

METHOD STUDY TOOLS OF SCIENTIFIC MANAGEMENT AND ITS ROLE IN HEALTHCARE – COMPREHENSIVE STUDY

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Abstract:

In the early 19th century, FW Taylor, the dyon of Scientific Management that includes Method Study, Time Study, Motion Study and Work measurements introduced to increase productivity without straining or stressing the workforce additionally but getting maximum output to the organization and a part of it shared by the workforce. So that, FW Taylor's theory of Scientific Management is not to penalize the workforce but only to increase the output thereby the organizations can get profit and at the same time a part of it is transferred to the workforce.

Subsequently, the same is applied to other organizations including service sectors that includes healthcare. In this article, an attempt is made to analyze the importance of Method Study, one of the tools of Scientific Management Techniques in healthcare facilities where ever it is applicable and the benefits thereon. Due to Globalization, opening up of economy, participation of private players in a big way this tool of Scientific Management namely Method Study has gained and gaining importance.

A broad spectrum of Method study principles in healthcare facility that are identified at three stages namely Pre Operative Procedural Stage, Operative Procedural Stage, Post Operative Procedural Stage till the discharge and subsequent follow up procedures of Rehabilitation and Recuperation including the maintenance of health records. At the outset the Method Study principles cannot be standardized to all the facilities in one go because there are different types of healthcare facilities depending upon their nature of offering/providing the services; that is super speciality, multi speciality, clinical establishments and public health services in State Government and Local bodies. Hence, it is obligatory on the part of the provider/facilities to design their own Method Study principles, so that they can better fit into their organization for better outcome. This Method Study principles when they are integrated with the functioning of the facility will give better output and satisfies the want needs of the Customer (patient), Professionals and others of the facility.

Key words:

Tools of Scientific Management Theory - Time Study, Method study, Motion Study and Workforce Pre Procedural needs, Procedural needs, After Procedural needs, Pre Operative Procedures, Peri and Operative Procedures, Post Operative Procedures, Electronic Health Records, Feedback.

I. INTRODUCTION:

FW Taylor, who is known as the father of Scientific Management Theory, developed and introduced Management Techniques in production of an Organization to get maximum prosperity to the employer and to the employee as well. Though FW Taylor introduced this theory to improve productivity in manufacturing organizations in early 19th century which was subsequently improved and adopted in other organizations to get the same effect.

Healthcare has taken predominantly high position as a service product provider with the advent of Globalization and private participation has become one of the largest and biggest service provider Globally. As majority of the countries in the Globe has given top priority to health, as somebody said “A healthy nation is a wealthy nation” and in India, Constitution has given a fundamental right with respect to health.

FW Taylor while propounding theory of Scientific Management, the present theoreticians have developed Scientific Management Theory in Healthcare Sector. Scientific Management mainly adopts the principles of Time Study, Motion Study, Work Study, and Work Measures as tools and the same can be adopted in healthcare sector also.

Healthcare is case specific and cannot be generalized except few pockets because the want needs of an individual differs from others though the ailment/discomfort looks similar. As such there cannot be an universal method of applying Scientific Management Techniques but a general proposition can be developed as main basis in adopting Method Study applications in healthcare. In healthcare, the production and consumption of any service will take place in the same place at one go. Healthcare service neither can be stored nor preserved but has to be consumed then and there by the needy.

II. HEALTHCARE PROCESS IN ANY HEALTHCARE FACILITY CAN BE DIVIDED INTO

- a. Pre Procedural needs
- b. Procedural needs
- c. After Procedural needs

In this article, an attempt is made to explain what is Pre Procedural Need, Procedural Need, Post Procedural Need of a patient who comes to the healthcare facility to satisfy the want needs, how the healthcare providers and professionals can introduce Scientific Management Methods (Method Study) can incorporate to satisfy such want needs of the consumer (patient) and at the same time satisfaction to the professionals and monetary gain to the providers.

As already mentioned above, healthcare is case specific and needs of the individuals differs from others but certain areas can be streamlined by introducing Scientific Methods, by analyzing every task and eliminating the idle procedures, idle time and idle movement of healthcare professionals, paramedical staff including the movement of the patients. This will makes the healthcare facility to work more professionally and concentrate more on the patient’s want needs by the professionals whose experience and expertise can be best utilized.

III. Definition of Method Study: Method study means,

“It is a systematic recording and critical examination of existing and proposed ways of doing work, as a means of developing and applying easier and more effective methods and reducing costs”

“Method study is the systematic recording and critical examination of base of doing things in order to make improvements.”

IV. Objectives:

1. The aim and objective of method study in any organization is to identify the operational drawbacks, lousy method of doing things, irrelevant functions that can be eliminated or minimized to increase the efficiency of the workforce, process and thereby getting profits to the organization, in addition eliminating stress and strain on the workforce including patients.
2. **Human considerations:** means to analyze the human efforts and the result thereon, in any organization, with reference to healthcare services and is important because, every patient is case specific and his/her want needs are different, as such if an identified method is introduced it will have greater satisfaction both to the healthcare professionals and the patient but also reduces if not eliminated completely the stress, strain and anxiety of the patient. A patient who comes to the healthcare will be in a confused state of mind, because unable to understand what is his ailment/discomfort and how long it will take to bring him/her back to normalcy and the anxiety of stay in an environment (healthcare facility) that is not aken to the patient.
3. **Technical considerations:** The advent of high technology in healthcare operations that includes MIS, Robotic Surgeries, Artificial Intelligence, have changed the process of attending a patient by a professional who otherwise has to depends him / her decision making on the expertise and experience in applying a process/procedure on a patient to attend to his/her want needs for which he/she has come to the healthcare facility.
4. In healthcare operations/procedures, when analyzed, a standard way of operations can be adopted in many of the near identical ailments/discomforts by utilizing Method Study operations that are identified and recognized.
5. **Economic considerations:** The motto of any organization is to earn profits but not charity. This kind of Method Studies that are developed after careful consideration and examination of different methods will yield not only good results but also revenue to the providers. The other advantage being the number of days that a patient has to be in the facility can be minimized to the bearest; so that, the cost will be reduced, and the patient will be happy that he/she will be discharged earlier than expected.
6. When we adopt and introduce new methods after due recognition of their importance, but at the same time, one should keep in mind the limited resources such as manpower, equipment and resources, else the very purpose of Method Study is gets nullified.
7. While applying any new method, the healthcare procedures should not affect the normal procedure nor the outcome / output.
8. Introduction of any new method / procedure for examining the various activities associated with the problem which ensures a systematic, objective and critical evaluation of the existing environment while introducing the new method.
9. In, especially, Method Study, Motion Study is more and relevant detailed investigation of the patient's want needs, but also the utilization of the equipment and the professional experience and expertise.

V. The relevance of “Method Study” principles in healthcare and healthcare facilities:

Method Study principles are advocated by FW Taylor in early 19th century, to bring maximum output by eliminating idle times and idle motions and streamlining the flow of operations mainly in a manufacturing unit / organization to get maximum profit / production with minimum stress and strain to the workforce, at the same time make the workforce as beneficiaries in the outcome.

However, the same principles are being applied in majority of the organizations by subsequent researches without disturbing the main principle not only in production but also in service sector also. Healthcare/Healthcare facility is a service sector with an unique characteristics compared to other service sectors because “**Human Element and Human Being**” are involved. With the advent of private players participating in healthcare in a big way globally, due to opening up of economy and Globalization of healthcare, it has become necessary for healthcare and healthcare facilities and providers to streamline the operations and processes in the facilities with the help of “**Method Studies**” which is a part of Scientific Management Techniques.

In any healthcare facility, the conceptual framework revolves around human want needs and the application of healthcare professional’s experience and expertise. The application of “Method Study” principles in healthcare / healthcare facility can be divided into three stages namely,

1. Pre Operative Procedures.
2. Peri and Operative Procedures.
3. Post Operative Procedures.

1. Pre Operative Procedures:

The function/process in any healthcare facility begins with the presence of a patient with ailment / discomfort and to get rid of the ailment/discomfort to normalcy.

a. Design of healthcare facility:

The nomenclature of the healthcare facility has gone a drastic change from the earlier nursing homes and clinical establishments to super speciality, multi speciality facility’s and in addition some are providing Rehabilitation and Recuperation Centres to cater to the needs of the customers (patients) after procedures. This requires *methodical application* of design to facilitate and incorporate the required areas of specialization as per the conceptual framework of the providers and the capacity of the facility and number of specializations that are to be provided.

In the words of Wingston Churchile (May 10th , 1941)

“We shape our buildings and afterwards our buildings will shape us”

Design of healthcare facility is a complex in nature because it deals with humans and it encompasses many technical, medical, ethical issues and the facilities should satisfy the want needs of the Customers (patients) who are of different cultures, faith, religion, background and demography. At the same time, the healthcare providers should follow the government rules and regulations that is NABH compliance and with other building regulations of the local governments. While designing, the architecture should follow the procedure, the flow of the operations of the healthcare facility that is to be designed giving importance to the flow of operations with minimum movement of the men, material, patients and professionals, so as to get maximum output from the healthcare professionals, satisfaction to the Customers (patients) and good returns on the investment made by the providers.

Any healthcare facility, starts from the security at the entrance that leads to helpdesk, where the necessary information can be obtained. This should be followed to the other departments and there should be a pictorial sign board mentioning the positioning of the different departments in English and Local language with figures so that a person who doesn’t know English and Local Language can identify the required department and the way thereto. In my observation, I found in one or two healthcare facilities that an enquiry officer being appointed, at the entrance to give suggestions and directions to the incoming people and to guide them to required destinations (help desk or otherwise). This one method can ease the situation of the persons who are coming to the facility first time, and crowding.

It is obligatory on the part of the healthcare providers to give full details of the facility department wise and the equipment machinery that are to be installed (size, height, weight etc), electrical lines, AC provision, medical oxygen lines have to be provided where it is necessary. All these things if properly designed and installed, it will be with minimum effort, the paramedical staff will operate with no loss of time and at the same time they should be handy to the patients and their accomplice to attend in case of emergency.

Depending upon the *Specializations*, that are to be provided in the facility taking into account minimum movement of the patients and the nature of the ailment, the facility should be divided. Also in applying “Method Study” principles each area that is earmarked for a specific ailment/discomfort should be provided with an Operation Theatre, ICU, Special rooms, in addition a waiting hall, chambers for the specialists and clinical, physical testing facilities. This kind of method will make the patient easy with minimum stress and strain that the patient can get examined by the specialist, get the tests done, if needed to be admitted in the facility and subsequent procedures can be followed.

On the other hand, the consultations are somewhere, laboratories and testing facilities are somewhere and the operations theatres not nearby, it will be herculean task not only to the patient but also to the accomplice to locate them and sometimes they will be disappointed and disgusted. Hence, it is of utmost important while designing any healthcare facility, the Architect should keep in mind the entire process and how the area is being utilized, what are the methods that are followed to make it more flexible, more comfortable and at the same time make the users with less stress and strain.

In the *Pre Procedural Stage*, it is the crucial time where the patient come with the ailment/discomfort and with in a state of unpleasantness and in confused mind, thinking that how long he/she has to stay in the healthcare facility etc; so care should be taken while designing, the Pre Procedural Operations should be comfortable and the patient and the accomplice feel that they are in a familiar place but not in a foreign place.

2. Peri and Operative Procedures:

This is the critical position where the healthcare professionals and specialists will come to a conclusion, the procedure that is to be adopted to attend to the want needs of the patient in getting rid of the patient’s ailment/discomfort and bring to normalcy.

At this stage, it is appropriate to use the following methods to give more comfort to the patient and to the healthcare professionals in diagnosing.

a. A method should be adopted after observation and a time framework should be made for the collection of the entire information and to be forwarded to the specialists / professionals to come to a conclusion, and the patient should be put in a comfortable position in this period and an appointment should be fixed with date and time and it should be followed strictly, but not making the patient coming and going to the specialists and postponing the matters. This will make the patient more unhappy but also the anxiety will increase which will affect on the ailment/discomfort. Hence, at the time of admission or at the time of observation of a patient a complete chart should be made with a unique number to the patient and all the personal information including the present condition of the patient should be recorded and therein a schedule is made for the subsequent visits or stay in the facility and the appointments with the concerned specialists and professionals etc should be made available on hand including tests that are to be conducted, time taken also should be mentioned; so that the patient / accomplice will have a planning accordingly instead of waiting unnecessarily. In this, Peri Operative Procedure the Professional/Specialist will have interaction with the patient/accomplice by counseling them about the nature of the ailments, the procedure that is to be adopted, the pros and cons, the risks that may arise including complications if any, number of days of stay in the facility, time required for Rehabilitation and Recuperation including monetary expenditure required etc. are to be provided in a methodical schedule.

This method has to be followed because if everything is on record with all the details there cannot be displeasure after the procedure and the patient should not feel that he/she was not appraised all these events before the procedure. A separate counseling will be done by the anesthetist with the patient and the accomplice in explaining them the procedure involved, the amount of time that the patient is under anesthesia and the side effects if any, and complications, are to be discussed and informed to them. All these procedures should be streamlined by making standard methods at every stage, so that, the function of a facility will run smoothly without any friction, else if no standard methods are followed and applied, there will be a friction that amounts to displeasure and ambiguity, thus making unhappy situations.

The patient should be given a *Methodical Schedule* by mentioning time and date about the procedure and the duration, and when the patient is to be present for necessary preparation before the procedure and the time taken for the procedure and the approximate time that their kith and kin to see the patient after the procedure. In this, a method has to be applied preparing a chart mentioning the person who is in charge of the procedure and the other professionals, specialists, anesthetists and other details such as the equipment needed, any specialists required, medicines and consumables etc all should be recorded methodically. This kind of methods and procedures if applied it will create good atmosphere without any ambiguity and things will move smoothly. Hence, it is the responsibility of the heads of the department and the administrative department and the human resources who after studying the operations and the procedures that are being attended to in the facilities are to be scheduled for the free flow of operations in the facility without any disturbance. In this regard, they can make the patients and their accomplice involve by getting feedback from them and scrutinizing the same, if found suitable should be adopted, thus making the methods that are being applied at Pre Procedural and Procedural stages.

3. Post Operative Procedure:

This is the stage where the professionals and specialists who attend the patient will take a decision to discharge the patient when, after taking into account the Post Operative condition of the patient. Except in few cases, in majority of the cases the healthcare professionals decide the discharge time of a patient. Here also the healthcare providers should follow some kind of standard method or procedure for the discharge of a patient. There should be a standard discharge procedure to be adopted and followed in every case; once the healthcare professional/specialists comes to a conclusion that the patient has recovered fully and can be discharged. While discharging, the patient a discharge summary of the patient that includes the medication, the procedure and the tests and the results thereon of the patient from the time of admission till the time of discharge (health record of the patient) should be given to the patient or their accomplice. In addition, the medication that has to be followed after discharge and the details thereon and the subsequent visits to the facility and the duration between each visit. All should be given in a schedule form according to the condition of the patient. In case, if any patient has to be under observation by the healthcare professionals during Rehabilitation and Recuperation and the days they have to spend in those centers for full recovery are also to be mentioned. This is needed where some physical exercises and physical movements of the body are needed after the procedure under the supervision of an expert. Hence, all the healthcare facilities that are having full scope of the procedures that they are undertaking/performing should prepare all the standard formats/methods for a smooth running of the facility.

VI. Health Records of the patient:

It is mandatory on the part of the healthcare providers/facilities to preserve and prepare "*Health Records*" of the patients who have undergone procedures as outpatients or inpatients for "*Medico Legal Purposes*" and for future requirements of the patient. Hence, it is necessary on the part of the healthcare providers/facilities to standardize a health record profile for each patient and it should be provided with all the details of the procedure, treatment administered to the patient in detailed and should be handed over to the patient/accomplice at the time of discharge and one copy of the each patient's health record

to be preserved in the healthcare facility, for a statutory period of three years according to the Indian Legal System. After the introduction of Electronics in the healthcare system, now the healthcare facilities are able to keep this health records of the patients in an electronic form, known as “***Electronic Health Records***” by giving a unique number to each patient’s health record so that they can be stored in a master computer. The advantage being storage space can be minimized and information can be retrieved in a split second whenever it is required and they are more confidential and not vulnerable for any damage like previous paper healthcare records. For this the healthcare providers/facilities must standardize a proforma with all the ingredients that are required including legal formalities in accordance with the privacy laws of that country, and that the information can only be divulged only with the consent of the patient or an authorized person of the patient or an order from the judiciary. Each facility will have their own system of maintaining health records according to their needs and the information that is to be preserved, so that it is necessary for any healthcare facility to have their own standard format in this regard.

VII. Feedback:

Due to the advancement in healthcare procedures and operations and introduction of Technology and Software in a big way reducing human activities, it has become necessary to get feedback from the patients, their accomplice and also the para medical staff and other healthcare professionals who are directly involved in the facilities environment. The present environment in any healthcare facility has been mandated to get feedback from all the sources including patients and their accomplice so as to improve the functioning. Hence, every healthcare facility should develop a standard questionnaire from the available information one for,

- a. Patients / accomplish
- b. Para Medical Staff
- c. Middle order Healthcare Professionals
- d. Class IV Employees (Non Technical Staff attending the patients, providing non medical services)
- e. Pharmacy
- f. Administrative Staff
- g. Security.

At the time of discharge a feedback form should be given to the patient/accomplice to express their views/suggestions and any such other information that they want to share with the facility; the patients/accomplice can be assured that the feedback will be strictly confidential.

Regarding other categories every fortnight or in a month a departmental get together can be arranged to discuss their problems, suggestions, remedial measures including their personal problems that are linked to their profession are to be discussed separately under their departmental heads and matters that are to be attended immediately are to be referred to the management for their approval and implementation.

No it has become a practice by majority of the patients relatives to make physical attacks on the Healthcare Professionals, Para Medical Staff and even on Administrative Staff (Admission and Billing), if they feel anything against their acceptance which has to be clubbed without hurting the feelings of the aggrieved persons and at the same time identifying a solution to the satisfaction of all the persons involved in the situation for this a counseling team within the facility has to be made to tackle such situations. This will not only enhance the reputation of the facility when the situation is brought under control to the satisfaction of varying groups.

V. Conclusion:

As already mentioned above any healthcare facility is a conglomeration of different types of services some are normal, some are procedural, some are abnormal and some are instant applications (emergency). Especially, in the case of super speciality and multi speciality hospitals where Oncology, Organ Transplantations, Robotic surgeries, Cosmetic Surgeries are involved, additional methods are to be followed. These methods include approvals from the different departments (State and Central Governments and Local bodies) and special permissions from the respective authorities, legal formalities that are to be followed, are to be standardized and should be adopted without any ambiguity. The function of a healthcare facility involves, by the humans, to the humans and they have to be respected to their feelings, the standard methods that are being applied should not be harsh/damaging/causing ill feeling but should have human feeling and human touch. Hence, the “*Method Study*” principles of Scientific Management Techniques are most relevant in the present healthcare facilities due to the fact, Globalization of healthcare and patients are coming to the facilities without boundaries, of their choice to any destination where they feel that they can have their wants satisfied. Hence, all the healthcare facilities who want to satisfy the patient should always introduce innovative methods keeping in mind the cost consideration but at the same time not losing the human touch and human feeling which only can make the patient fully satisfied. As Mahatma Gandhi, the father of the nation mentioned that,

“Health is Wealth but not piece of Gold and Silver”

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