

## Quality circle technique in tertiary health care system: A Sustainability model.

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### Abstract:

*Objectives: To find out important administrative/human resource problems, barrier may exist and role of quality circle in improvement of quality of sanitation at tertiary health care system. Study design: Observational descriptive case study Study setting: In August 2014, a study was initiated to establish quality circles in a 1407-bed tertiary care hospital in Central India. After the administrative process and a pilot study, experimental units began implementing the quality circle program in September 2014. After exploring many problems related to patient care it was decided to address poor hospital sanitation as it was felt an important issue. Study participants: All full time permanent workers willing to participate in the study as a group member and one of the member was elected as group leader.*

*Main outcome: Effective functioning of quality circle, tremendous improvement in ambiance in terms of floor, side walls, toilet and hospital waste management assessed by qualitative means- observations and feedback. Results: Majority 98.5% of the hospital problems were of C and D category. Predominant problem was poor sanitation, poor hospital waste management and robotic work pattern. It was decided to form quality circles for well-defined problem so that with the help of facilitator and group leaders were able to solve problem with full participation. At this juncture there is "no foul smell no filth". Waste is properly collected and disposed of. Focus group discussion with different circle reveals work satisfaction. Discussion with other staff said that "tremendous improvement in all aspect of hospital environment". However; it was a converse situation in non-quality circle areas.*

*Conclusion: Quality circle programme at Government Medical College, Nagpur, and tertiary hospital tremendously improved hospital sanitation without additional financial inputs from hospital administration. Working together with some knowledge about problems and its easy elucidation provided by group members tremendously achieved desire goal in terms of quality of hospital sanitation. Outcome is not only be amazing but it will also help us to stumble on our own lacunae and facilitate designing of a better system.*

**Key words: Quality circle, hospital, management, sanitation**

### INTRODUCTION

Why have the Japanese become so successful in the international marketplace since World War II? The fact that QCs have worked for Japanese is above dispute, even by its strongest critics (1). The Quality Circle consist of a small group of employee who voluntarily meet at regular interval to identify, analyse and solve quality, risk management, cost and staffing problem in their work areas. Normally members of a particular QC come from the same area and then face similar problems in their daily work lives. Process include increasing employee concern for problem perception, more effective communication, active job involvement and encouraging team work (2,-5). Benefits gained through the QC group talk about workplace and service improvements and make presentations to their management with their ideas (6). These are related especially to the quality of output or services in order to improve the performance of the organization / department and motivate and enrich the work of employees. This group (6-12 members) carries on continuously as a part of organization-wide control activities, the members receive training in problem solving, and services which may be implemented by the management. Thus Quality Circle is not merely a suggestion system or a quality control group but extends beyond that because its activities are more comprehensive. Number of studies such as those by (1,3,7,8) have reported and found to be successful in resolving problems related to patient care.

With this background the present study was planned to

1. To find out the barriers that may exist within the prevailing organizational structure
2. To find out solutions with the help of quality circle for the prevailing problem of poor sanitation.
3. To know the perception of various category of staff and patient who had been visiting to this hospital.

**Method: Actual working of Quality Circle / Operation**

This concept is very new concept for the smooth functioning of this tertiary health care hospital. In the beginning QC concept was explored with general administration and with the employee. After repeated presentation it was consented by employee to participate in QCs. According to existing work place and types of their jobs many circles were being formed and specific names were provided to those circle. Leader of QC was a key mobilizer and motivator. Facilitators helped lot in training of various QCs. Co-coordinator is a administrative officer who co-ordinates and supervises the work of the facilitators. A steering committee is at

the top of the structure. It is headed by Dean of the institution and includes representatives from the top management personnel and human resources development people. It establishes policy, plans and directs the program and meets usually once in a month.

Mobilizing resources for common goal : WHO Model (9) Based on Community Mobilization was adopted for Inviting workers participation, Exploring the issues, Prioritising the problem, Planning together, Act together, Evaluate together.

The perception of QCs today is 'Appropriateness for use' and the tactic implemented is to avert imperfections in services rather than verification and elimination. Hence the attitudes of employees influence the quality. It encourages employee participation as well as promotes teamwork. Thus it motivates people to contribute towards organizational effectiveness through group processes.

#### *Basic problem solving techniques*

The following techniques are commonly used to analyse and solve problems:

1. Brainstorming
2. A, B and C analysis of problems
3. Pareto analysis

Brainstorming is a group or individual creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its member(s). Extension of brainstorming is A, B, and C analysis- Where A category problems needs lot of administrative support in terms of external human resources and monetary assistant. However; B and C problems can be very easily and effectively tackled by means of QCs.

Pareto analysis means choosing the most important changes to make. It is a very simple technique that helps you to choose the most effective changes to make. The Pareto Principle states that, 'by doing 20% of the work you can generate 80% of the advantage of doing the entire job. It is a formal technique for finding the changes that will generate major results. It is useful where many possible courses of action are competing for your attention (11). Pareto analysis not only shows you the most important problem to be solved but it also gives you the score showing how severe the problem is. It is the only application of this important 80/20 principle.

Cause and Effect Analysis (Ishikawa/Fishbone analysis) (13)

It means identifying the likely causes of a problem thoroughly. Their major benefit is that, they push you to consider all possible causes of the problem, rather than just the ones that are more obvious. This approach combines brainstorming with use of a type of a concept map.

Suggested steps for conducting Cause & Effect Analysis:

Identification of a problem: by means of active participation was the major input of workers during QCs meeting. Pen down the exact problem that we face in detail. Identify who were involved, what was the problem and when and where it occurs. Workout the major factors involved and identify the factors that cause the problems. Draw lines off the spine for each factor and label it. Those may consist of people involved in the problem, systems, equipment's, materials, external forces etc. Then identified the possible causes by analysis of diagram.

Data Collection techniques and tools

Techniques	Tools
Using available information	Checklists, data compilation forms
Observations	Eyes and other senses, pen/paper, watch, scales, microscopes etc.
Interviewing	Interview guides, checklists, questionnaires, tape recorders
Administering questionnaires	written Questionnaire

A case study of Government Medical College and hospital, Nagpur

In view of poor sanitation and ill maintenance of hospital and premises the management of Government Medical College and Hospital has decided to improve hospital campus. In existing situation; 50% deficit of human resources decentralization of those available since many year was the great hurdle to achieve objectives of the study. An enormous

responsibility in a very short span of time was shouldered by investigators. Now it was obligatory for hospital staff to reorganize the system in a competent and effective manner. Still being at its initial stage, the hospital administrator were encountering many small problems frequently regarding maintenance and services for the patient. To name few were:

1. Only reporting of all problems (A,B and C) to hospital administrations and not taking any action at that level.
2. Hospital waste: improper collection of biological and non-biological waste, irregularity in transport and indiscriminate disposal Hospital.
3. All around filth and dirt
4. Many foul-smelling site inside and outside
5. Sewage system -overflowing
6. Irregularity and chronic absenteeism of grade D staff
7. Poor perception related work planning, solutions and actions.
8. Absolute decentralization
9. Robotic attitude
10. Poor monitoring and supportive supervision.

A committee was initiated to study the above problems and come out with efficient solutions to meet the requirements of the hospital administration. These issues were extensively discussed with Medical College Council members, nursing staff and with majority of hospital staff members. Lot of presentations and brainstorming sessions were conducted. It was decided to solve the above problem by cause and effect analysis and the same was presented in the following diagram before the management committee.

The management acknowledged the solutions and accepted to implement the same on urgent basis. It helped the hospital administration to come out with great solutions. It was also noticed during the above operation that Quality Circles, if productively put into practice it can crack countless variety of problems in any context of expertise.

The operation of Quality Circle involves the following sequential steps:

1. Identification of a problem: The members of the Circle are supposed to identify the problems that are to be solved.
2. Selection of the problem: The members then decide the preferences and select the problem of apex priority.
3. Analysis of the problem: The selected problem is then classified and analyzed by basic problem solving techniques like brain storming and Pareto analysis etc.
4. Generating alternative solutions: Identifying various causes helps to generate various alternative solutions.
5. Select the most appropriate solution: The most appropriate and suitable solution is selected after considering various solutions related to cost, possibility of implementation etc.
6. Preparation of action plan: The members prepare plan of action to the implemented solution like area of implementation, date and time etc.
7. Approval of the Management: The chosen solution and the plan of action must be put forward before the management for their approval.
8. Implementation: The management evaluates the solution and examines the same before implementation. The management may consider a pilot run also.

Evaluation was done by independent panel after three months of implementation of quality circles: Table 1 reveals different groups and their numbers participate in Focus group discussion (FGD) was carried out with different stakeholders includes-

Table 1. Focus groups and numbers of participants

Focus Groups	No of participants
1. Top administrators (Dean of the institution, Chief administration, and senior faculties working at this institution.	10
2. Staff Group	20
3. Student's perception and	20
4. Patients perception.	10

The in-depth and semi-structured interviews used for the collection of data were complementary in the method. Analysis of focus group were audio-audio recorded, transcribed verbatim, and translated into English. After each focus group, field notes were written reflecting observations, methodology, and perceptions. The data were further

explored, using content analysis, for the identification of recurring themes.

Following important observations

Variables/issues/ Major themes	Major perceptions after three months of QCs
Foul smell due to indiscriminate disposal	Senior faculties expressed their perception about foul smell: “Earlier it was very difficult to enter in this premises without covering mouth and nose but at this juncture I do not find any sinking site in this premises or inside the wards” “Now I am very comfortable entering and doing clinical work; no foul smell”
Filthy	“I am taking treatment since last two years; tremendous improvement in terms of cleanliness. Now I am comfortable” “Hats up for dedicated workers”
Bins and colour bags	“There are bins and bags so that waste is properly collected and disposed of very easily said by staff”
Overflow of sewage system	“First time experiencing that sewage of the hospital is drained in the drainage pipes without overflow. That is why stinking is not there said by community leader”
Skirting tiles	“I have visited this hospital after 3-4 months; I thought how hospital authority changed all tiles of hospital in short span of time ? When I enquired someone said; it was not changed but cleaned by workers of this hospital. “
House keeping	“Now I find better environment in the Wards and hospital premise; I thought some very important personality might be visiting to this hospital. But was wrong. Every day it is maintained. It was a sigh of relief for me because I am a chronic patient”.

## Conclusion

Quality Circles are not only limited to manufacturing firms but for variety of organizations where there is a scope for group based solution of work related problems. If lucratively implemented in the tertiary care hospital resulted in acceptable level of sanitation. Tremendous improvement in capacity building resulted in strong sense of ownership, supportive monitoring and supervision. Quality circles assures immediate recognition and solution for the minor to major problems assures administration about sustainability. Where we can save majority of energy for best patient care and providing esteem learning environment. Hospital sanitation has become an integral part of everybody's life whom so ever enters in this hospital.

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