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Factors Influencing Delay in the Operating Room: Prospective Study

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Abstract

Introduction: The intensity of the work and the diversity of the acts imposed, in the operating room, provided organization and complementarity of the different actors. The dysfunctions observed are the cause of delays, reports or additions to the operating program our study consisted in evaluating, within the our department of operating theaters, the deadlines of patients who were to be performed under general anesthesia in scheduled surgery, from their arrival in the operating room until the incision, and to identify the causes and possible consequences. ***Materials and Methods***: This is a prospective observational study carried out at HMIMV, between March 1, 2018 and April 1, 2018, ***Results:*** The median waiting time in the reception room was 42 minutes, and 65% of patients waited between 25 and 62 minutes the main causes of delay in the operating room were at 38% of cases, the unavailability of the anesthesiologist. In more than 22% of cases the non-availability of State Certified Nurse Anesthesiologist in 19% of cases the unavailability of the surgeon. We then find almost 5% of expectations due to equipment defective or missing. Some causes were not specified for nearly 3% and about 3% of cases the non-availability of the State-certified operating room nurse. It is in the sectors of orthopedics and digestive endoscopy that predominates expectation of surgeons and to a lesser extent that of anesthesiologist-resuscitator. However the unavailability of the anesthesiologist-resuscitator was predominant in visceral surgery and in Gynecology. ***Conclusion:*** Optimizing an operating theater means making it possible to operate on more patients, in different better safety conditions and with a level of quality and comfort for the patient satisfied.

Keywords: Delay, Operating room, Surgeons, Anesthesiologists.

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INTRODUCTION

The operating room is an essential element of the technical platform of a hospital, because of its high technicality, the financial investment it represents, the importance of the human resources that it mobilizes, and the security challenges that imposes. It is considered a service in its own right [1].

It consumes between 10 and 15% of a hospital's budget and corresponds to a cost of operation between 10 and 15 euros per minute [2].

The intensity of the work and the diversity of the acts imposed, in the operating room, provided organization and complementarity of the different actors.

The dysfunctions observed are the cause of delays, reports or additions to the operating program [3].

Our study consisted in evaluating, within the department of operating theaters of the Mohammed V Military Instruction Hospital in Rabat (HMIMV), the deadlines of patients who were to be performed under general anesthesia in scheduled surgery, from their arrival in the operating room until the incision, and to identify the causes and possible consequences.

MATERIALS AND METHODS

This is a prospective observational study carried out at HMIMV, between March 1, 2018 and April 1, 2018, with the aim of evaluating, in scheduled

surgery, the waiting time of patients operated on under general anesthesia, between arrival in the in reception room of the operating theater up to the incision.

We included in our study all patients over the age of 18 who underwent scheduled surgery in hospitalization or on ambulatory mode under general anesthesia; and we excluded from the study young patients < 18 years old, emergency surgeries, procedures performed under local anesthesia, locoregional anesthesia or sedation.

The collection sheet was completed by the anesthesiologist in the various rooms of the HMIMV operating theaters.

The data was entered and coded in Excel and then analyzed using the SPSS 17 software which consists of a global description of the population studied and different data.

RESULTS

The average age of our patients is 58 ± 18 years.Our series was characterized by a clear male predominance with a sex ratio of 2.23.Four hundred and seventy-six patients (> 18 years old) were operated under general anesthesia, in scheduled surgery, in the operating rooms of the (HMIMV) from March 1, 2018 on April 1, 2018 in Otolaryngology(ENT) (7.5%), neurosurgery (7.9%), urology (15.5%), visceral (22.6)%, orthopedics (13.05%), and gynecology (9.6%).

The median waiting time in the reception room was 42 minutes, and 65% of patients waited between 25 and 62 minutes.

We have 42 State-certified operating room nurse, 20 State Certified Nurse Anesthesiologist, 16 Caregiver, 12 anesthesiologist-resuscitator to provide anesthesia in the different rooms. Upon arrival in the room we observed various configurations of the presence of hospital personnel, the most representative being approximately 32% that of the State Certified Nurse Anesthesiologist. Accompanied by the Caregiver .Come next in almost equal percentage (28%), the State Certified Nurse Anesthesiologist accompanied by State-certified operating room nurse and Caregiver, and the anesthesiologist-resuscitator accompanied by the State Certified Nurse Anesthesiologist and the Caregiver (16%). These three configurations represent approximately 80% of the presences recorded when the patient enters the operating room. Anesthesiologist-resuscitator was present in 86% of cases, accompanied by an State-certified operating room nurse in 70%,an State Certified Nurse Anesthesiologist in 65%, an Caregiver in 10%. The surgeon (and/or intern in surgery) was present in 6%.

At induction anesthesiologist-resuscitator accompanied by State Certified Nurse Anesthesiologist was present in 100% of inductions. The surgeon and \ or intern was present in 79% of cases and State-certified operating room nurse in 80% of cases. And Caregiver was present in 30% of cases.

At installation, all categories of personnel were present in 25%. The anesthesiologist-resuscitator is accompanied by the surgical intern; the State Certified Nurse Anesthesiologist, State-certified operating room nurse and Caregiver were present in 10% of cases.

The others configurations were very disparate and numerous. State Certified Nurse Anesthesiologist was present in 100% of cases, accompanied by State-certified operating room nurse in nearly 92%, Surgeon or Resident in surgery in 89%, Caregiver at 71% and anesthesiologist in nearly 62% of cases.

The main causes were at 38% of cases, was the unavailability of the anesthesiologist. In more than 22% of cases the non-availability of IADE in 19% of cases The unavailability of the surgeon We then find almost 5% of expectations due to equipment defective or missing. Some causes were not specified for nearly 3% and about 3% of cases the non- availability of the State-certified operating room nurse.

It is in the sectors of orthopedics and digestive endoscopy that predominates expectation of surgeons and to a lesser extent that of anesthesiologist-resuscitator. However the unavailability of the anesthesiologist-resuscitator was predominant in visceral surgery and in Gynecology.

DISCUSSION

Operating room delays can be defined as wait times long due to system in efficiency. If an intervention is supposed to start at 8 a.m. but it begins at 8:30 a.m., this equates to a 30-minute delay [4] .Starting late means considerable waiting time for patients, the personnel and a waste of resources [5].

A wide range of publications highlights the availability of surgeons and anesthesiologists, as well, the patient's lack of preparation as the main cause of the delay in the start of the room operation [6-13].

In addition to the three causes, Edward [14] adds a communication gap between operating room team, equipment problems, delays supplies and a lack of timely room preparation of operations. According to Caitlin and Vaughan [15] in low-income countries and intermediary-income, a power failure as well as the oxygen supply could also cause a delay.

In a prospective observational study carried out at the University Hospital of POITIERS There is an average waiting time of 32 minutes in all surgical specialties between the time of arrival in the theater reception room and the intervention room.

The main cause of waiting was the unavailability of the surgeon in more of 52% of expectations and that of the resuscitator anesthesiologist in more than 15%, particularly in visceral surgery and neurosurgery. In this study, it is in these specialties that we find the largest number of patients operated in scheduled surgery under general anesthesia [16].

In another study conducted at a community teaching hospital in 200 beds with 7 operating rooms The causes of delays identified by the team members were essential metric measurements during the study period the main cause of delay was the unavailability of surgeons in 50% of cases, and that of anesthesia in 7% of cases, Late anesthesia in 4% of cases, other examinations necessary in 10%of cases, poor documentation in 5% of cases, emergency in 7% of cases, position delay 7%, Equipment availability 4% of cases, patient delay in 3% of cases, and pharmacy delay in 3% of cases [17].

The delay in the start time increases the hours of use of the theater and therefore contributes to the low productivity and the decrease in the revenue generation and timely service delivery to customers [18].

Starting the first case of the day in the operating room late can be one of the factors that lead to an unsafe working environment and increases risk of healthcare team errors, staff stress and the patient, as well as the unforeseen cancellation of patients on the theater [19].

However, not all delays are associated with a negative impact; for example, ensuring that the patient is properly prepared may take time, but ultimately yields the best outcome for the patient [7].

According to ASA [20], an anesthesiologist needs at least 30 minutes of preparation before proceeding with an induction of anesthesia and if he arrives at 7:45 a.m., he will be possible to start at 8:15 without delay. According to the literature, a surgeon should arrive 15 minutes before the introduction time to participate in the check-list of surgical safety with the rest of the team [4, 18].

Our study has several limitations, first of all the duration limited to 01 month of follow-up, the lack of distinction between outpatient and hospitalization for patients operated under general anesthesia in scheduled surgery, and the stretching of outpatients is only done by the team of stretcher-bearers than for the first patients. The following patients are stretchers by the staff (State certified nurse and Caregiver) of the outpatient department.

CONCLUSION

Optimizing an operating theater means making it possible to operate on more patients, in different better safety conditions and with a level of quality and comfort for the patient satisfied.

In recent years, numerous regulatory texts, recommendations international standards of best practices and benchmarks have been developed concerning the organization of the operating room. However, its operation poses a daily problem. The malfunctions observed are the due to: delays, postponements or additions to the operating program [3].

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