

## Factors Affecting Inappropriate Hospital Patient Stay in the General Surgical Units at Mansoura University Hospital, Egypt

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### Abstract:

Reduction of the inappropriate hospital patient stay for hospitals has been an important issue for healthcare policy-makers and practitioners. Understanding factors influencing the likelihood of inappropriate hospital patient stay is critical in developing healthcare policy for reducing inappropriate hospital utilization. Hence, the present study aims to determine factors of inappropriate hospital patient stay in the general surgical units. Design: Descriptive study design was used in the present study. Methods: The study is conducted in four general surgical inpatient units at Mansoura University Hospital. The study sample consisted of 168 patients and their records who were admitted to the selected setting throughout the period of study. The data will be collected by using two tools namely; Appropriateness Evaluation Protocol (AEP) Form and Inappropriate Evaluation Form. Results: The rate of inappropriateness of hospital patient stay is higher than appropriate patient stay in surgical units. Premature patient admission in the surgical units for pre-operative, delay in surgical decisions for surgical patients and inadequate outpatient diagnostic approach for postoperative patients are the most factors lead to inappropriate patient stay. Conclusions: A major findings concluded inappropriate use of hospital stay during pre-operative and post-operative care affects the efficiency of bed utilization.

**Key words:** Length-Of-Stay, Inappropriateness Hospital Stay, Appropriateness Hospital Stay, Unnecessary Hospitalization, Appropriate Evaluation Protocol (AEP).

### 1. Introduction

Hospital services as the most expensive component of modern health care systems are confronted with serious issues and comprise approximately half of the health care expenditures in most developed countries(1). Thus improving the efficiency of hospital care services by cost reduction and using the capacity of existing healthcare facilities as optimally as possible seems to be necessary. Appropriate stay which is considered to be up to typical, valuable, efficient, and customized to the patients' actual needs would improve hospital productivity, reduce waiting lists, and satisfy financial constraints without compromising the quality of care(2,3).

Determining the number of beds needed for a ward or a hospital is a complex problem because there are many kinds of hospital beds within each length-of-stay category and several specialties each with its own patient management profile. It raises three types of problems. First, a good compromise must be found in the setting up of an operational hospital department, between the number of patients transferred because of a full department and the number of unoccupied beds. Second, changes in needs must be anticipated. Third, evidence that admissions are appropriate must be obtained or at least an evaluation of the rate of inappropriate stays must be performed (4).

Reduction of the inappropriate hospital patient stay for hospitals has been an important issue for healthcare policy-makers and practitioners (5). In many other economically developed countries, the average length of stay of hospital patients has been decreasing for decades because they are following an international trend of continuing reductions in length of stay (6). Inappropriate hospital patient stay is defined as a patient day of stay that does not require continuous and active medical, nursing or paramedical treatment provided by hospital services (1). Inappropriate hospitalization days are recognized as an important indication of the misuse of healthcare services and indicates inefficient utilization of hospital resources (7,8).

Inappropriate hospital patient stay was influenced by various patient and clinical parameters such characteristics

included patients' gender, age, primary disease, clinical specialty, type of emergency or planned admission, day of the week of admission, admission number, distance from the hospital to patient's home, length of stay, bed occupancy level, etc. Surgical patients had more inappropriate hospital stays and length of stay was positively related to the inappropriate number of days of hospitalization (5,9).

The increasing demand for hospital care and concern regarding the quality of the services provided justify improving hospital efficiency by determining what constitutes inappropriate use of hospitalization and its possible correction. To make this assessment, the Appropriate Evaluation Protocol (AEP) has been developed to measure the appropriateness of hospital stays (10).

Appropriateness Evaluation Protocol (AEP) has been used as an objective explicit tool to promote efficient resource utilization in hospitals since mid-1990s (5). The AEP identifies days of unnecessary hospital stay based on the absence of medical or nursing care, or based on the patient's clinical condition justifying hospitalization on a specific day. The AEP has had various applications, usually corresponding to appropriateness studies of specific clinical services such as emergency, medical services, or surgery (11).

Appropriateness Evaluation Protocol was designed to determine the percentage of inappropriate utilization of hospitalization services (12,13). The information provided by the instrument allows establishing the necessary actions focused on correcting the identified organizational problems, which can aid decision-makers in improving hospitalization services. The AEP has been utilized to determine the motives for which hospital admissions and identifying operational problems in the medical care process and permits evaluation of hospitalization efficiency and medical care quality (14).

Evaluation of resource use in hospital health systems allows establishing the necessary actions which will correct the identified organizational problems. Unjustified hospital admissions and stays of elderly patients, do not only increase costs but are also related to poor health service. Thus, the permanent evaluation of hospital service utilization is an essential topic that must be considered to improve resource assignment and to increase the quality of medical assistance in institutions that render services (13,15).

Efforts have been made to reduce costs in the hospital sector in many countries. Minimizing unnecessary hospitalization would contribute to reducing the patients' payments for hospital costs where a private insurance system is in operation, as well as promoting efficient utilization of healthcare resources. Such efforts might also improve the quality and efficiency of healthcare services (5). Some of the proposed strategies for keeping down expenditure on healthcare include the provision of services at an as simple as possible assistance level, thus optimizing the use of available resources. In this sense, a review of the appropriate use of hospital care is especially relevant and it allows inappropriate stays and admissions to be identified and minimized (12,13).

Hospital care accounts for a large proportion of health care costs so it is not at all surprising that inappropriate uses of hospital services, such as unjustified admission and days of stay, represent a major burden on the health budget and a prominent feature of quality (16). Therefore, reducing unnecessary or inappropriate use of hospital services has been considered to satisfy financial constraints without compromising the quality of patient care (5).

In all health care systems, the use of hospital beds is a concern for policy-makers and managers. For several years hospital managers have been under pressure to reduce hospital expenditures (17). Furthermore greater attention has been given by health care provider to the effectiveness and quality of health care and methods for quality improvement. One of the most interesting approaches to improve the quality and efficiency of hospital use is to evaluate whether their services are used appropriately (10).

Understanding factors influencing the likelihood of inappropriate hospital patient stay is critical in developing healthcare policy for reducing inappropriate hospital utilization. Thus, there is a need for a comprehensive study that includes both patients and hospital service utilization characteristics in relation to inappropriate hospital stay (5). The hospitals must be choosing their optimal way of reducing length of stay (6). For this reason, analysis of the factors that cause inappropriate hospital patient stay for each specialty can provide valuable information for implementing specific corrective measures. Hence, the present study aims to determine factors of inappropriate hospital patient

stay in the general surgical units.

## 2. Aim of The study

The aim of the study was to determine the factors affecting inappropriateness of hospital patient stay in the general surgical units at Mansoura university hospital

## 3. Research question

1. What are the factors affecting the inappropriate of hospital stay in the general surgical units at Mansoura a University Hospital?
2. How many inappropriate hospital days does the patient stay in the general surgical units at Mansoura university hospital?

## 4. Subjects and Methods

### Design

Descriptive study design was used in the conduction of the present study.

### Setting

The study was conducted at Mansoura University Hospital; the total bed capacity is 1900 beds with general and special units. The study was carried out in four general surgical inpatient units includes two units for female patients and two other units for male patients. Each unit was occupied with 30 beds and managed by one head nurse. The way of admission of these units was through outpatients and emergency. Selected surgical patients because of surgical ward has represented the largest number of admission patients at Mansoura University Hospital and also the potential of this unit to have fluctuating occupancy levels because of availability of operating room. A pure surgical ward has the potential to have fluctuating occupancy levels

### Subjects

The study sample consisted of all patients and their records who were admitted to the selected setting throughout the period of monitoring three months because this period represent one quartered of year started with July 2010 will be involved in the present study (n=168 patients). Patients' record includes date of admission, patient diagnosis, date of operation, and date of discharge.

### Tools of data collection

Two tools of data collection

1. **Appropriateness Evaluation Protocol (AEP) Form.** It was developed by Sergio-García et al. (14), Angelillo et al. (18), Lambert et al. (19), to determining the appropriateness of each hospital day that each patient was spends during his hospitalization period and the reasons for the appropriate hospitalization days. It is a standardized tool for assessing the necessity for hospital admission and days of care for surgical patients. It comprised a list of criteria for assessing appropriate stay and a list of reasons for inappropriate stay. The totally 25 criteria of appropriateness of hospitalization day of care are divided into three subsets to surgical services (10 criteria), nursing/life support services (7 criteria), and patient condition factors (8 criteria). If the patient meets one of the criteria, the day of the stay is considered to be appropriate.

2. **Inappropriate Evaluation Form.** It was developed by Angelillo et al.(18), Lambert et al. (19), to determine the inappropriateness of each hospital day that each patient was spending during his hospitalization period and the reasons for the inappropriate hospitalization days. An inappropriate hospitalization day was defined as a day of patient stay that did not meet any criteria of the protocol, reflecting clinically unnecessary and inappropriate hospitalization. The number of Inappropriate Hospitalization Day (IHD) as a dependent variable was measured by the proportion of inappropriate days of stay in the entire hospitalization period, excluding admission and discharge days. The criteria of inappropriate of hospitalization day of care are divided into five subsets to the need for inappropriate admission, inappropriate stay due to the hospital, inappropriate stay due to the patient or family, inappropriate stay due to care environment, and inappropriate day of care.

### **Methods of data collection:**

An initial step of the study was to get the permission of the director of Mansoura University. The aim of the present study was explained to the head nurses of each study unit and patients included in the study. And, any patient has the right to withdraw from the study at any point. The tools were developed and the content validity of the development tool was tested by 7 nursing and surgical faculty members at Mansoura University who are expert in the related field. A pilot study was conducted 17 admission patient records at general surgical units at Mansoura University Hospital to test clarity and applicability. Patient evaluation protocol were used to monitor all patients admitted to the selecting setting throughout the monitory period ( three months) in order to assess the appropriateness of each hospitalization day, as well as determining the reasons for inappropriate days through observation the procedures were taken by staff ( nurses and doctors) and check patients records. Each day of stay was reviewed individually for the entire hospitalization period, excluding admission and discharge days.

### **Statistical Analysis**

Descriptive statistics number and percentages were used to answer research questions. The collected data were organized, tabulated and statistically analyzed using SPSS software statistical computer package version 15. Correlation between variables was evaluated using Pearson's correlation coefficient. The threshold of significance was fixed at the  $p < 0.05$  level for interpretation of results of tests of significance.

### **5. Results**

Table (1) shows the demographic characteristics of the study subjects in the study units. As regard to the age about 44.64 % of patients were in the age group more 40 years old and 26.79 % were age ranged from 30 to less than 40 years old. Most of patients in the study were male and 85.7% were admitted by outpatient and away from their home about one hour.

Figure (1) shows appropriate and inappropriate of patient days during preoperatively and postoperatively stay in the surgical units. This figure revealed that the highest percentage of inappropriate stay was reported to preoperative patients and the highest percentage of appropriate stay was reported to postoperative.

Table (2) shows number & percentage of factors of inappropriate of pre-operative surgical patient stay in the surgical unit. The highest percentage of factors of inappropriate of pre-operative surgical patient stay in the surgical unit was 23.11% reported to inappropriate /premature admission and followed by 22.33% for delay in surgical decisions. While the least percentage was 0.39% reported to delay due to discharge procedures.

Table (3) shows number & percentage of factors of inappropriate of post-operative surgical patient stay in the surgical unit. This table revealed that the highest percentage of factors of inappropriate of post-operative surgical patient stay in the surgical unit was 33.98% reported to inadequate outpatient diagnostic approach and followed by 17.56% for treatment possible in outpatient or daycare setting. On the other hand the least percentage was 1.28% reported to patient is waiting for transfer to other care facility.

Table (4) shows correlation of inappropriate patient stay according to patient characteristics. This table showed that a significant correlation between age and way of patients admission. As well as days of inappropriate stay was significant correlated with way of admission and time between home and hospital.

Table (1) Demographic characteristics of study surgical patient (n=168)

Characteristic	No.	%
<b>Age (Years)</b>		
20-	32	19.05
30-	45	26.79
40-	75	44.64
≥ 50	16	9.52
<b>Mean± SD</b>	<b>37.398 ± 8.421</b>	
<b>Sex</b>		
Male	86	51.2
Female	82	48.8
<b>Way of admission</b>	Emergency	
Outpatient	24	14.3
	144	85.7
<b>Time between home &amp; hospital (Hours)</b>		
<1	79	47
1-	68	40.5
>2	21	12.5
<b>Length of stay</b>		
5-	14	8.33
10-	79	47.02
15-	68	4.17
≥ 20	7	40.48

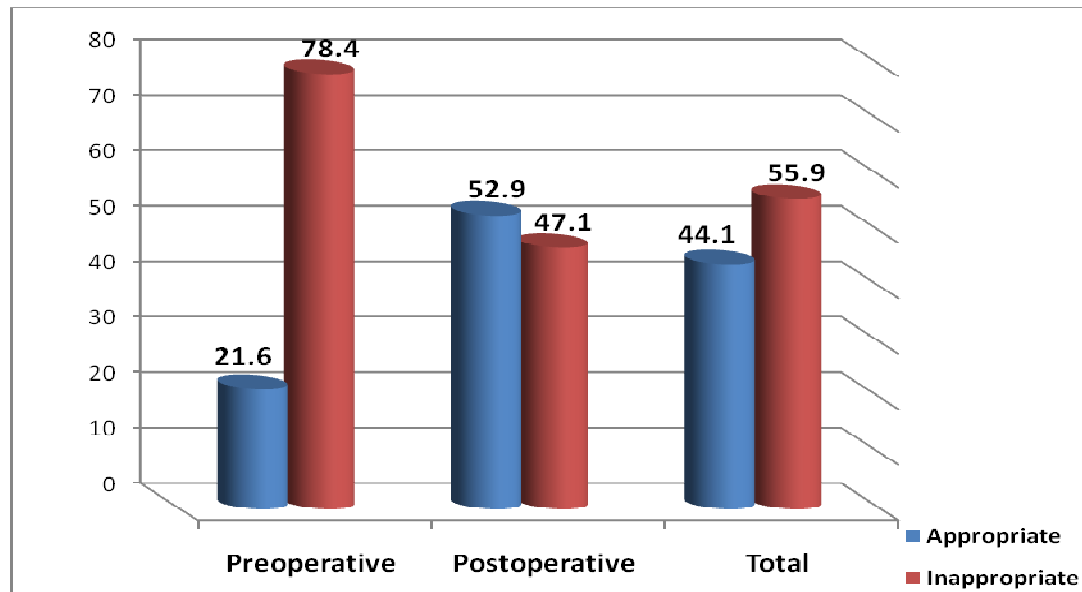


Figure (1) Appropriate and inappropriate of patient days during preoperatively and postoperatively stay in the surgical units.

Table (2) Number & percentage of factors of inappropriate of pre-operative surgical patient stay in the surgical units (n=168)

<b>Preoperative</b>	<b>No.</b>	<b>%</b>
<b>a. Inappropriate admission</b>		
1. Inadequate outpatient diagnostic approach.	30	5.83
2- Inappropriate /premature admission	119	23.11
<b>b. Inappropriate stay due to the hospital</b>		
3- Delay due to discharge procedures	2	0.39
<b>c. Inappropriate due to the patient or family</b>		
4- Inability of patient's family to take care of patient	15	2.91
<b>d. Inappropriate due to care environment</b>		
5- Treatment possible in outpatient	8	1.55
6- Patient is waiting for transfer to other care facility	7	1.36
<b>e. Inappropriate day of care</b>		
7-Delay in surgical decisions	115	22.33
8-Delay in diagnostic procedures or specialized consultations results	83	16.12
9-Delay in surgery because of operating room and hospital scheduling of operative problems	85	16.50
10-Delay in receiving test & investigations results	51	9.90
<b>Total</b>	<b>515</b>	<b>100</b>

Table (3) Number & percentage of factors of inappropriate of post-operative surgical patient stay in the surgical units (n=168)

Postoperative	No.	%
<b>a. Inappropriate admission</b>		
1- Long distance from hospital to patients' home	17	2.18
<b>b. Inappropriate stay due to the hospital</b>		
2- Discharge is planned but physician is absence to written order	69	8.85
3- Delay due to discharge procedures	93	11.92
<b>c. Inappropriate due to the patient or family</b>		
4- Inability of patient's family to take care of patient	90	11.54
<b>d. Inappropriate due to care environment</b>		
5-Treatment possible in outpatient	137	17.56
6-Inadequate outpatient diagnostic approach	265	33.98
7- Patient is waiting for transfer to other care facility	10	1.28
<b>e. Inappropriate day of care</b>		
8- Problem in hospital scheduling of operative procedure	44	5.64
9- Delay in diagnostic procedures or specialized consultations	43	5.51
10-Delay in receiving test and investigations results	12	1.54
<b>Total</b>	<b>780</b>	<b>100</b>

Table (4) Correlation of inappropriate patient stay according to patient characteristics

characteristics	Age	Sex	Way of admission	Time between home & hospital
<b>Age</b>	----	----	----	----
<b>Sex</b>	.063	.419	----	----
<b>Way of admission</b>	.410**	.000	.058	.453
<b>Time between home &amp; hospital</b>	.113	.145	.023	.771
<b>Days of inappropriate stay</b>	.011	.884	.150	.052
			.270**	.000
				.188*
				.014

\* Significant at p<0.05

\*\* Significant at p<0.001

## 6. Discussion

The rapid increase in healthcare expenditure has become a financial burden for many countries. It has been argued that healthcare costs reflect in part unnecessary or inappropriate use of hospital services. Inappropriate utilization indicates unsuitable consumption of medical resources, which may be over-utilization or under utilization. Also, inappropriate admission and/or inpatient days are two common measures for evaluating efficiency of hospital

services (20).

The present study revealed the rate of inappropriateness of hospital patient stay is higher than appropriate patient stay. It means these surgical units use hospital beds inappropriately and results to inefficient utilization of hospital resources. This is supported by other studies which conducted in different countries (22,21,20,11) that found surgical patients had more inappropriate hospital stays and length of stay was positively related to the inappropriate number of days of hospitalization. This is parallel with the results Hwang (5) who found the rate of inappropriateness of hospital patient stay is higher in surgical than in medical patients. While this result was inconsistent with other reports done by Teke & Kisa (9) d'Alche-Gautier et al. (8), Pileggi et al. (7) who pointed that medical patient have more inappropriate days of hospitalization.

The results of the present study indicated that patients who inappropriateness stayed in surgical units at Mansoura University Hospital had some internal factors that lead to inappropriate hospitalization and thereby increasing cost of hospital. Reducing unnecessary or inappropriate use of hospital services has been considered to satisfy financial constraints without compromising the quality of patient care. This result was consistent with Mould-Quevedo et al., study's(20) who emphasized the average of inappropriate patient days cost is considerably higher than appropriate days but different from Teke & Kisa (9) who finding that patients with length of stay of <10 days had a higher probability of inappropriate stays than those who stayed for 16 days or longer. Lower bed occupancy rate during hospitalization was related to higher rates of inappropriateness of hospital stay. Therefore, there is no pressure from waiting patients and managers to discharge patients when their condition improves. Such a situation can lead to delayed decisions about discharge planning and result in more inappropriateness of hospital stay (5).

In relation to premature patient admission in surgical units, the results of the present study revealed the highest percentage was found for premature patient admission in the surgical units. This is supported by Al-Omar et al. (23) who showed the degree of awareness by physicians concerning inappropriate hospitalization varied with the ownership of the hospital. Factors identified by physicians were primarily patient-related, and were social and not medical in nature. While Rodriguez-Vera(24),Hwang,(5) recommended that characteristics of both patient and healthcare service uses should be taken into account to develop efficient and feasible interventions for inappropriateness of hospital day's reduction. Such characteristics included patients' gender, age, primary disease, clinical specialty, type of emergency or planned admission, day of the week of admission, admission number, distance from the hospital to patient's home, bed occupancy level, etc.

Among the factors that found by Pérez-Rubio et al. (25) to determine appropriateness of stay is the type of department that providing care. For example, there is a study done by San Román et al.(10) to determine the rate of inappropriate stays and associated factors in patients hospitalized in the cardiology department. They concluded that 27% rate of inappropriateness was found in the cardiology department and the inappropriateness rates were higher for older age-groups which may be due to delays in discharging elderly patients for social reasons not specified in the clinical history.

Findings of the present study revealed the most factors related to inappropriate preoperative patient stay were inappropriate /premature admission and delay decision to surgical. This is agreed with Tamames et al.(12) who found a significant associations between inappropriateness of stay and the admission to services. They recommended to accurately evaluating the effect of other potential confounders in the appropriateness of pre-operative stays, such as bed occupancy, scheduled-unscheduled surgical procedures ratio, psycho-social factors, and clinical conditions, would require further investigation. Furthermore, they emphasized that there is a need to establish standards with reference to appropriate use of hospitalization.

There is a study done by Ortiga et al.(26) to examined inappropriate utilization of hospital beds and revealed that a substantial proportion of hospital bed days was being inappropriately used. However, Kulasegarah et al.(27) mentioned that there still need admissions the day before in order to avoid cancellations due to the lack of ward beds or to avoid delays in going to the theatre for earlier procedures. As well as Fontaine et al.(28) recommended that surgical patient must be admitted to unit often the day before the surgical operation, though it is not medically needed and difference between hospitals depending on whether they developed a consultation of ambulatory



preoperative anesthesia or not. Therefore, future studies should include assessment of the appropriateness of admission and intervention studies to reduce for Inappropriateness of Hospital Day's (IHDs) are needed (7,16,29).

Studies that examine the appropriateness of admissions and lengths of stay, often strive to highlight the cause underlying the event or to identify predictive factors. The results of the present study revealed that about 44% of appropriate patient admission. There is a study done by Hammond et al.(3) examined the appropriateness of acute admissions and length of stay(LOS) of patients admitted to one large acute hospitals and revealed that inappropriate admissions and LOS were occurring amongst patients with Long Term Neurological Conditions (LTNCs).This study highlights the contributing factors of inappropriate admission of patients such as limitations in the provision of community health and social care resources, optimal management of patients in community, limited knowledge regarding the management of patients with LTNCs and practical experience of managing such patients.

The results of the present study indicate that substantial proportion of surgical units at Mansoura University Hospital use is surgically inappropriate. Percentage of inadequate outpatient diagnostic approach for postoperative patients and delay in surgical decisions for surgical preoperative patients are higher than the finding of other studies conducted by Pourreza et al.(30), Victor et al. (17), Al-Omar et al.(23) in other countries. This may be contributed to all other resources such as laboratory tests and office examinations, as well as inter-visits to other specialists not use effectively. In Sweden there is a study done by Mould-Quevedo1 et al.(20) concluded cost of inappropriate stays were higher than the cost appropriate stays. Therefore, this inappropriate patient day cost reflects the fact that, in view of a lack of an additional diagnostic and/or treatment plan in the clinical file, all the resources for patient assistance are not used as in the case of appropriate hospital stay.

In relation to delay due to discharge procedures for postoperative patients, the results of the present study indicate that inappropriate or unnecessary utilization of hospital services usually results from discharge delays. This may be contributed to delays in discharge procedures are generally because of obscurity of the time of discharge. The patients and their caregivers/ relatives are not informed timely so that they cannot come and complete the discharge procedures in time. This is agreed with Ahmed (31) who found half of patient's stay in the hospital was inappropriate due to reasons to postoperative time. This is the same view of Dizdar et al.(11) who found that decision of discharge is usually late because of the lack of cooperation among the following subspecialties. Timing of discharges should be planned beginning from the first day of hospitalization and discussed daily. Delayed discharge may be caused by several factors, including hospital characteristics, patient and family characteristics, insurance schemes, nursing home market, and poor coordination of acute and long-term care sectors (32).

The results of the present study indicated that delay in receiving test & investigations results in obtaining test results' for preoperative patients. This may be contributed to inadequate of organizational arrangements and implementation of better programmes for scheduling and reporting the results of the procedures. This is the same view of Dizdar et al. (11) who found that more than half of the inappropriate stays were because of inappropriate timing/delay in diagnostic procedures/ consultations and delay in obtaining test results.

The results of the present study indicated that 33.98% of inappropriate postoperative patient stay in the surgical units due to inadequate outpatient diagnostic approach. This also makes the doctors hospitalize patients to speed up the procedures. If the difference between the scheduling times of inpatients and outpatients can be reduced, this can dissuade the doctors from hospitalizing their patients on this basis alone. This is the same results of Dizdar et al.(11) study's who found 8% of inappropriate stays were because of the lack of care facilities other than hospitals. It could be argued by San Román et al.(10) that prolonged stays are due, in many cases, to waiting for results of tests that have already been performed.

Many hospital leaders are struggling with how to decrease patients' length of stay while maintaining appropriate care. The implementation of the unit-coordinator system was recommended by Yu et al.(33) that led to an increase in the number of patients who were discharged or admitted early. As well as Geary et al. (34) provide a transferable model for daily rounds that can be used on many units to help decrease length of stay while improving communication, collaboration, and coordination. And Ortiga et al. (26) concluded the implementation of a Surgery Admission Unit for patients undergoing elective surgery has proved to be an effective strategy to shorten the length of stay and

increase the proportion of patients admitted on the same day as surgery. So, Heartfiel (35) found day surgery service had been decreased length of stay through the materializing of time, and space. This is the same view of Ryan et al.(36) who describes the evolution, structure and process and outcomes of the pilot 23-h care centre. They concluded that increasing use of Day Of Surgery Admissions (DOSAs) has resulted in reduced length of stay.

Some changes have been recommended by Ortiga et al.(26) in order to gain efficiency in bed management, such as considering day surgery as the first option for some surgery processes, start planning discharge from the admission point through the short stay surgery units, which included patients that underwent surgery or diagnostic processes who had an expected length of stay under 72 hours and, finally, to change the admission process for elective surgery by promoting admission on the same day. The most important was the delay with bed assignment when the surgery was finished. All these results lead to the conclusion that this intervention could be cost effective.

## 7. Conclusion & Recommendations

Based on findings of the present study the inappropriate use of hospital stay during pre-operative and post-operative care affects the efficiency of bed utilization. In addition, the rate of inappropriateness of hospital patient stay is higher than appropriate patient stay in surgical units at Mansoura University Hospital. The present study highlights a number of inter-related issues that are perceived to cause the inappropriate patient stay. Premature patient admission in the surgical units for pre-operative, delay in surgical decisions for surgical patients and inadequate outpatient diagnostic approach for postoperative patients are the most factors lead to inappropriate patient stay. As well as days of inappropriate stay was significant correlated with way of admission and time between home and hospital.

In the light of the findings, the following recommendations are suggested;

1. A new designed system which are required for all preoperative investigations must be completed before patients' admission to inpatient unit
2. Developing outpatient surgical clinics is paramount importance
3. Develop a system that is characterized by coordination between all clinics for efficient services of the patient.
4. Extending outpatient diagnosis services to reduce inappropriate admissions to obtain diagnostic tests results
5. Appropriate planning of surgical operations to reduce delays in surgical programs
6. Providing a written systematic approach for medical consultations
7. Improving the performance of the referral systems in order to prompt and efficient transfer to needed services.

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