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QMDA, quality management and departmental administration

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Abstract : Today, quality is part of our practice. Anaesthetists are involved in a medical science and want to be excellent at it. Anaesthetists are also involved in departmental organisation and are providers of care, a service to the patients. Quality is a method to obtain efficiency (efficacy and economical advantages). We consider our patients no longer as such, but as health-customers. Anaesthetists are health providers. The patients-customers have their own expectations and they compare the service between the different hospitals. On the other hand, health care is a public matter and in most countries depends on a governmental financing. Quality means efficacy, ethics and economics, including medico-legal aspects. But how can we use a quality and management concept (QMDA) in our daily practice ? This is the subject of the paper.

INTRODUCTION

Everything must be quality. Quality of service, quality of production, quality of delivery, quality in management, quality for customers… Quality analyses the end-product, the system and the process. If quality requirements are more and more present in our daily life, it's presence in health care was only recently introduced (1). At present, quality is part of our daily practice. Firstly, anaesthetists are involved in a medical science and want to be excellent at it. Secondly, quality is a method to obtain customer's satisfaction and efficiency in management. We consider our patients no longer as such but as health-customers. Anaesthetists are health providers. The patients-customers have their own expectations and they compare the product (anaesthesia) and its effects at different hospitals. Thirdly, health care is a public matter and in most countries depends on public financing. Money has to be spent on an ethical, sociological and an economical basis. Finally, the trend in making medical decision has changed from the simple chain of diagnosis, prognosis and treatment to decision algorithms according to recommendations, guidelines and evidence based medicine. Quality means efficacy, ethics, and economics and has medico-legal aspects including the management in the O. R. Quality management and departmental administration (QMDA) are new concepts in anaesthesia (2).

DEFINITION OF QUALITY

Quality is what you think it is! The definition seems multiple and depends on the point of view and the interest of each individual, customer, producer or manager. The challenge is : Quality for whom ? (Table 1)

Deming's definition is "meeting customer's requirements at a price they are willing to pay". Deming also defined the basic concept of total quality control (T.Q.C.) using statistics to analyse the production process (3).

Lohr considered quality as "enhancing the probability to obtain results according to the individual or community expectations which are compatible with the evolution of the actual medical knowledge" (4).

John Steward described it as "a feeling that something is better than the others" (5).

Quality can be "excellence" (more beautiful, stronger...). Quality can be "value" (cost/efficiency, cost/utility). Quality can be the "respect of rules" (recommendations, guidelines, safety rules). Quality can be the "response to the patient's expectations" (customer) (6).

We can make a difference between the expectations of the patients, the health care providers, the managers and the government. The latter has an ethical and political dimension. It depends on the health care system in each country, and the budget spended for it. The value of life has a different price in the U.S. than in an African country. Quality adjusted life years (QALYs) and other economical

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Table 1

Elements of the definition of quality

- The person :
  - Patient : first of all patients want better information and communication (3, 12), as well as relief of pain, nausea and vomiting (12, 18)
  - Surgeon : they want timeliness of care by anesthesiologists (1)
  - Anaesthesiologist : they want a safe practice, smooth recovery from anaesthesia without pain, nausea and vomiting (18)
  - Hospital manager : better cost/efficiency rate meaning a shorter hospital stay and a good recovery to reduce the hospital care (1)
- The health care production deciders in an economical system consider the (7) :
  - Cost/efficiency : the rate between cost and clinical benefits
  - Cost/ benefit : the benefit for the community in terms of monetary unit
  - Cost/ utility : the rate between cost and effects

Table 2

Guidelines for QMDA-TQM

1. TEAM SPIRIT !
2. MANAGEMENT is concerned. From the top to the bottom
3. RESPONSIBILITY : everyone is concerned. Bottom-up
4. STANDARDS : definition of the quality process
5. DELEGATION : each responsible is concerned
6. COMMUNICATION : use the same language, but define it first.
7. PARTICIPATION : involve all the participants
8. EVALUATION : publish evaluations on a regular schedule
9. CORRECTIONS : propose correction strategies
10. PLANIFICATION : propose a continuous quality process

instruments help to define quality for each specific country or health care system (7).

Marshall Sashkin and Kenneth Kiser defined the Total Quality management (TQM) as a new culture for organisation that promotes permanent satisfaction of the customers, using integrated systems, techniques and training. Through a continuous process of excellence in the organisation, they produce services of high quality (5). TQM needs analysis of all the different steps in an anaesthesia process. We have to consider the hole structure, the outcome, and the resources needed. So TQM for anaesthesia concerns the preoperative period, the anaesthesia and the postoperative period, but also the quality of medical anaesthesia and the organisation to perform surgery and anaesthesia. TQM involves all the facets to manage the procedure. The complexity of this challenging human performances and structures, makes that in many centres a TQM project was a disaster due to a resistance to change, essentially coming from human resources.

Donabedian considers three elements, the structure, the process and the outcome (8). The production system includes a structure which must be defined. The process is working in a health care system, and is analysed in function of outcome. Quality management is done by changing the process inside the structure, in function of the outcome. The Deming's principle is P.D.C.A. a continuous process of changing : (plan_ do _ check_ act_ plan_ do… (8).

ISO norms consider essentially the analysis of the process. This instrument only guarantees that there was a quality process analysing the production and bares no referentes to local guidelines and EBM (evidence based medicine).

Quality Management (QM) a new concept in our daily practice :

QM is a new philosophy that involves an analysis of the system, that needs instruments to evaluate and oriented towards the customers (patients) with the appropriate participation of the management and all the co-workers (anaesthetists, head of department, nurses, hospital management…). Communication between partners is the key to success (3). Table 2 resumes guidelines for a good practice of QM.

QM can be focused on a well defined part of the process with a specific aim (8, 9). Knowledge is necessary to pilot the QM and to help the manager in making decisions. On the other hand this analysis of the process must have enough independency to work free of all influences inside or outside the production process (8, 9). The conclusions of the QM must be evaluated through actions by managers but must be discussed with the different partners (3). The QM process denies barriers between functions and privileges (9). According to the mission statement of QM it permits a free analysis of the system. This analysis is based on knowledge and training (9, 10, 11, 13). Finally, the QM

Table 3

Time loss by the admission of a patient in the O.R.

Item	Measured time	Standard time	Delta	Corrective measures
Time necessary to have an answer by phone call		30 seconds		
Time between the phone call, and the departure of the patient from the hospital unit		Five minutes		
Waiting time for an elevator		45 seconds		
Time necessary to bring the patient to the O.R.		Six minutes		
Time for admission in the O.R.		Two minutes		
Etc…				

reveals practical corrections and opens the door for new evaluations and a new QM project. This process is a continuous one (P.D.C.A.) (8). It needs adaptation on each level of the production unit such as the preoperative care, anaesthesia and the postoperative care (12).

How should we start a Q.M.D.A. assessment in anaesthesia ?

Assessment is a part of QMDA or TQM. We have to consider structure (department of anaesthesia), process (anaesthesia procedure) and we have to evaluate the outcome (patient's outcome and satisfaction) (2, 9, 12).

The first step is to collect information. This information must be pertinent, valid and reliable (3, 9). Secondly we have to compare with the ideal standard (10, 13) (Table 3). Assessment must value each step of the production process, each part of the structure such as described by Donabedian (8), and look at the outcome. To do this, a full description of all different points must be necessary as described in table two. This description must also be accepted by the different workers (anaesthetists, nurses, helpers, managers…) who are involved in the process (3, 9, 13). Assessment of a non-defined process will be refused by some participants.

Another criticism about assessment is the choice and the neutrality of the person involved in it. To be credible, collection of the different data must be independent of the management (9, 13). Finally the assessment must be close to the target of the TQM project. This means, that first, we have to define exactly what should be analysed in the QM (13).

The need for "Standards" :

The problem is the definition of the standards of quality. These standards must be set up by those who are involved in the production process (9). They can use references coming from the literature (10, 14, 15) or information coming from other hospitals (benchmarking) (8). These standards are used by a number of scientific or professional societies of anaesthesiologists to make the rules for accreditation or national guidelines (14, 15). At all times, the standards must meet the expectations of the professionals and the customers (13). These standards need to be valued and must meet a real consensus in order to be credible (8, 9, 13, 16). The most common technique to define these standards is a consensus of a panel of experts (8). Experts can be members of the hospital. In this case the adhesion of the other health care workers to the TQM could be a problem. Of course these standards could receive the label of privilege inside the hospital. In other terms neutrality is not guaranteed.

Methodoly to use in a Q.M. assessment

A selection of a number of techniques is presented below (8, 9, 10).

– brainstorming : firstly an open discussion about all the mistakes or problems in a production process. Secondly the leader of the discussion group

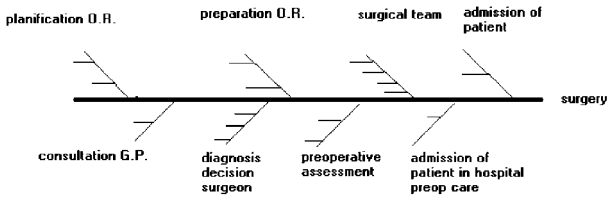

Fig. 1. — Diagram of Ishikawa decision to surgery

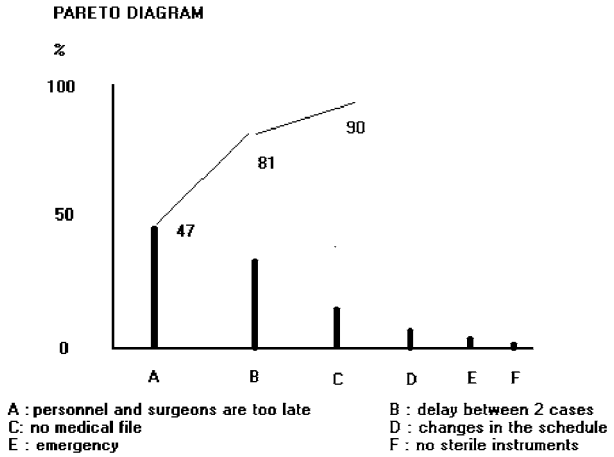

Fig. 2. — Pareto analysis of the disturbances in the OR schedule (9).

Reasons of dysfunction	Value in %	Cumulative value in %
Personnel or surgeons are too late	47	47
Delay between two different cases	34	81
No medical file	9	90

has to classify the different items. Thirdly each item then receives a procedure sequence : problem, possible solutions, application and evaluation (P.D.C.A.).

– What, who, which, when, where, why : first, define the problem to be solved. Then, look for answers to what ? who ? which ? where ? why ? Finally make conclusions and give solutions (P.D.C.A.)
– Cause – effects : or diagrams of Ishikawa. We can describe them as algorithms of effects originating in a specific situation (Fig. 1). Then make conclusions and give solutions (P.D.C.A.)
– Diagrams of Pareto : make a list of the different origins of the dysfunctions and classify them in decreasing order of importance expressed as %. Put them in an X-Y diagram. Make your cut off at 80% of the dysfunctions. Most of the time a small percentage of the causes is responsible for 80% of the effects (P.D.C.A.) (Fig. 2).
– HACCP : hazard analysis – critical control point : this technique analyses the known missing points in the production processes. The sequence is as follows : first define the missing point. Secondly analyse the causes. Thirdly look for the particular effects of it. Finally propose corrective measures (P.D.C.A.).
– Satisfaction questionnaires : the philosophy is the commercial relation between the producer and the customer. In a hospital, the patient is not the sole customer. In a TQM we analyse the relation between the physician and the patient, the patient and the nurses, the management and… Don't forget that physicians are customers of the hospital services. The written questionnaire must include all the different facets of the relationship.
– Medical audit : (17) the quality team checks a number of medical files of patients. They check the validity of the diagnosis, the choice of anaesthesia technique, the number of complications and the length of the hospital stay. The standards are defined by the medical literature. Each item must be defined in a mathematical way. The differences between the hospital practice and the literature are defined. This method is of course not prospective and depends essentially on the lecture and interpretation of the medical literature. There is only an analysis of the adequacy compared to a standard medical file.

All the different methods can be used in a QM process. Methodology should be used as an instrument to obtain the result. This result is the equality between practice and the aforementioned reference of good practice. Of course the reference of good practice could be taken from the literature or from local or national guidelines. In contrast, each hospital or department of anaesthesia can define their own references in the practice of anaesthesia or the organisational aspects. These can include topics as time management, drug errors, side effects, PONV, postoperative pain management and so on.

WHICH APPLICATION IN ANAESTHESIA ?

The clinical application of QMDA and TQM lies in the the quality evaluation of the daily practice of anaesthesia as well as the morbidity and the complications such as nausea, vomiting, or pain (18, 19, 20). It also requests the best cost/efficacy relation (7)…

This analysis should evaluate the point of view of the anaesthetist (according to the standards), and

the point of view of the patient (satisfaction). Communication of information about anaesthesia to the patient is a dramatic necessity to have the satisfaction of patients equal the quality expectation of the anaesthetist (12).

Another field of interest is the management of the O.R. Analysis of the manpower, the work schedules, the admission of the patients, the care for the patients but also the time loss and the management of the logistics are different topics concerning the department of anaesthesia.

The question remains : why we should do it in anaesthesia ? The V.I.P. model of Pr Jacquerye shows that VALUE–INTEREST-PLEASURE are the keys to success (21). A QM in anaesthesia must give a higher level of satisfaction to the patient, the anaesthesiologist, and the managers. That is the value. The interest is generated by the will to be excellent at it. This will is common to most of us. And last but not least pleasure is the motion of the process. A QM-technique which suits the majority of the involved people should be accepted and promoted by all of them. If one of the partners doesn't want to cooperate, the social pressure in this case will be such that it will isolate this partner and thus force him to cooperate.

Training

The leader of the TQM and the project-team has to be credible. Credibility depends on different factors namely scientific knowledge about the QMDA or TQM project, communication, skills, and an assertiveness to maintain freedom of any form of influence by power, by fear or by authority abuses (3, 8, 9, 13). An anaesthesia department has to define the best processes and anaesthesia techniques to care for the patients. It means that everyone should be informed and be conscious of the discomfort generated by the process. Specific care should be oriented essentially to, nausea, vomiting and postoperative pain (12, 18). Communication to the patient is an essential part of the quality process (3).

Conclusions

Q.M.DA is a process of quality (T.Q.M.) and management (departmental administration) that can be used in anaesthesia. Quality need to be defined in our daily practice. On behalf of literature, guidelines and recommendations, we have different techniques to evaluate quality of care. Only when the defects or problems in our process of care are identified, a program of QMDA can be started. Plan and do. Evaluation is again a necessity. We check, and act in order to achieve the best satisfaction of the care customers and providers. P.D.C.A. of Deming can be used in anaesthesia practice and departmental administration to get the best satisfaction of all, patients, anaesthetists and managers. Communication is a necessity for success.

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