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Abstract

Objectives: To verify if patient's allocation by different care units in the hospital is influenced by the patient's characteristics.

department, between January 1st to January 31st, 2015. This period was chosen based on the large number of patients observed, corresponding to approximately twice the Internal Medicine Service's bed capacity.

Patients transferred from other specialty wards to Internal Medicine Service ward during hospitalization or patients that remained at Intermediate Care Unit in Emergency Room more than 24 hours, were excluded from the study. We identified every patient who had died in this period of time and then our sample was divided in two groups: patients allocated in to Internal Medicine Service (4C, 4D, 4E) and those in the remainder services.

Variables definitions

We considered a patient to be independent if he didn't need help from a third person on daily basic activities, such as diet, hygiene and mobility; patients in need of support in one of these activities were considered to be partially dependent and if they needed help at least in two of these activities were considered to be dependent in daily basic activities.

Secondary diagnoses included comorbidities and all diagnoses made at admission and during hospitalization.

Admission's diagnoses were divided in five groups: cardiovascular, respiratory, genitourinary, gastrointestinal and oncologic based on International Classification of Diseases (ICD)-10th edition.

A Charlson Comorbidity Index (CCI) [17,18] was used to assess mortality risk at admission. This is a weighted index based on a mathematical model that takes into account the number and the

Medicine ward time to death (number of hospitalization days until death) was 888 days (120 days for patients allocated in Internal medicine service wards (4C,4D, 4E) and 613 days for those in others medical wards). The main reasons for hospitalization were: respiratory disease 58.9% (33); cardiovascular disease 23.2% (13); genitourinary 8.9% (5); oncologic 5.36% (3); gastrointestinal 3.6% (2). On average, patients had 6.4 secondary diagnoses, 41.1% (23) of patients were dependent on daily life activities, 8.93% (5) were partially dependent, 19.6% (11) were independent and 50.0% (28) had at least one hospitalization in the last year.

Samples homogeneity

Previously described factors were also analyzed: age ($t(54)=0.80$, $p=0.425$, $d=0.20$); sex ($\chi^2(1)=0.38$, $p=0.536$, $\Phi=-0.083$); admission diagnosis (respiratory ($t(52)=0.582$, $p=0.563$, $d=0.16$); cardiovascular ($t(52)=-0.50$, $p=0.61$, $d=0.14$); genitourinary ($t(42)=-1.35$, $p=0.185$, $d=0.34$); oncologic ($t(52)=0.65$, $p=0.52$, $d=0.17$); (gastrointestinal ($t(25)=1.44$, $p=0.16$)) dependence level (independent ($t(49)=-1.22$, $p=0.23$, $d=0.34$); partially dependent ($t(49)=0.25$, $p=0.80$, $d=0.06$); dependent ($t(48)=0.91$, $p=0.37$, $d=0.27$)), number of secondary diagnosis ($t(50.2)=-0.09$, $p=0.386$, $d=0.23$); Charlson comorbidity index ($t(54)=-0.331$, $p=0.742$, $d=0.09$) and number of admissions in the previous year ($t(54)=-1.35$, $p=0.182$, $d=0.36$).

Risk mortality factors analysis

There was no statistically significant difference between groups for all-cause mortality: ($t(317)=-0.510$, $p=0.611$, $d=0.07$) but for "2nd day mortality" ($t(44)=2.11$, $p=0.04$, $d=0.56$) and for "time to death"

($t(37.2)=3.318$, $p\text{-value}=0.002$, $d=0.92$), we found a statistically significant difference. If patients were at an Internal Medicine service, they survived for an average of 120 days and if they were allocated to another inpatient ward survived for an average of 613 days.

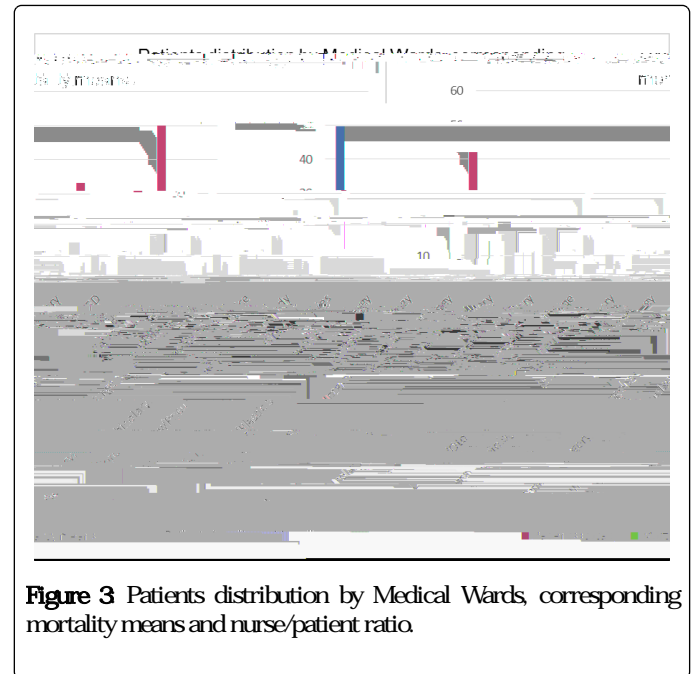


Figure 3 Patients distribution by Medical Wards, corresponding mortality means and nurse/patient ratio.

Service		Patients (Total) % (N)	Patients (Death) % (N)	Nurse/Patient Ratio
Internal medicine service wards	Internal Medicine (4C, 4D, 4E)	49.6 (158)	16.5 (26)	01/11
	Other medical service wards			
	Oncology/Nephrology (1C)	5.33 (17)	11.8 (2)	01/09
	Neurosurgery (1D)	0.63 (2)	50.0 (1)	01/09
	General Surgery (2B)	0.94 (3)	33.3 (1)	01/11
	General Surgery/Plastic Surgery/Gastroenterology (2C)	0.94 (3)	0.00 (0)	01/11
	Urology/Otorhinolaryngology/Vascular Surgery (2D)	2.51 (8)	0.00 (0)	01/12
	Urology (2E)	5.96 (19)	42.1 (8)	01/12
	Orthopaedy (3B, 3C, 3D)	14.4 (46)	17.4 (8)	01/11
	Neurology/Fhysiatry (3E)	4.39 (14)	14.3 (2)	01/10
	Cardiology/Pneumology/Internal Medicine (4B)	1.88 (6)	16.7 (1)	01/10
	Ginecology (5D)	5.33 (17)	5.88 (1)	01/10
	Common Specialties (1E)	7.52 (24)	25.0 (6)	Variable
	Former Pediatric Intermediate Care Unit (UCIPEd)	0.63 (2)	0.00 (0)	Variable
	Total	100 (319)	100 (56)	

Table 1

	Medical Service		p-value	Effect size
	Internal Medicine (N=26)	Other Service (N=30)		
Characteristics				

Despite of are limitations, this paper can be a pilot study contributing for future prospective research studies.

Conclusions

The present study highlight “patient allocation” as a determinant variable for early mortality risk but further studies are needed to identify which morbidity and mortality factors are associated with it.

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