# USING THE TOTAL QUALITY MANAGEMENT (TQM) TOOL IN SOLVING THE PROBLEM OF DELAYS DURING THE EMERGENCY EYE CARE CONSULTATION PROCESS IN KADUNA, NIGERIA

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## SUMMARY

**Aim:** To demonstrate the usability of the total quality management (TQM) tool in studying the problem of delays during the emergency eye care consultation process in a government-owned eye hospital in Kaduna, Nigeria, with a view to identifying appropriate solutions.

**Materials and methods:** Twenty-five consecutive patients presenting for emergency eye care were surreptitiously observed and the time taken at various stations during the consultation process recorded. The maximal duration expected at each station had been worked out, and overall, the whole consultation process should have been completed within an hour. By calculating the mean of the excess times utilized at the stations, areas of delays were then identified. The causes of the delays encountered at the worst affected station were then identified and appropriate solutions proffered.

**Result:** Nineteen patients out of the total of 25 (76%) did not conclude the consultation process within the stipulated one-hour period. Most of the delays (64% of the total mean excess times spent) occurred at the station where patients saw the emergency duty doctor. The causes of delay included lack of orientation, support and supervision of junior doctors by their senior colleagues; poor hospital support services; poorly circulated doctor duty rosters; and absence of a conducive rest room for the emergency duty doctor.

**Conclusion:** The TQM tool was found useful in studying the problem of delays in the emergency eye care consultation process in the hospital under study. Tackling the identified causes of delays, which were largely within the hospital organizational set-up to solve, will result in a more efficient use of time and personnel, and an increased patronage by satisfied patients.

**Key words:** total quality management, customers' (patients') satisfaction, ophthalmic emergencies

## INTRODUCTION

Health care providers, particularly those rendering services in government-owned public hospitals, are increasingly facing management-related challenges in the way and manner they render professional services to patients. Not only are resources for health care becoming increasingly inadequate,[1] the available hospital and municipal infrastructures have decayed. In the face of these dwindling fortunes, patients have become more discerning by insisting on prompt and quality health care services.[2] In these more challenging circumstances, more innovative approaches are required to meet the expectations of patients – the ultimate customer in the heath care industry.

Total quality management (TQM) is a way of ensuring customer satisfaction by involving all employees in learning to reliably produce and deliver quality services and goods.[3] This model of management needs to be tested in the hospital setting, particularly its attribute of affording more objective ways of speaking with facts on health care delivery processes.

Delays during consultation could be annoying to patients and might make such dissatisfied patients seek care elsewhere. The consequent negative implications for patronage and revenue generation may further worsen the fortunes of the concerned health care facility. The National Health Insurance Scheme, which is expected to be the mainstay of funding for health care in Nigeria in the near future, expressly allows dissatisfied patients to change health care providers.[4] Indeed, in a related study, an audit of the use of ophthalmic theatre time in Jos, Nigeria, revealed that poor management of the operating theatre lists resulted in longer waiting lists, reduced hospital income, and increased hospital expenditure.[5]

The aim of this study is to use the TQM approach to study the problem of delays encountered by patients while seeking consultation for emergency eye care at a public eye health institution in Kaduna, Nigeria, with a view to identifying the critical causes whose resolution will have maximal positive impact on the efficient utilization of time and personnel.

## PATIENTS AND METHODS

The study took place at the primary care unit of the National Eye Centre, Kaduna, Nigeria. All new patients, including emergency cases, are first screened in this unit, and after consultation, those needing more specialized ophthalmic care are sorted into groups for appropriate management. All the steps and concepts outlined below are as described in the Total Quality Management (TQM) Team Members' Manual that was produced by the Center for Disease Control, Atlanta, USA in 1996.[3]

The first step taken was to constitute a cross-functional team comprising an ophthalmologist (the author), an ophthalmic nurse, a resident doctor, an administrator, a social welfare officer, and an engineer as the TQM team. As representatives of the core cadres of the hospital eye care team, members were expected to provide useful contributions to this study from the perspectives of the different cadres.

The administrator on the TQM team surreptitiously timed each of the 25 consecutive patients that presented between September 13 and October 9, 1997, on the time taken (in minutes) to complete transactions at each station visited during the entire consultation process. For the purpose of this study, and taking into consideration the peculiarity of local arrangements, the consultation process is defined as beginning from the time a patient reports at the cashier's desk to pay for an outpatient registration card and ends after the patient has been reviewed by the emergency doctor on duty (EDD). Between these two stations, the patient obtains a card from the health records station, gets screened by a nurse, then by a primary care doctor, and lastly by the EDD. Depending on the complexity of the ophthalmic emergency, the whole consultation process could be concluded at the level of the nurse or the primary care doctor, if the ophthalmic emergency was sufficiently minor.

The TQM team brainstormed on the reasonable time that a patient should spend to complete the consultation process. The team, after running a pilot test of the timing required, allotted the maximum duration in minutes that a patient might go through to each of the stations as follows:

| Station | Maximum expected duration (minutes) |
|---|---|
| Cashier | 5 |
| Records | 10 |
| Nurse | 15 |
| Primary care doctor | 15 |
| Emergency duty doctor (EDD) | 15 |
| Total | 60 |

In effect, any emergency consultation process as defined should be concluded within an hour.

Any station where a patient spent more than the allotted time was identified. The mean of the excess times spent at each station was calculated by dividing the total of the excess times spent at a particular station by the number of patients who actually got delayed there. The mean excess times for the different stations were then compared to identify the station that had the worst instance of delays (the highest mean excess time). In keeping with the TQM approach, which requires that a problem that will produce the greatest impact on improvement upon resolution, should be tackled first, it was the identified worst affected station that was further subjected to a cause and effect analysis by TQM members, in order to identify and verify the root causes of the problems causing the delays.

## RESULTS

Only 6 of the 25 consecutive patients that presented for emergency care concluded consultation within the allotted maximum one-hour duration. Figure 1 illustrates the duration of consultation in hours by the number of patients.

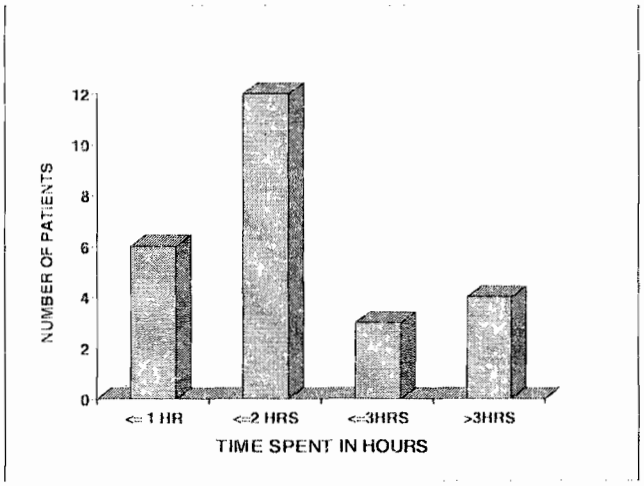


**Figure 1.** Time spent in hours by number of patients during emergency eye care consultation.
<= Lesser than or equal
> Greater than

The mean of the excess time spent at each station is as illustrated in figure 2. Most (64%) of the delays encountered as evidenced by the mean of excess time spent, occurred at the station requiring the patient to interact with the emergency duty doctor (EDD). The root causes of the delays that occurred at this station were identified to be:

1. Poor orientation and supervision of EDD by senior doctors.
2. Lack of a conducive rest room for board and lodging of EDD, necessitating EDDs to stay in their own houses when they were on emergency call duty, particularly during the night.

3. Badly prepared and poorly circulated emergency duty rosters.
4. Poor management of available support services such as ambulance, telecommunication network, and electricity generators.

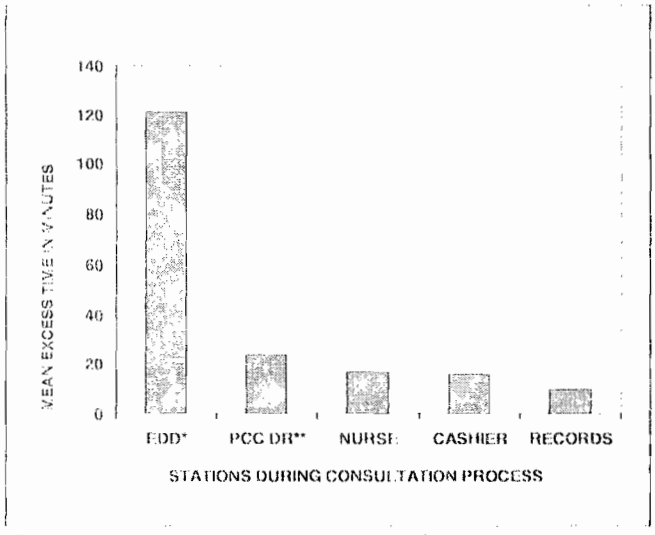


Figure 2. Mean excess time per station during emergency eye care consultation

*EDD Emergency duty doctor's station
**PCC DR- Primary care clinic doctor

## DISCUSSION

Total quality management (TQM) strives to achieve quality service the very first time and at all times through a continuous quality improvement process. A dramatic illustration for the need to strive for 100% standard in eye-health care is the fact that if 99.9% standard were enough, then every one thousandth eye operation might statistically speaking be expected to be performed on the wrong eye!

The four principles of TQM include:

1. Customer satisfaction, which means not only satisfying the needs and reasonable expectations of patients but having an attitude that puts the needs of the patient first.
2. Management by facts, which requires all employees and not only the ones at the helm of affairs, to manage the work they do by collecting objective data and making decisions based on this information
3. Respect for people, which means that each of us needs to listen to and support the capacity of all other employees for self-motivation and creative thought.
4. Plan-Do-Check-Act cycle of continuous improvement.

What especially recommends the TQM philosophy for managing the affairs of health institutions is its ability to come down on actionable problems through objective data-based evidence. Problems that have appeared intractable might then become solvable.

The application of TQM in the public sector in general and in public health institutions in particular, has been limited.[6] The myriad of problems in public health institutions in Nigeria such as shortage of funds, poor logistics, and deficient infrastructure are largely blamed on inadequate funding from the government. This often creates apathy and blinds the eyes of health providers to other problems that could be solved by changing the way they do things. An improvement in the productivity of health personnel by modifying skills, organization and procedure conserves resources significantly.[7] A 10% cut in waiting times by patients would mean that 11 patients could be attended to within the same period of time in which 10 patients were previously seen.

Attempts at ensuring the satisfaction of patients by getting feedback from them have largely been subjective as no objective data was inbuilt.[8] Eye health care providers need to help patients identify their (patients') valid requirements, i.e. needs and wants. These will then constitute the standards of quality eye care or processes which would have been mutually agreed upon between eye health care providers and patients. A patient might think that the longer he stays in the consultation room with his doctor, the better the quality of care he would receive. If, however, all the time needed to conclude his consultation was only 5 minutes (the valid requirement), both the patient and doctor's times might have been saved for other useful engagements. By objectively documenting patients' time flow within the hospital, and setting maximal timing required as was done in this study, health care providers could more easily pin-point problem areas and identify appropriate solutions.

Some aspects of the methodology employed in this study merit further comments. The definition of the consultation process was only limited to the specified stations as these were the only ones common to all patients, irrespective of the nature (medical or surgical) of the emergency or the time or the day of presentation. Also, the factors that may influence patients having further access to definitive ophthalmic care after the conclusion of the consultation process – such as patients' ability to pay for drugs or surgery – are largely outside the hospital's organizational control. The duration of this study was limited to only about three weeks to prevent distortions that might set in if the data collection phase was unduly prolonged with the increasing chance of members of staff becoming aware of the fact that patients' movements were being monitored and documented. The limited duration of this study resulted in a harvest of 25 patients, but then a study sample of about 30 patients is adjudged to be representative in

such studies.[9] Similarly, meaningful conclusions have been drawn from related studies from other eye health institutions from within Nigeria using sample sizes of only 42 surgeries[7] and 50 patients.[5] The mean of excess time spent by patients at each station was used in this study rather than the aggregate total of excess time for these reasons:

- It was not in all instances that a particular patient passed through all the stations itemized during a consultation process.
- The instances of staying longer than the maximally allotted duration varied at each station for the same patient and from one patient to another.

In this study, more than three-quarters (76%) of all patients did not conclude consultation processes for their emergency eye problems within the stipulated period of one hour. Of the 6 out of 25 patients that did complete consultation within the hour, 5 of them did so only by default. Those five presented on weekends when there was no administrative staff available to man the registration and revenue desks, an oversight that has since been rectified. Those 5 patients thereby gained time and also money, by not having to pay for services rendered.

Also, the various reasons for delays within the consultation process were largely within the organizational control of the hospital. The emergency duty doctor in most hospital settings is more often than not, the young overburdened junior resident. Unless he or she was adequately orientated, supported and supervised by the more experienced senior colleagues, both the promptness and the quality of eye care that he or she would render might be sub-optimal. The communication network within a hospital needs to be functional at all times in order to facilitate the instant summons of relevant personnel. As a result of inadequate power supply and poor maintenance, the intercom network was often unavailable for use. For the same reasons, diagnostic appliances such as slit-lamps and ophthalmoscopes were often rendered unavailable for use. The ambulance meant for conveying summoned health care providers during the night was often not functioning due to poor maintenance. The room designated for EDDs to stay in during call duty hours was shunned by EDDs as it lacked basic amenities, and meals were not served. Even when the communication network was functioning, there were embarrassing instances of nurses not knowing whom exactly to call, as the call-duty rosters were either unavailable or poorly prepared with inadequate information.

## CONCLUSION

The TQM concept was found useful in studying the problem of delays encountered by patients during the consultation process for emergency eye care. Tackling the identified causes of delays, which the hospital administration has the capacity to solve, will result in a more efficient use of time and personnel, and increased patronage by satisfied patients.

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