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The impact of triage unit to improve patient satisfaction in the Emergency Department Experience of the national institute of oncology Rabat

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ABSTRACT

Background: The purpose of this study is to evaluate patient satisfaction before and after the creation of the triage unit (TU) as a tool for organizing the emergency department (ED) at the National Institute of Oncology in Rabat. The absence of TUs at EDs has an impact on the quality of care offered, longer waiting times, and the optimal use of resources. This situation leads to conflicts between patients and healthcare staff. Resolving this situation of dissatisfaction was of paramount importance to ED care staff.

Methods: In this cross-sectional study, the sample selected was 100 patients admitted to EDs. The study lasted five months (August 2024 to December 2024). The study site is

INO. The research was conducted in two phases. The first concerns the implementation of a quality cycle continuous (QCC) to solve the TU problem. Secondly, we developed a patient satisfaction survey in the ED.

Results: After the creation of TU, the average satisfaction score was 80.2 (range 54-95). The dimension with the highest score was Waiting times (89%), followed by the quality of care provided by a medical team (doctor and nurse) (89%) and quality of symptom management (pain and other symptoms) (82%). waiting times for discharge formalities 82%. Overall satisfaction was mostly very good (96, 50.8%).

Conclusion: TU is an essential part of the ED, helping to increase the satisfaction of hospital users. It also helps to reduce waiting times and congestion, which has a positive impact on patient satisfaction.

Keywords: quality management, health care, patient satisfaction, emergency department.

1. Introduction

Patient satisfaction in the emergency department depends on several factors including the degree of the patient's positive feeling of satisfaction (1). Quality of service, interpersonal behavior, communication (2), financial aspects, and waiting time (3). Accessibility to health care services, convenience, availability of care, and condition of facilities during their health care services (4). In Morocco, as in other countries, patient satisfaction with emergency care is an important issue in the care process and plays a crucial role in measuring the effectiveness of quality healthcare provision (5). According to a patient satisfaction survey conducted in the ED.

over one month. The results showed that patient overcrowding and the lack of a reception and triage unit were the department's major problems. Overcrowding diverts a significant amount of staff time and energy (6). It has an impact on the quality of care offered, lengthening waiting times, and the optimal use of resources (7). It also leads to conflicts between patients and healthcare staff (8). Overcrowding can be caused by several factors, such as a shortage of healthcare staff, a lack of reception facilities, and the lack of a TU who can ensure the rapid and safe assessment of all patients to identify urgent and non-urgent patients (9). This avoids ED overcrowding, reduces morbidity and mortality rates, and enables resources to be used efficiently (10).

2. Methods

The triage unit in the emergency department is essential for better patient healthcare. The triage unit makes it possible to improve patient orientation, reduce waiting times for patients in emergency departments, and reduce morbidity and mortality in emergency departments. As a result, the triage unit leads to improved satisfaction on the part of the patient's care staff and those accompanying the patient. However, in developing countries such as Morocco, the lack of medical staff (doctors and nurses) in emergency departments makes it difficult, if not impossible, to have triage units in emergency departments. As a result, anarchy at work in emergency departments and the lack of patient satisfaction in emergency departments remain the major problems in Moroccan emergency departments.

In this descriptive cross-sectional study, the sample selected was 200 patients admitted to the ED. The duration of the study was four months (August 2024 to December 2024). The study site is INO. The research will be conducted in two phases. The first stage involved setting up a QCC, with a volunteer team of six nurses, three doctors, and a team manager working together to create the circle. The appointment of a rapporteur and monitor, and the establishment of team values. Meetings culminating in minutes were scheduled for consultation, progress, and continuity of the circle. Ten meetings were organized, during which we succeeded in identifying the problem through brainstorming, followed by an analysis of the problem (1st/2nd level process flowchart, Ishikawa diagram). We then drew up a data collection and hypothesis verification plan, followed by the selection of results and the implementation of a CCQ monitoring plan.

Secondly, we developed an ED patient satisfaction survey. By following patients' journeys within the ED, we were able to explore the expectations of patients and their careers. We identified 13 factors that could have an impact on the perception of the service provided. The main criticisms concern Communication and access to information; Waiting times;

Premises (accessibility, state of the reception room, etc.). For each patient, a validated questionnaire was completed and collected by practical non-random sampling in two phases: before the introduction of QCC and after the QCC MEP.

3. Results

Table 1 shows the socio-demographic characteristics of ED patients who took part in the before and after satisfaction surveys. The age group most affected is between 40 and 60

years. Women represent 77% of the sample. The illiteracy rate is 43% of the population. 58 % of patients come from outside the city, 31% from rural areas. 69% of participants were unemployed. 88 % of patients' main carers are family members. Regarding patients' medical characteristics, 32% of patients had gynecological cancer, 28% had digestive cancer and 21% had lung cancer. 30% of patients in the study were receiving chemotherapy or hormone therapy, 38% surgical treatment, and 32% radiotherapy. In terms of cancer stage, 62% of participants in the study had localized cancer, while 38% had metastatic cancer. In terms of the reasons for consulting the ED, 43% of participants consulted for pain, 26% for digestive problems, 11% for respiratory problems, and 10% for hemodynamic problems.

Table 1. Socio-demographic and medical characteristics of the sample.

Variables		**Frequency**	**Percentage**
Gender	Man	23	23
	Woman	77	77
Age (Years)	20-40	12	12
	40-60	66	66
	60-80	21	21
Study level	Illiterate	43	43
	Koranic	13	13
	Primary	26	26
	Secondary	10	16
	University	8	2
Employment situation	Not employed	79	79
	Employed	21	13
Place of residence	Urban	79	73
	Rural	31	21
City of residence	Rabat and surroundings	42	42
	Other	58	58
Cancer location	Gyneco-mammary	32	32
	Lungs	21	21
	Digestive	28	28
	Urologic	14	4
	ORL	5	5
STADE	Localized	62	79
	Metastatic	38	21
Last received treatment	Chemotherapy	30	90
	Radiotherapy	32	2
	Surgery	38	8
Consultation reason	Digestive disorders	26	17
	Pain	43	43
	Respiratory disorders	11	4
	Hemodynamic disorders	10	8
	Anemia	8	26

	hydro electrolytic disorders	2	2
Assistant to ED	Family member	88	95
	Friend	7	3
	Association member	4	1
	Other	1	1

The ED medical staff chose to resolve the problems that were limiting the smooth running of the department and making ED patients dissatisfied by setting up a QCC. By adopting the Deming wheel or PDCA cycle, which is a continuous improvement tool consisting of four stages: Plan, Do, Check, and Act. We call it a "wheel" to emphasize the recursive nature of the process (table 2).

Table 2. PDCA = plan, do, check, and act, QCC = quality control circle.

	Steps of the problem-solving cycle	**Problem-solving cycle tools**
PLAN	Step	Brainstorming
	Problem identification	Prioritization matrix and criteria
		Choice of a priority problem
		Flow chart
		Statistical tools
	Step	Questions series
	Problem definition	Flow chart
		AQ chronicle
DO	Step	Flow chart
	Selecting team members	AQ chronicle
	Step	Process diagram
	Problem analysis	Cause-effect diagram
		Questionnaires
		Graphics
CHECK	Step	Brainstorming
	Solutions identification	Matrix criteria
		Benchmarking
ACT	Step	Gantt diagram
	Solution implementation and follow-up	

To get things off to a good start, we agreed to hold weekly meetings, respecting the charter of a good team, which is to arrive at meetings on time, be at ease, listen to and respect the contributions made by others, make constructive comments, and communicate openly and honestly. The research took five months to complete, from august 2024 to December 2024. The research took five months to complete from august 2024 to December 2024.

The team then prepared a detailed work plan, drew up an implementation plan, and set the work standards for the team, which consisted of appointing the person responsible for each stage, drawing up the first-level and second-level diagrams, and carrying out the activities in accordance with the plan (Fig1). During this QCC, the priority problem identified by the quality team was the lack of TU at the EDs (Fig. 2). This contributes significantly to the disorganization of work and congestion in the department, and consequently to the lack of satisfaction of patients and care staff in the EDs. 200 patients consulted at the ED were questioned about their satisfaction before the TU MEP.

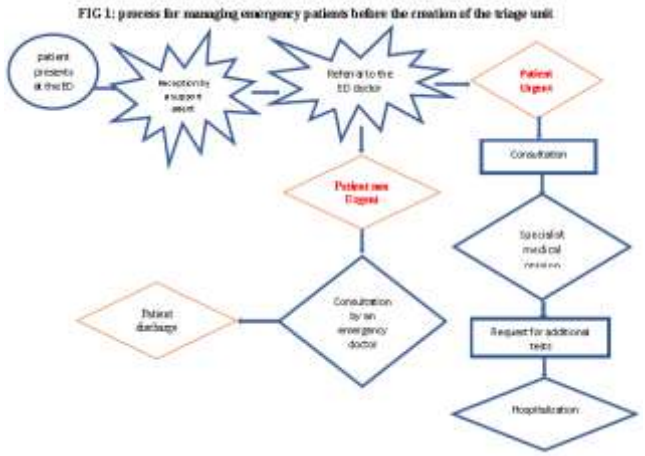
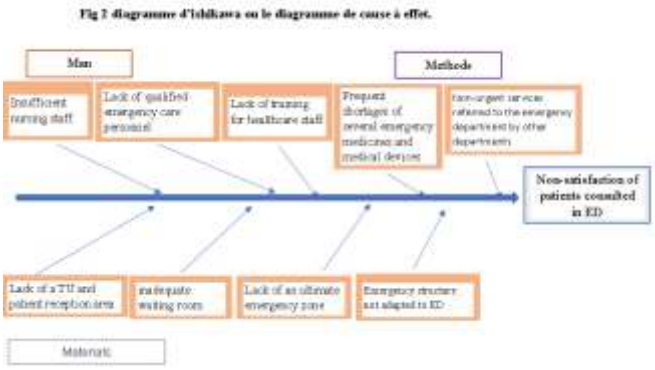


Fig. 1 shows the absence of patient TU in the ED patient management process. This leads to a large flow of patients, as a support worker who has no training in either patient reception or triage of emergency patients carries out patient reception. His role is limited to registering patients. This leads to overcrowding in the ED and a waiting time that exceeds 80 minutes on average. As a result, patients are not satisfied.



The Ishikawa diagram (Figure 2), shows the relationships between the causes of dissatisfaction and their effects. By brainstorming with the QCC team, we came up with ten causes that have a more or less direct impact on patient dissatisfaction with EDs. After ranking the causes according to the 5 M's, the quality team drew up a matrix prioritizing the causes of patient dissatisfaction, which we are working on according to three criteria: urgency, impact, and vulnerability. Priority is given to the cause that has the greatest influence on patient dissatisfaction. This ranking enables us to choose the absence of TU as the main cause so that the quality team can prioritize the actions it needs to take to resolve this problem.

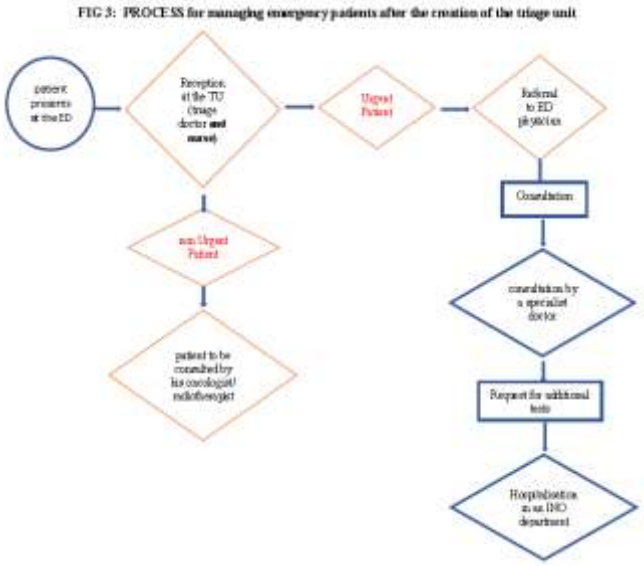


Figure 3 shows the new process for managing ED patients after the introduction of QCC. We recorded an absorption of congestion at the ED as well as a reduction in waiting time from 80 minutes to less than 20 minutes (see Table 3). As a result, we observed a high level of patient satisfaction.

The triage unit at the ED entry was established as a result of the quality circle's finding. A doctor and a triage nurse handle this department. Choosing urgent patients, registering them via computer, and keeping an eye on patients in the waiting a rea. Due to this, the ED's overpopulation has been able to be accommodated (Table 3).

Table 3. The number of consultations and waiting time before and after the creation of the triage unit.

	The number of consultations before the creation of the triage unit	**The number of consultations after the creation of the triage unit**	**Waiting time before the creation of the triage unit (min)**	**Waiting time after the creation of the triage unit (min)**
Median	105	38	80	19
Minimum	53	15	26	4
Maximum	157	73	212	98

Our study has made it possible for us to lessen overcrowding by roughly two-thirds.

About waiting times, this method has allowed for a decrease from an average of 80 minutes to 19 minutes.

Table 4. The satisfaction rate of patients admitted to oncology EDs before and after the creation of TU.

Dimension	Satisfaction rate before	Satisfaction rate after
The quality of care provided by a medical team (doctor and nurse)	39%	88% 2
Emergency transport provided by the hospital	81%	54%
Informing the patient in the event of a long wait	53%	86%
Waiting times	23%	89%
the comfort and quality of the waiting room	30%	68%
Clarity of medical information during the consultation	61%	72%
Information provided on your state of health	30%	87% 3
the attentiveness of the medical and paramedical staff	72%	90
respect for professional confidentiality	89%	95% 1
Quality of symptom management (pain and other symptoms)	16%	82%
Nursing care over time	75%	87%
What do you think of the waiting times for discharge formalities?	25%	82%
clear instructions (treatment, care, diet, etc.)	76%	87%
your general satisfaction of your care at the ED	46%	83%

Table 4 shows the satisfaction rate of patients admitted to the oncology ED before and after the creation of TU. A significant reduction in waiting time for a medical consultation, from 23% before the creation of TU to 89% after the creation of TU. In terms of the quality of reception, our results show that 88% of patients surveyed were satisfied with the reception they received. 100 patients were included in this study before and after the creation of TU. The average overall satisfaction score was 80.2 (range 54-95). The dimension with the highest score was Waiting times (89%), followed by the quality of care provided by a medical team (doctor and nurse) (89%), followed by Quality of symptom management (pain and other symptoms) (82%). Waiting times for discharge formalities 82%. Overall satisfaction was mostly very good (96, 50.8%). Patients who had been admitted to ED before the creation of TU and those who had completed the questionnaire after the creation of TU were significantly more satisfied ($p=0.004$ and $p<0.000$, respectively).

4. Discussion

The creation of TU has increased ED patient satisfaction. It has helped to reduce congestion and waiting times for ED patients. This corroborates with previous research. Bouaiti et al (2016) in their study of a sample of 300 patients seen at the ED showed that the dimension of satisfaction was linked to waiting time, good triage conditions, the quality of instructions given by the care team and confidentiality during treatment. Pines et al (2007) have shown in their studies that patients presenting to EDs suffer from long waiting times and overcrowding (13). Good triage ensures that all patients are assessed quickly and safely to identify those requiring emergency care, thus avoiding overcrowding in A&E departments (14). Reduce morbidity and mortality in EDs, and ensure optimal use of resources (15). Similarly, Aaronson, et al (2018) determined that ED waiting time affects patient satisfaction. These researchers concluded that, as patients' waiting time increased, their satisfaction scores decreased, and that there was a significant difference between them. Bulut and Akkaya (2012) found a significant correlation between patients' satisfaction with triage time and their general satisfaction (17). In this sense, triage is becoming imperative in emergency departments with a high flow of ED patients (18). Triage reduces the number of patients who return and wait in the ED for hours. Among the results obtained, our study showed that TU improved the quality of care provided to patients and consequently helped to increase patient satisfaction. This is in line with the literature. Triage

provides the care desired by both patients and healthcare professionals and, as a result, ensures a high level of quality and satisfaction (19).

Other researchers cooperate with the idea that patient satisfaction in emergency departments depends on waiting time in addition to the quality of nursing care provided (20). Messina et al, (2018) confirms that the level of patient satisfaction increases is correlated with the reduction in waiting time and the existence of a good nursing service (21).

5. Conclusion

TU is an essential part of the ED, helping to increase the satisfaction of hospital users. It also helps to reduce waiting times and congestion, which has a positive impact on patient satisfaction. Ainsi l'évaluation de la perception des patients vis-à-vis les soins prodigués permet de chercher en continuation à améliorer la qualité des prestations offertes afin de répondre a leurs besoins et satisfaire leurs attentes.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Conflict of Interest: The authors have no conflicts of interest to declare.

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7. Contributors

Fares Rachid contributed to the writing of this quality improvement report. Younes Azemmour, Beddaa Hassan, and Rouani Abdeljabbar both contributed to the data collection of this study. Nmari Anass and chemlal hamid were involved in editing the report for clarity and details. Elkhalloufi Fahd submitted the report and took responsibility for the overall content.

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