

## Continuous quality improvement in ambulatory surgery The non-attending patient

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### Abstract

Continuous quality assessment and improvement (CQI) programmes in ambulatory surgery are geared towards maintaining high quality patient care and services, and ensuring efficiency in the use of those services and resources. From 1989 to 1993 the percentage of non-attending patients in our university hospital ambulatory department increased from 3.66 to 5.5%. The current knowledge of the process was clarified in 1993. After considering the different causes of the process variation we planned for better patient information. The initial phase of our CQI study ran for a period of 6 months. During this time, 967 patients underwent day surgery in our unit. Of these patients, 38 (3.9%) did not attend on the day of surgery. In the second phase, the number of non-attending patients decreased in 1995 to 1.1% and in 1996 to 0.9%. These results should not be considered an end point, but only a stimulus to improve them further using a CQI framework. © 1998 Elsevier Science B.V. All rights reserved.

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### 1. Introduction

The principle upon which day surgery should be based is the concept of high quality care. It is unacceptable that a large number of patients can be treated efficiently and cost effectively, if the quality of the service does not match or surpass that of more formal inpatient care. Continuous quality assessment and improvement (CQI) programs in ambulatory surgery are geared towards maintaining a high quality of patient care and services and ensuring efficiency in the use of those services and resources. This concept is not exclusive to ambulatory surgery. In fact, the medical field has derived the basic tenets of quality improvement from industry: customer satisfaction, quality control of goods and services and continuous assessment of the process [1,2].

The CQI paradigm incorporates three basic components in its evaluation phase: structure, process and outcome [3]. Each area may confer specific potential benefits to both the day to day running of any day surgical facility, and to the maintenance of high standards of patient care.

### 2. Material and methods

A CQI programme is based on five points:

1. productive work is made through processes;
2. quality defects result in process problems;
3. quality improvement requires total employee involvement;
4. quality is customer focused;
5. CQI is undertaken by means of scientific and statistical analysis.

Different steps in the CQI process have been described. These steps are connected in two blocks.

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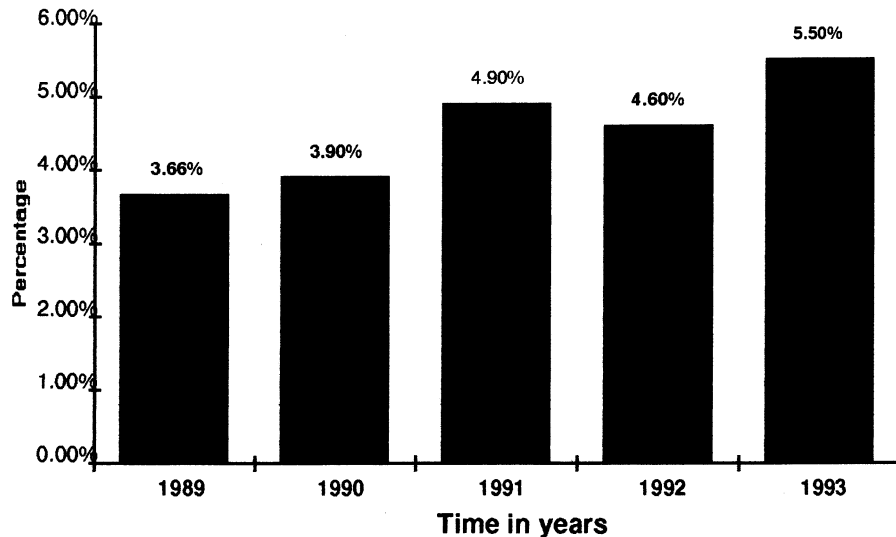


Fig. 1. Evolution of non-attending patients in ambulatory surgery.

The first block consists of analysing the actual situation:

- identify a process to improve;
- organise a team to work on the problem—this team should include physicians, (anaesthesiologists and surgeons), nurses, hospital employees and managers, and all members must be involved in the decision making process;
- clarify current knowledge of the process, identify data to be collected and collect data, including the potential contribution of the variable causes of the problem;
- understand the causes of process variation in analysing and delineating the potential causes of the problem;
- select the process improvement.

The second block is an active situation:

1. plan improvement after analysis of the most influential causes needing improvement;
2. do improvement carrying out quality action;
3. check data for process improvement;
4. act to hold gain and continue improvement. To obtain an effective CQI process, it is mandatory to continue periodic monitoring.

From 1989 to 1993, it realised that the percentage of non-attending patients in our university hospital ambulatory department had increased from 3.66 to 5.5% (Fig. 1). A team, including one operating nurse, one anaesthesiologist, one surgeon, one hospital employee, and one administrator was organised. To understand the reasons for process variation different causes were identified: these were reducible causes, i.e. misunderstanding, fear of the operation or anaesthesia; and unreducible causes, i.e. intercurrent illness, social problems and other unknown causes.

Our knowledge of the process was clarified in 1993. Out of 1898 patients who underwent an ambulatory operation in our department there were 105 (5.5%) non-attending; these consisted of 52 patients who did not attend because of illness (2.7%), 21 because of misunderstanding (generally due to language problems, i.e. foreign workers) (1.1%), 17 who were afraid of surgery or of anaesthetic (0.9%), nine who did not attend because of social problems (0.5%) and in six cases, the cause of non-attendance was unknown (0.3%).

Considering the different causes of the process variation, particularly the reducible causes, namely fear and misunderstanding, better patient information was planned. The following action was to be taken:

1. written preoperative information would be distributed;
2. all patients would meet the surgeon and anaesthesiologist preoperatively;
3. a preoperative nursing assessment would be organised;
4. patients would be required to call the operating room the day before operation for final information;
5. all the patients would be telephoned after surgery by the nurses to evaluate the immediate postoperative results.

### 3. Results

The initial phase of our continuous quality improvement study ran for a period of 6 months. All patients requiring surgery under anesthesiologic survey were informed. During this time, 967 patients underwent day surgery in our unit. Of these patients 38 (3.9%) did not attend on the day of surgery. The different reasons for

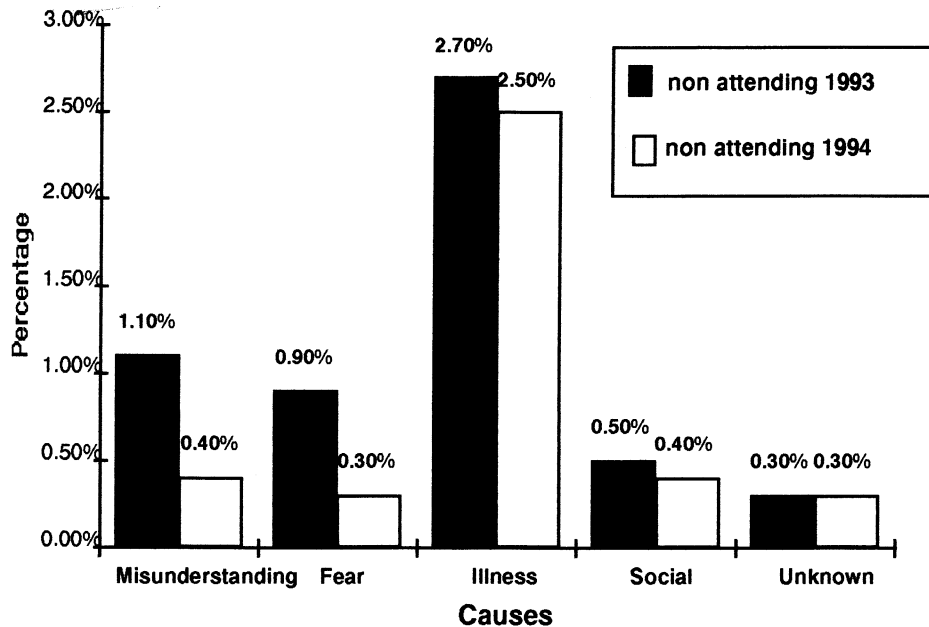


Fig. 2. Evolution of non-attending patients in ambulatory surgery causes.

non-attending were in 24 cases illness (2.5%), in four cases misunderstanding (0.4%), in three cases fear of surgery (0.3%), in four cases social problems (0.4%) and in four cases unknown (0.3%). When these results were compared with the results obtained in the preliminary study of the process in 1993, it was realised that the reducible causes had decreased drastically. In contrast, the unreducible causes were stable (Fig. 2).

In the second phase of our study all patients undergoing surgery were included in the informative procedure. The number of non-attending patients was 24 out of 2190 in 1995 (1.1%). In 1996, only 21 patients out of 2197 did not attend on the operative day (0.95%).

It is of interest to consider the time saved by the CQI procedure. If we consider that the average operative time in our unit is 78 min, we calculated that the non-attending cost in 1993 was  $105 \times 78 = 8190$  min.

In 1995, the time consummated by 24 non-attending patients was  $24 \times 78 = 1872$  min. The difference, 6318 min, might represent 81 operative procedures.

#### 4. Discussion

Traditional quality assurance QA implemented in the 1980s, focused largely on the performance of individual health care providers that was below accepted standards and that lead to adverse patient care outcomes. This resulted in activities designed to focus corrective measures only at individual problems, frequently taking action only to please outside inspection [4,5]. Quality assurance has been defined as 'the bad apple' philosophy. It was inevitably viewed as a punitive approach to retrospective events.

On the contrary, CQI focuses on the performance of the organisation within its operating system [6,7]. By analysing human performance in the context of the system in which patient care is provided, global assessment and recommendations for improvement can be made. It is estimated that 80–90% of adverse outcomes result from faulty systems, while only 10–20% actually result from human errors [8]. CQI recognises that the performance improvement cycle is connected by the actions of organisational leaders, managers, physicians, trustees and support staff who design, measure, assess and improve their work processes [9,10]. For this reason, it is important to select a good team to improve quality. One member from each staff group (nurses, surgeons, anaesthesiologists, medical employees, administrators) was included in our team. It may start its improvement effort at any point. The team chosen decided to modify an existing structure process, the non-attending patient, using the different steps of CQI. Hitchcock and Ogg [11] planned that the non-attending patient number should be as small as possible: less than 1% of cases booked should not attend. In their study 4.4% of booked patients did not attend. The author described that there was no relationship between the non-attending rate and the waiting time. The visit to the unit before the day of surgery was not a determinant and did not result in a lower non-attendance rate. Our study demonstrates clearly that there are two types of causes of non-attending patients: reducible causes (fear and misunderstanding) and unreducible causes (illness, social and unknown reasons). Unknown reasons included patients who disappeared from the hospital district.

The following corrective measures were successfully undertaken:

1. the staff would give better information to the patients;
2. to avoid any misunderstanding, translation would be involved if necessary;
3. the patient would have contact with all members of the surgical team, including the anaesthesiologist, surgeon and nurse;
4. the patient would visit the outpatient facility and theatre preoperatively.

Within 6 months, a drop in the incidence of non-attendance from 5.5 to 3.9% was observed.

The set standard of 1% non-attending patients was achieved in 1996 as described by Watson et al.[12].

Poor quality is costly. It has been demonstrated in industry that quality diminishes cost. There is no example in the medical field. This study clearly shows that CQI applied to non-attending patients in ambulatory surgery is time saving. In our study the time saved equated to the potential for 80 more operative procedures.

## 5. Conclusion:

CQI applied to non-attending patients permitted a reduction in the incidence from 5.5 to 0.95% in 3 years. These results should not be considered as the end point, but only as a stimulus to improve them still further under the framework of CQI.

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