

Chapter 4

METHODOLOGY & STRATEGIES

Key Messages

- Successful implementation of 5S-TQM approach proved to be very effective in developing an organizational culture characterized by increased patient/ staff satisfaction and safety.
- The EBM Study adopted 5S as a basis for TQM to improve workplace and motivate staff.
- The collaborative approach which utilizes the application of a classic operations model, PDCA (Plan-Do-Check-Act) Cycle was identified as a suitable framework to establish, maintain, and continuously improve 5S activities.
- 5S implementation needs a minimum of 2 to 3 years until the programme becomes institutionalised as a routine practice in the hospital.
- Successful 5S implementation typically goes through a cycle of four phases, starting from preparation and Planning (organisation of quality management unit and working improvement teams, training), implementation (five Ss of Seiri, Seiton, Seiso, Seiketsu, and Shitsuke), and assessment (including monitoring) to taking actions.
- The bottom-up approach will work in a self-reinforcing cycle resulting in the provision of improved healthcare services in the long run.

The chapter describes the methodologies adopted in the pilot implementation, which would form a model to be replicated in other public hospitals later by the MOH.

4.1 APPROACH AND STRATEGY TO ENHANCE HOSPITAL QUALITY

The primary challenge is the functional change in the healthcare services. The Study Team adapted 5S techniques as an initial step towards total quality improvement. The EBM Study aims to develop a robust model based on evidence for implementation of 5S in the immediate term and proceeding to TQM in the long term. In tailoring a model for future replication, the Study Team combined two approaches. First, a methodology for implementation of 5S was developed. Secondly, to sustain 5S implementation, a continuous learning process (a collaborative improvement approach) was introduced to scale up quality improvement activities.

4.1.1 EVIDENCE-BASED DECISION MAKING

Poor quality care is often attributed to lack of resources in public hospitals but studies in several developing countries have shown that high quality care can be provided even with restricted resource situations.

In such an environment of resource constraint, this study aims to establish a workable Quality Management System in public hospitals by gathering evidence from testing changes required to solve quality problems in hospitals by health workers themselves. The evidences continuously produced by testing of such changes would help in developing an appropriate quality management system in a hospital.

An assortment of evidence is presented in the appropriate sections throughout this report.

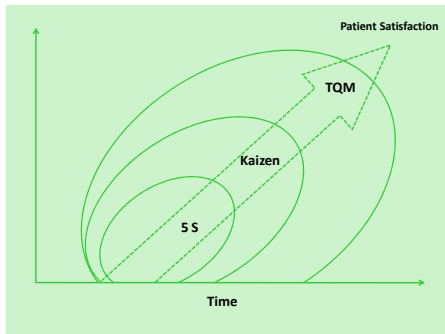
4.1.2 5S AS A BASIS FOR THE TQM APPROACH

There are many approaches to improve quality. The 5S approach which is one such approach, is implemented under Component 1 of the EBM Study.

5S implementation technique is different to traditional approaches seen in other quality assurance programmes. 5S is an outstanding development activity because of its visibility and readiness to be perceived by all levels of personnel and the public. It is well accepted that the team work approach unites all categories of staff of an organization. Regular monitoring and evaluation of 5S supports continuous improvement of services provided by the institution with tangible benefits to both the provider and the user. 5S concept, upon its implementation in few hospitals, has helped to correct the dismal image of government hospitals and uplift the staff morale.

The underlying principle of this approach is encouraging full participation of hospital employees by introducing methods that are simple enough to

understand and to implement. This approach promotes quick tangible results.



The expectations are that the initial intervention through 5S with some additional inputs would evolve over time into a CQI process (Kaizen). Ultimately the new structures and procedures established through 5S and CQI implementation and with new inputs, would help the establishment of a Total Quality Management System that is expected to take place in 3-4 years.

FIGURE 4- 1: FROM 5S TO THE TQM PROCESS

4.1.3 DEVELOPING COLLABORATIVE APPROACH FOR CONTINUOUS QUALITY IMPROVEMENT

The EBM Study initiated a collaborative approach that encompasses 5S activities through PDCA cycle to move on to the TQM process. Quality improvement is necessarily about change. The study aims at helping the hospital staff to design and implement changes that would improve quality of healthcare services. The experiences would ultimately be used to develop a model for nation-wide application.

PDCA cycle was originally developed by Walter Shewhart, a statistician in the 1930's, and later in the 1950's Edward Deming promoted it in Japan for the use in quality management of industries to co-ordinate continuous quality improvement efforts.

The EBM Study has adopted the collaborative approach that would help quality improvement teams to undertake systematic changes in the work processes.

- Use this problem-solving technique to institute a cycle of learning and improvement in the team- work.
 - 1. Define quality problem: The first task is to select a quality problem and clearly define it. In this task, the WIT identifies problems that are related to poor quality in their zone of work and select those that they can tackle on their own. They are guided by the six elements of quality to identify and select problems that need to be prioritized.
 - 2. Set aims: Quality improvements that are to be undertaken require a goal or aim .Next step is to review the selected problem and set up the aim that spells out what is to be achieved. The WIT has to develop skills for identifying and agreeing on necessary improvements.
 - 3. Select measures: The approach for improvement should include measures to determine if the observed change is in fact an improvement. In this step, the team needs to

establish the way of measuring. The ultimate outcome of continuous improvement could be measured as reduction in infection rate, medical errors etc. Other possible outcomes will be seen in the delivery of services to the patients if appropriate indicators are used.

- 4. Select changes: The team will proceed to discuss and identify the changes that are most likely to result in an improvement of the quality problem.
- 5. Test changes: PDCA cycle is used at this stage. The team decides on the intervention (test) to make one of the selected changes. They plan the tasks or steps to carry out the intervention, implement the tasks, monitor the progress and act on the results. They learn from the failures in the past and refine the actions. Next, they plan the refined intervention or initiate a new intervention. Real change will require many cycles of interventions (tests). Once all interventions are made, the team would rule out if the desirable outcome is achieved. If so, they could adopt the change.

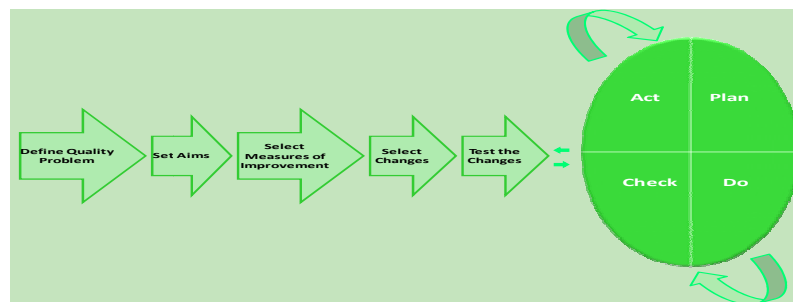


FIGURE 4- 2: CONTINUOUS IMPROVEMENT THROUGH TESTING CHANGES

Multiple PDCA cycles are required before finalizing and adopting this method to manage the challenges in both clinical and managerial areas of the hospitals (see Figure). Finally, the above steps are expected to lead to Total Quality Management (TQM) over time if additional managerial and physical inputs are duly provided.

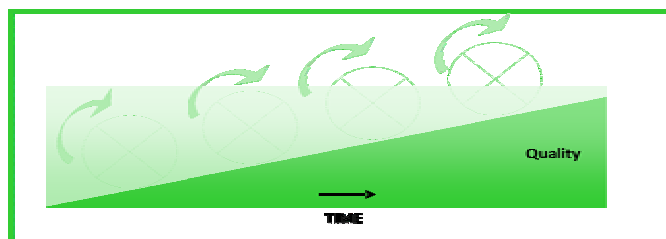


FIGURE 4- 3: MULTIPLE PDCA CYCLE

4.1.4 THE ROLE OF 5S-TQM IN THE HOSPITAL CULTURE

It creates a culture that has to be built into any organization which aims at spontaneous and continuous improvement of working environment and working conditions.

5S is not a list of action items that has to be revised at some interval of time. Instead, it has to be practiced as an integral part of daily activities, which requires concentration, dedication, and devotion for sustaining it and ultimately making it an organization-wide culture.

The application of PDCA Cycle for step-by-step implementation of 5S (the collaborative approach) proved to be an adequate model that will include the problem-solving techniques from the beginning of introducing 5S to the hospitals. This will lead them directly to be LEAN organizations working on Kaizen principles (COI) which eventually evolve to manage the hospitals according to the principles of TQM.

5S implementation needs about two years to be fully ingrained implanted in a hospital setup. Implementation of 5S will provide the staff with space and a clean environment which will facilitate 'creative activities' enhancing the quality of care in their hospitals. This will mark the point where COI initiatives could be implemented in those hospitals.

Benefits of the 5S practice are;

- Clearly distinguishes the items needed in a work area from those no longer needed. The end result being;
 - I. Permitting extra work space.
 - II. Strengthening of safety measures
 - III. Increase in productivity
 - IV. More visible work flow
 - V. Improved quality
- Keeping the required items in the correct place to allow easy and immediate retrieval. Benefits:
 - I. Eliminates the need to search for tools and supplies.
 - II. Safety improved with an organized workplace.
 - III. Improved productivity.
 - IV. Less waste motion.
- Keeping work areas, all work surfaces and equipment clean and free from dirt. Benefits:
 - I. Cleaner and more satisfying place to work.
 - II. Quality improvement.
 - III. Safer working environment

All hospitals involved in implementing 5S-TQM programme have documented their benefits out of that programme.

A study conducted at CSHW that was published this year in the International Journal of Public Sector Management by Dr. Withanachchi, et al, concluded that an improvement in performance was achieved following 5S based TQM implementation and that the 5S programme may explain improvement at least partially.

4.2 PLANNING OF 5S IMPLEMENTATION

Though many initiatives have been taken by the Quality Secretariat in implementing 5S in various hospitals, a methodology of implementation has not been recorded. However, it is clear that quality improvement in these hospitals involved a process of continuous improvement in selected areas in each hospital. Evidence from those hospitals prove that all interventions for quality improvement using the 5S approach provides a framework that helps to visualise the actions to be taken and the progress made in the implementation.

Implementation of this methodology was divided into four phases. The four phases are summarized below:

- Phase One: Preparation and planning:
 - Situational analysis of hospitals
 - Investigation of the current situation & understanding the nature of the problems.
 - Organisation of required structures
 - ✓ **Quality Management Unit (QMU)**
 - ✓ **Work Improvement teams (WIT)**
 - ✓ **Training**
 - Sensitisation and training of all staff on 5S
 - Leadership training for WIT leaders
 - 'Training of trainers' (resource panel)-QC tools and communication skills, development of implementation plans.
 - Management training for QMU
 - Training for organising 5S for WIT leaders
 - Problem identification ;Selection of the problems that should be tackled in priority order based on problem-solving technique.
 - Setting up of 5S zones, based on evaluation of the problem areas.
- Phase Two: Implementation

Implementation of the plans under *Seiri* (Sort) and *Seiton* (Set in order) in the selected zones, later to be proceeded to *Seiso* (Shine), *Seiketsu* (Standardise) and *Shitsuke* (Self-discipline)

- Sort : Sort and systematically discard items that are not needed in the workplace.

- Set in order: Arrange necessary items in a neat and systematic manner so that they can be easily retrieved and returned after use.
 - Shine: Identify causes of dirt, remove dirt and keep the place clean and shining.
 - Standardise: Help and maintain a high standard of workplace organisation by keeping everything clean and orderly into acceptable set standards.
 - Self-discipline: Get people to practice the 5S system continuously so that it becomes habitual and ingrained in the culture of the organisation.
- Phase Three : Assess the changes
 - Conduct 5S audit/self assessment using the check lists.
 - Study all data collected during implementation.
 - Evaluate the data to find out whether actions achieved the objectives through regular meetings.
 - Phase Four: Take action
 - Communicate and share results through a bi-annual forum.
 - Ensure that the established procedure is followed through.
 - Document them to produce a manual.
 - Take remedial action on problems identified in self assessment.
 - Recognise and reward the efforts of staff in each hospital.
 - Based on the observations of the first round, (6 -12 months) develop a plan for the next cycle.

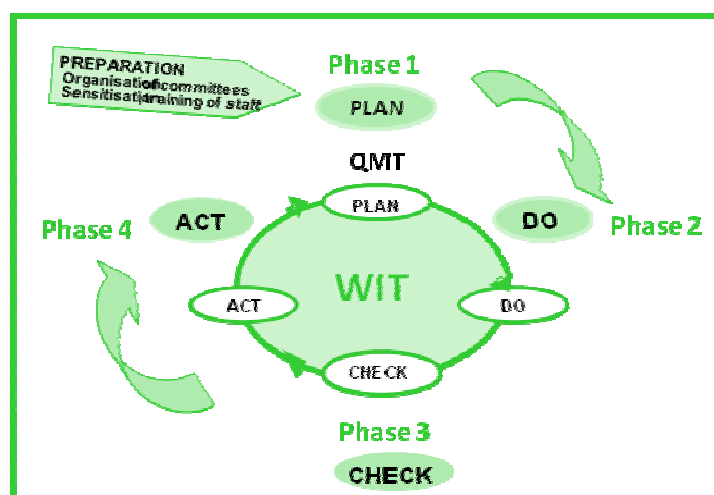


FIGURE 4- 4: FIVE-S OPERATIONAL CYCLE- ROAD MAP TO 5S IMPLEMENTATION

For successful 5S implementation, each phase has to proceed according to the roadmap shown below. The implementation has to be in gradual

increments producing some visible results that would be observed by both the public and staff as an improvement. This in turn is expected to motivate the staff to do more and take ownership of the process.

