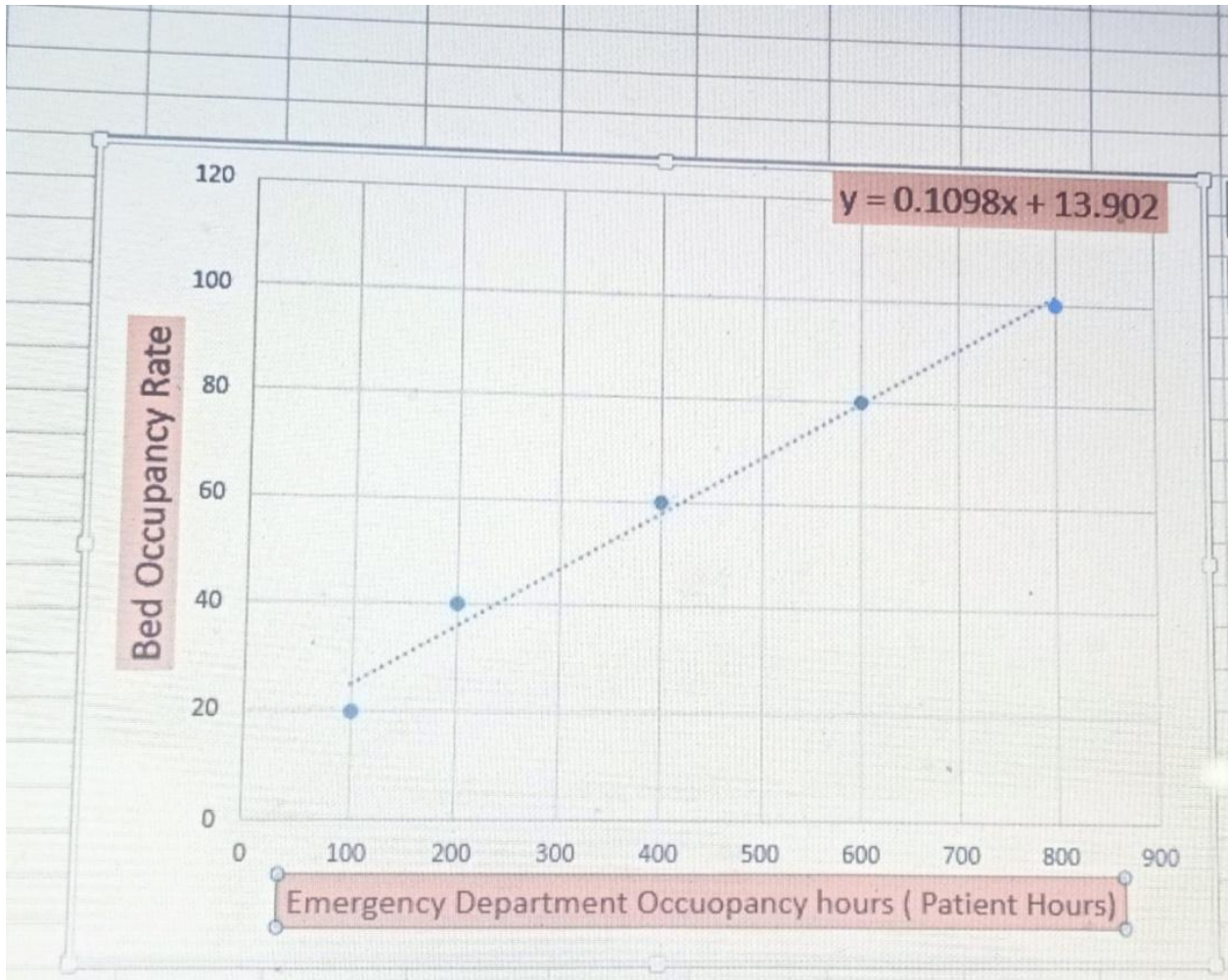
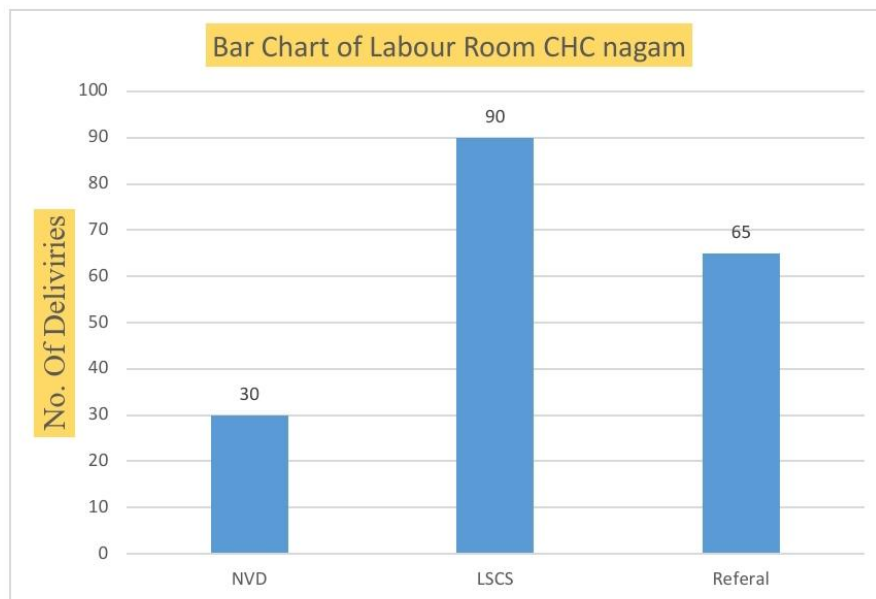


Diagram 2: Scatter showing strong positive correlation between Bed occupancy Rate and patient stay hours in Emergency department6

6) Graphical analysis;

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Graph 3: Graphical representation of data in labor room depicting analysis of Delivery indicators.

4. Conclusion

The study concluded that NQAS implementation showed a significant improvement in knowledge, attitude and practices of healthcare employees, and it points towards its need of implementing in all health facilities of India.

References

- [1] Javeed et al An impact assessment study of NQAS certification was done by Population Research Centre, Dharwad, Karnataka in three (03) States of India i. e. Chhattisgarh, Karnataka and Maharashtra.
- [2] Greenfield, D. and Braithwaite, J. (2008), 'Health sector accreditation research: a systematic review', International Journal for Quality in Health Care, Vol.20 No 3, 172 - 83.
- [3] Nicklin, W. (2015), 'The Value and Impact of Health Care Accreditation: A Literature Review'. Canada: Accreditation Canada.
- [4] Institute for Kvalitet Og Akkreditering I, S. (2009), 'The Danish Healthcare Quality Program Accreditation standards for hospitals', 1st version, Aarhus