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The Reality and Prospects of Caring for Patients in Medical and Surgical Emergency Department

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Abstract

Hospital emergencies, which take care of patients who cannot be handled “on an outpatient basis”. This patient care is the most sensitive indicator of the health system's effectiveness. A comprehensive continuous improvement approach must be established, the first step of which is to identify the current state of the emergency department's operations. The objective is to analyze the activity of the Medical and Surgical Emergency Department (MSED), namely the hospitalization unit, and identify gaps. Conduct a quantitative assessment of the MSED hospitalization unit's activities in 2022 in order to understand its operations. The general organization of emergency services is known and described by regulations. At MSED, the work is divided according to distinct functional units (FU). Caregivers are divided into alternating teams, providing care all year round. During 2022, the number of hospitalized patients was 23,435. The average daily admission was 217±20 patients, the average length of stay was 3.82±7.01 days. The average age was 38.12±26.42 years. These patients have multiple chronic diseases, the reason for admission is mainly ischemic or hemorrhagic stroke, respiratory distress and pulmonary emboli. The care pathway is considered long due to, on the one hand, the patients' age and polypathologies, and on the other hand organizational factors. The analysis of the care pathway and duration at the MSED showed interest in creating tools to improve quality of care and quality of work life.

Keywords
Organization, Emergency Department, Optimization. Care Pathway.

1. Introduction
The emergency department (ED) is often the first point of contact for patients entering the hospital. It is a critical service that must manage a high and unpredictable flow of patients with a variety of conditions. Thus, quality of care relies on optimizing patient reception and management in the ED. The phenomenon of "long-stay hospitalizations" is one of the main problems encountered in emergency departments. Many patients remain "stuck" in the ED, sometimes for several days, waiting for a bed due to the lack of available spots in hospitalization units.

These prolonged hospitalizations, also known as "bedblockers," have many negative effects. The patient's comfort is first affected. Remaining on a stretcher in a noisy intensive care area without privacy delays his/her recovery.

Subsequently, this situation severely hinders the organization and fluidity of the emergency department. Due to the high number of patients waiting for beds in boxes and on stretchers, it is difficult to accommodate new arrivals. This leads to longer waiting times and an additional workload for staff. ED healthcare workers suffer from stress and professional burnout due to this situation.

1.1 Objectives

In order to improve patient care performance and the health status of healthcare professionals; the objectives are: to analyze the Medical and Surgical Emergency Department's activity (MSED), especially the hospitalization unit, and identify the identified gaps in order to remedy them

2. Literature Review

Emergency services face a myriad of challenges, including overcrowding, excessive waiting times, and unpredictable demand, leading to implications for the quality of care and patient satisfaction (Smith et al., 2022). In this complex context, the modeling of emergency services emerges as a crucial solution, providing an analytical framework to understand and address these challenges (Jones et al., 2021). By simulating patient flows, modeling enables the optimization of the allocation of medical resources, thereby enhancing the operational efficiency of emergency services (Brown et al., 2020). More precise triage strategies can be developed, offering a faster response to critical cases.

This analytical approach also plays a crucial role in optimal bed management, minimizing periods of excessive occupancy and ensuring effective utilization of hospital resources (Taylor et al., 2019). Modeling is also used to anticipate future demand by integrating predictive elements into analyses (Miller et al., 2018). These tools contribute to rethinking the management strategies of emergency services to effectively meet the healthcare needs of the population.

However, the issue of patient flow in emergency services persists due to the complexity of medical conditions, overcrowding, and unpredictable demand (Johnson et al., 2020). These problems result in prolonged waiting times, delays in care, and a saturation of admission capacities, directly contributing to a significant increase in the length of hospitalization for emergency patients.

Overcrowding exerts increased pressure on available resources, delaying medical assessments, diagnostics, and treatments (Brown et al., 2019). A domino effect is created, where emergency department patients experience extended stays due to congestion and difficulties in freeing up hospital beds. This phenomenon is often exacerbated by the need to coordinate care with other healthcare services.

Modeling patient flows in emergency services proves to be a crucial tool in addressing these persistent challenges. By anticipating demand peaks, optimizing triage processes, and improving coordination with other services, modeling contributes to reducing the length of hospitalization for patients (Miller et al., 2021). Proactive management strategies can be implemented to better distribute workloads, minimize waiting times, and ensure a rapid and effective response. Studies, such as those conducted by Johnson et al. (2021), have emphasized the positive impact of modeling patient flows on reducing waiting times and hospitalization length. The integration of advanced technologies, such as automated triage systems and real-time tracking tools, can also contribute to more effective management of patient flows in emergency services (Smith et al., 2020).

In conclusion, while modeling patient flows in emergency services offers promising solutions to improve operational efficiency, challenges persist. The ongoing integration of these innovative approaches, coupled with inter-service coordination, remains essential to provide higher quality care and address the healthcare needs of the population.

3. Methods

In order to understand the activity of the MSED hospitalization unit, a quantitative assessment of this unit's activity was carried out during the year 2022.

4. Data Collection

The database of hospitalized patients was provided by the admission office. This database was analyzed using Excel

5. Results and Discussion

5.1 Description of Medical and Surgical Emergency Department (MSED)

In order to facilitate the understanding of the care process by different actors, a schematic description of the MSED's operation is provided by regulatory texts.

The MSED is composed of three separate but interrelated parts that operate 24 hours a day. Practitioners and paramedical and technical staff are responsible for these activities (reception, hospitalization, and technical facilities). The medical staff consists of permanent and non-permanent personnel. The latter is the medical staff from other departments but provides on-call duties at the MSED.

The paramedical staff represents almost half of the total personnel, while doctors represent less than 10% (Figure 1).

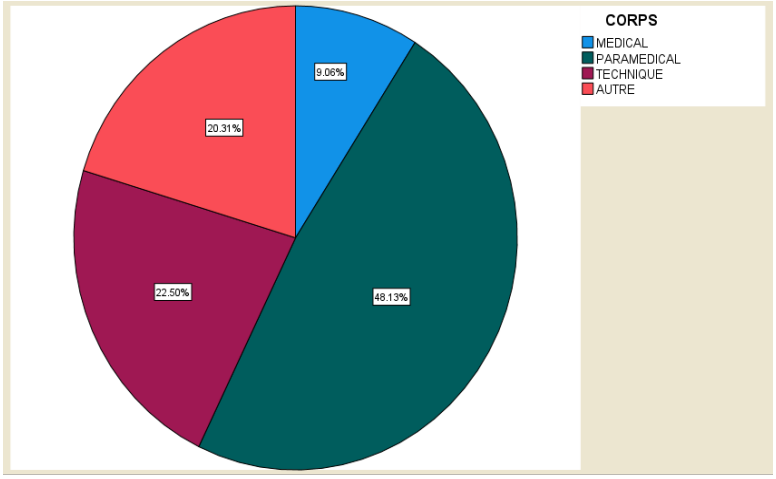

Figure 1. Allocation of SUMC personnel by rank

At the reception stage, several possibilities present themselves:

- The patient is not declared urgent; he is then referred for a later consultation.
- The diagnosis is established; the urgent patient falls exclusively under the responsibility of a specialty, he is taken care of by the on-call team of that specialty.
- The diagnosis cannot be established: the patient is admitted for medico-surgical observation within the hospitalization sector of the emergency care unit. After observation and establishment of the diagnosis, the patient can be treated on site, transferred to the relevant department, or discharged home.

This observation must be brief in order to maintain the reception capacity of this unit. Several factors can influence the length of observation and thus the duration of hospitalization in the MSED**.**

5.2 Characteristics of patients hospitalized in the EMCU during the year 2022

- During the year 2022, the number of hospitalized patients was 23,435, with 9,135 patients experiencing prolonged hospitalizations (Figure 2).

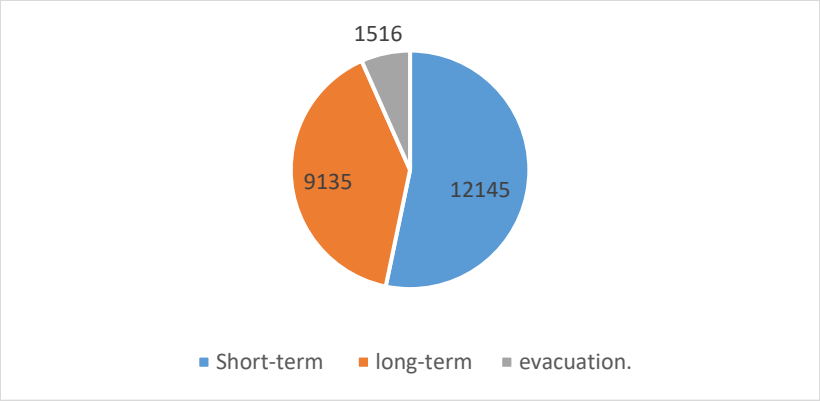

Figure 2. The distribution of hospitalized patients based on the type of hospitalization at MSED during the year 2022

- The average age of patients hospitalized for a long duration at MSED during this year is 38.12±26.42 years, with patients in the last quartile being aged ≥ 60 years (Figure 3).
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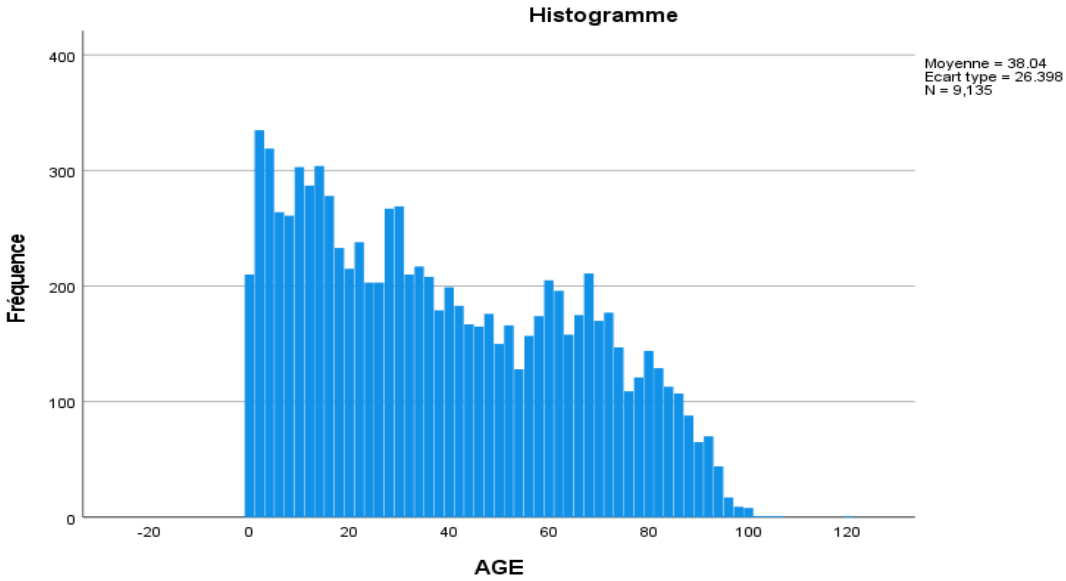

Figure 3. The age of patients hospitalized for a long duration at MSED during the year 2022

- The average daily admission is 217±20 patients, with an average length of stay of 3.82±7.01 days. This duration varies by gender and age, being 4,05 ± 5,71 days for women and 4,03 ± 7,72 days for men, while it is 3,41 ± 5,74 days for girls and 3,06 ± 7,08 days for boys.

Table 1. The length of stay according to the gender and age of long-term hospitalized patients at MSED during the year 2022

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
HOMME	3916	4.03	7.720	.123	3.79	4.27
FEMME	2256	4.05	5.710	.120	3.82	4.29
GARCON	1508	3.06	7.088	.183	2.70	3.42
FILLE	700	3.41	5.736	.217	2.99	3.84
Total	8417	3.82	7.007	.076	3.67	3.97

These patients hospitalized for a long duration at MSED have multiple chronic illnesses (Table 2), and the main reasons for admission are primarily ischemic or hemorrhagic strokes, respiratory distress, and pulmonary embolisms. Additionally, for elderly individuals, alterations in consciousness and general condition are common

5.3 Proposed Improvements

Patients admitted to the MSED hospitalization unit have a lengthy care journey due, on one hand, to the age and severity of the patients' illnesses, and on the other hand, to organizational factors and working conditions (staffing and lack of equipment). Optimizing hospitalization processes would therefore help streamline the patient's journey the emergency department and improve conditions for both caregivers and patients

6. Conclusion

This saturation of emergency services contributes to user dissatisfaction. Endless waiting times, dehumanized care... The lived experience degrades the image of public service in the eyes of patients.

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Biographies

Benaicha Samia is an occupational physician researcher. She began her career as an occupational physician in a University Hospital Center in 2012 after completing her medical studies and undergoing specialized training in occupational medicine. She became interested in psychosocial risks among hospital workers during this period, and her end-of-study thesis focuses on "determining factors of psychosocial risks among caregivers". In 2015, Dr Samia Benaicha was hired as a medical researcher at the Faculty of Medicine of the University of Batna. She participated in several epidemiological studies on the subject, including stress, professional burnout and workplace violence. The findings from their research provided concrete recommendations to improve occupational health among hospital

employees. Dr Samia Benaicha is currently working on her PhD in occupational health and safety on work organization and psychosocial risks in healthcare settings**.**

Benhassine Wissal is MD, PhD and Professor in Occupational Medicine; she graduated from universities of Constantine and Batna 2. She is ergonomic graduated from university of Tlemcen, Algeria. She is a teacher-researcher at the Faculty of Medicine of Batna where she contributes to the training of medical students. She trains specialist doctors in Occupational Medicine. She is the head doctor of the occupational medicine department at the university hospital center of Batna Algeria where she set up an occupational pathology unit and installed a occupational mental health consultation. She conducts research in the field of mental health at work, the organization of work in healthcare structures and emergency services, the diagnosis and monitoring of work-related musculoskeletal disorders, mainly back pain. She is an expert doctor for the social insurance funds of three Wilayas. Currently, she is working on a research project on the work organization of Emergency Services and its impact on employee well-being and patient safety.

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