

**More Patients, For More Time and At Higher Costs. In Summary: Unplanned Hospitalization Of Cancer Patients. Is *Diagnosis Relate Group (DRG)* A Classification System Sensitive to the Severity Of These Hospitalizations Or Not? A *photograf* of a Single Center.**

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**Abstract**

Reducing emergency hospital admissions is a key goal for all modern health systems. This study aims to describe the nature and extent of this phenomenon and to identify the risk factors related to unplanned repeated presentations in the emergency room with the consequent hospital admissions in medical oncology unit. We analyzed characteristics, diagnosis and costs of the patients admitted to the Medical Oncology- University Hospital , Messina, in one year. The analysis was conducted on the *Diagnosis Related Group* relating to all hospitalizations treated in the ordinary regime (unplanned and planned) in light of the care complexity and related costs. Our study demonstrated how the length of hospitalization, mortality and the costs of emergency hospitalizations are “poorly represented” compared to planned hospitalizations. The same Diagnosis Related Group (DRG) includes groups of patients with different clinical severity and therefore of different care complexity and treatment costs, not contemplating the adjustment of the price to the degree of severity and / or co-morbidity of the patient

**Key words:** Cancer, emergency, unplanned, hospitalization, DRG

**1. Introduction**

Emergency admissions have financial implications, as unplanned hospital admissions are more expensive than planned <sup>1</sup>, and, therefore, misuse resources such as time and money. Patients diagnosed with cancer are known to visit the Emergency Department not only for problems such as cancer progression but also for non-cancer-related problems or treatment-related problems <sup>2-5</sup>. The types of cancer patients visiting the emergency department and their reasons for visiting are important issues in cancer care<sup>6-12</sup>. However, considering the relatively high cost of emergency visits and unplanned hospitalizations<sup>13-16</sup> and the rising prevalence of cancer, unplanned hospitalizations by cancer patients may impose a significant financial burden on public health care. The Diagnosis Related Group system, which is the healthcare financing system in use in our country, was born in 1983 in the USA in the Medicare system and was exported to Italy in 1995. It consists of about 500 case categories tendentially homogeneous as regards the consumption of resource, length of stay and clinical profile-. Each discharged patient is assigned by the software - through Hospital Discharge Form (HDF) data - to a DRG.

**2. Methods:**

We retrospectively reviewed the unplanned presentations to the Medical Oncology, University Hospital, Messina, Italy, a 1-year period. The clinical characteristics that patients presented at the entrance determined three types of admission:

Type a: Treatment related complications

Type b: Complications secondary to already diagnosed cancer

Type c: Patients with acute onset and newly diagnosed

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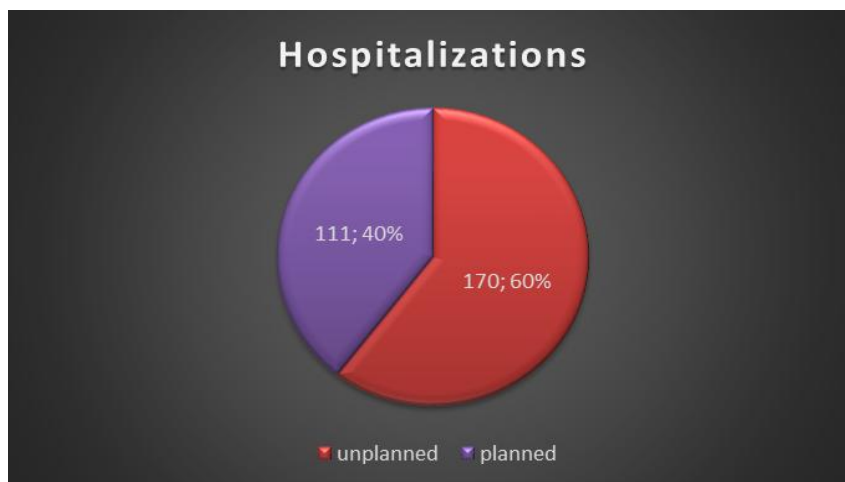
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A database was compiled of the patients' clinical and pathological characteristics, including: age, chief complain, type of cancer, admission diagnosis, discharge diagnosis. We evaluated the average days of hospitalization and the DRG relating to each of these admissions.

**3. Results:**

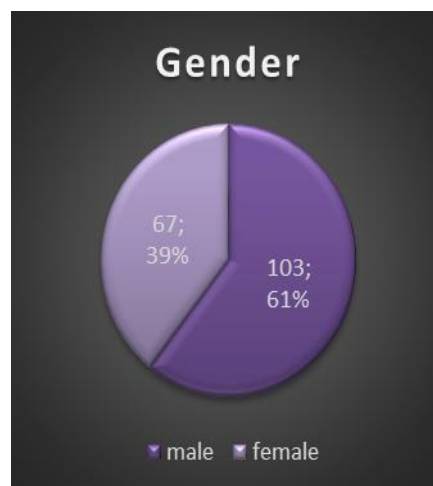
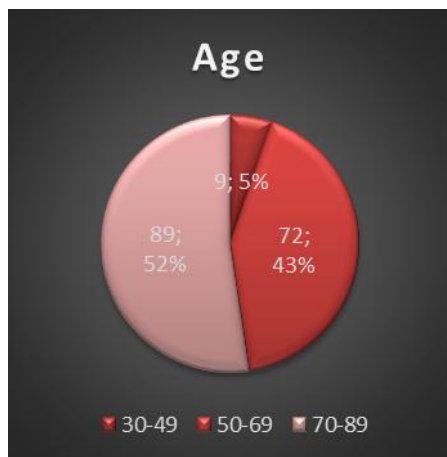
There was a total of 281 hospitalizations. One hundred and eleven (111) hospitalizations were planned , 12 occurred by transfer from another department, and 170 were hospitalized on an emergency basis (**figure 1**)

**Figure 1. Show the number of hospitalizations**



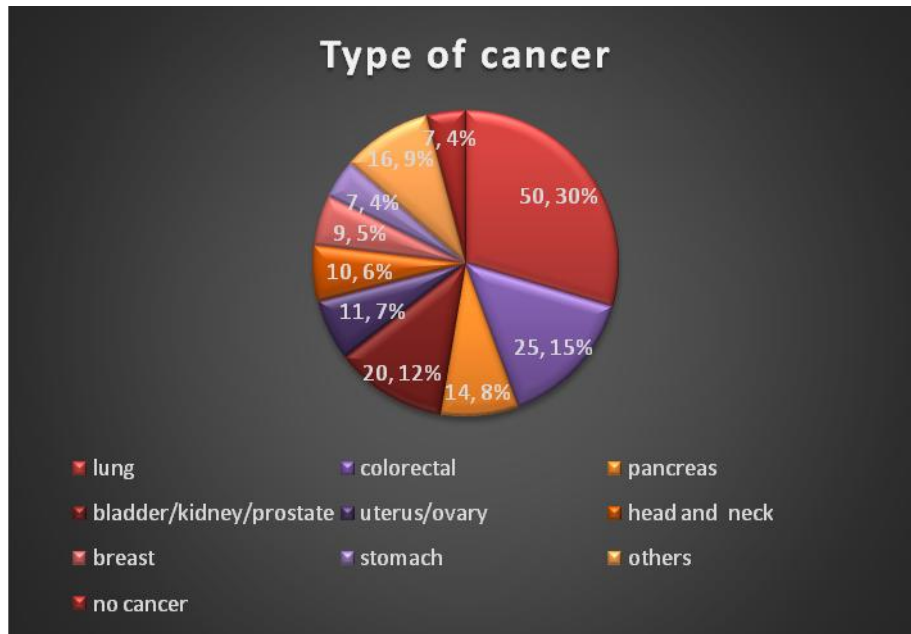
Everage age was 63 (range 30-87): Nine patients were between 30 and 49 year old, 72 between 50 and 69 years old and 89 between 70 and 89 years old (**figure 2**); 103 were male and 67 female (**figure 3**).

**Figures 2, 3. Showes age and gender**



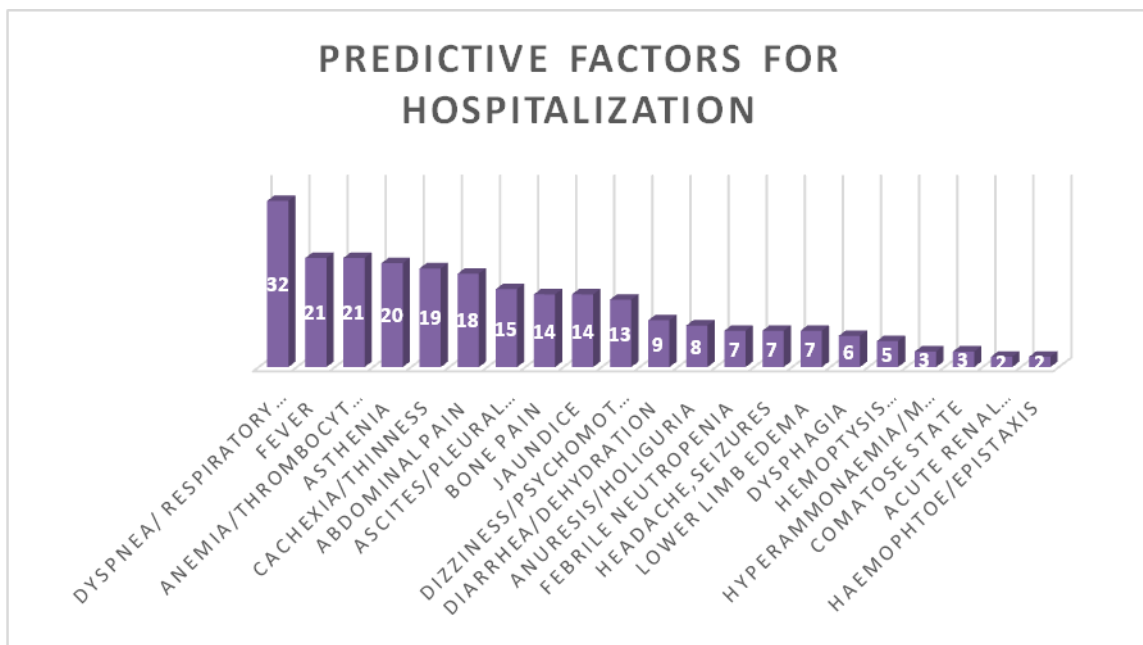
The type of cancer most represented was that of the lung 51(30 %) followed by colorectal 25 (15 %), bladder/kidney/prostate 20 (12 %) , pancreas 14 (8 %), uterus / ovary 11 (7 %), head and neck 10 (6 %), breast 9 (5 %) , stomach 7 (4, %) , others 16 (9 %) and 7 (4%) did not have cancer (**figure 4**).

Figure 4. Show the type of cancer



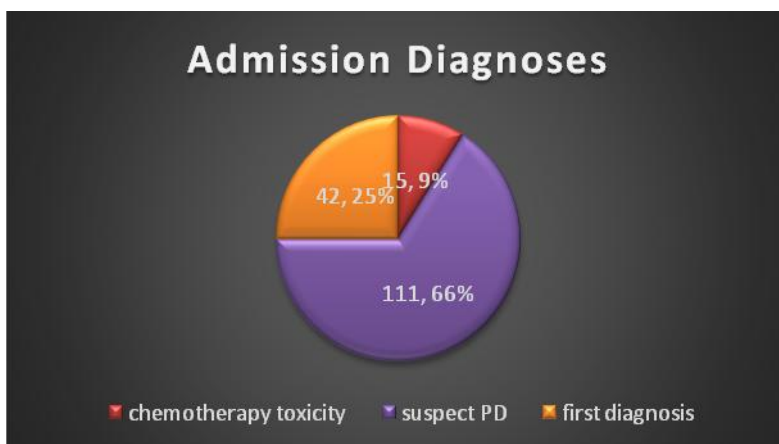
Predictive factors for hospitalization were: Dyspnea / respiratory distress / cough 32 patients , fever 21 , anemia/ thrombocytopenia 21 ,asthenia 20 , cachexia / thinness 19 , abdominal pain 18 , ascites / pleural effusion 15 ,bone pain 14 , jaundice 14 ,dizziness/ psychomotor agitation 13 , diarrhea/ dehydration 9 , holiuria/anuresis 8 , febrile neutropenia 7 ,headache and seizures 7 ,lower limb edema 7 , dysphagia 6 , hemoptysis and hematemesis 5, hyperammonaemia and metabolic syndrome 3 ,comatose state 3 ,acute renal insufficiency 2 , haemophthoe and epistaxis 2 (figure 5).

Figure 5. Show the predictive factors for hospitalization



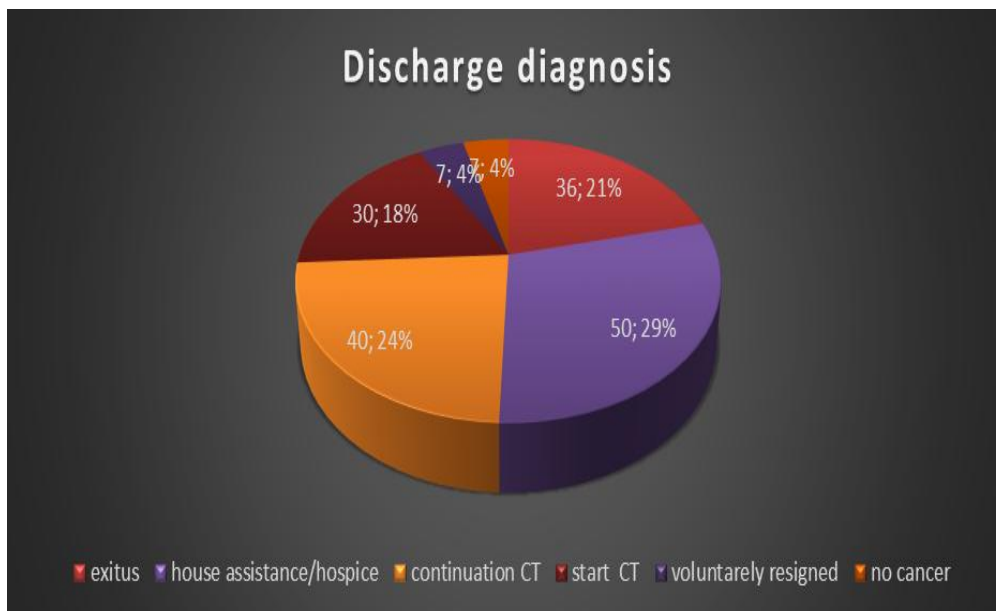
The average days of hospitalization were 23 (range 1-42) against 10 days (range 4-21) for patients with planned hospitalization. Only 15 (9 %) patients were hospitalized with admission diagnoses for chemotherapy-related toxicity; while 111 patients (66 %) for suspected Progression Disease(PD); for 42 (25 %) patients it was hospitalization for the first diagnosis(figure 6).

Figure 6. Show the Admission Diagnosis



The discharge diagnosis was distributed as follows: 36 (21%) exitus, 50 (29 %) house assistance / hospice, 40 (24 %) continued chemotherapy already practiced or further line of chemotherapy, 30 (18 %) started chemotherapy, 7(4 %) voluntarily resigned and 7(4 %) patients did not have cancer (figure 7) .

Figure 7.Show the discharge diagnosis



We therefore analyzed the Diagnosis Related Groups of all the patients, divided them into groups based on the one they belong to and obtained:

- Total number discharged with the same Diagnosis Related Group. **Table 1.**
- How many unplanned and how many planned hospitalizations? **Table 1.**

Table 1.Show DRG of the total number patient and how many unplanned /planned hospitalizations

DRG/Total number of patients=281	Number of patients	Number of unplanned patients	Number of planned patients
082 Neoplasms of the respiratory system	44	22	22
203 Malignant neoplasms of the epathobiliary sistem or pancreas	32	19	13
172 Malignant neoplasms of the digestive system with cc	23	16	7
463 Signs and symptoms with cc	19	14	5
010 Neoplasms of the nervous system with	15	10	5

cc			
239 Pathological fractures and malignant neoplasms of the musculoskeletal system and connective tissue	13	8	5
574 Major hematological and immunological diagnoses except sickle cell anemia and coagulopathy	9	8	1
411 History of malignant neoplasm without endoscopy	7	6	1
274 Malignant neoplasms of the breast with cc	6	0	6
173 Malignant neoplasms of the digestive system without cc	6	4	2
346 Malignant neoplasms of the male genital tract with cc	6	1	5
064 Malignant neoplasms of the ear,nose,mouth and throat	5	1	4
419 Fever of unknown origin,age >17 years with cc	5	3	2
182 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years with cc	5	4	1
183 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years,without cc	5	4	1
315 Other interventions on the kidney and urinary tract	4	2	2
318 Neoplasm of the kidney and urinary tract	4	2	2
366 Malignant neoplasms of the female reproductive systemwith cc	3	2	1
402 Lymphoma and non acute leukemia with other surgical interventions without cc	3	1	2
408 Myeloproliferative changes or poorly differentiated neoplasm with other interventions	3	1	2
205 Liver disease except malignant neoplasms, cirrhosis,alcoholic hepatitis	3	3	0
087 Pulmonary edema and respiratory failure	3	3	0
099 Respiratory signs and symptoms with cc	3	3	0
085 Pleural effusion with cc	3	3	0
468 Extensive surgery not related to the main diagnosis	3	0	3
100 Respiratory signs and symptoms without cc	3	0	3
316 Kidney failure	3	2	1
076 Other interventions on the respiratory system with cc	3	1	2
397 Bleeding disorders	2	1	1
403 Lymphoma and non acute leukemia with cc	2	2	0
325 Signs and symptoms related to kidney and urinary tract,age > 17 years with cc	2	2	0
367 Malignant neoplasm of the female reproductive system without cc	2	0	2
275 Malignant neoplasms of the breast without cc	2	0	2
047 Other eye diseases,age >17 years without cc	2	2	0

*Other:395-014-464-326-385-102-455-477-189-277--283-299-259-296-144-413-007-409-269-016-216-174-310-011-202-357-404-101	28	20	8
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**\*Other: Only one patient for single DRG 395** Red blood cell abnormalities, age > 17 years; **014** Intracranial hemorrhage or cerebral infarction; **464** Signs and symptoms without cc;**326** Signs and symptoms related to the kidney and urinary tract; **\*385** Infants who have died or been transferred to other care facilities; **102** Other diagnoses related to the respiratory system without cc; **455** Other diagnoses of trauma, poisoning and toxic effects without cc; **477** Non-extensive and unrelated surgical intervention with the main diagnosis; **189** Other diagnoses relate to the digestive system, age >17 years without cc;\* **277** Cellulitis, age >17 years with cc; **283** Minor skin diseases with cc ; **299** Congenital defects of metabolism; **259** Subtotal mastectomy for malignant neoplasms;**296** Nutrition disorders and miscellaneous metabolic disorders, age > 17 years with cc; **144** Other diagnoses related to the circulatory system with cc; **413** Other myeloproliferative alterations and poorly differentiated neoplasms with cc; **007** Interventions on the peripheral and cranial nerves and other interventions on the nervous system with cc; **409** Radiotherapy; **269** Other interventions on skin,subcutaneous tissue and breast with cc; **269** Other interventions on skin, subcutaneous tissue and breast with cc; **016** Nonspecific cerebrovascular diseases with cc; **216** Biopsies of the musculoskeletal system and of the connective tissue; **174** Gastrointestinal bleeding with cc;; **310** Transurethral interventions with cc; **011** Neoplasms of the nervous system without cc ;**202** Chirrosis and alcoholic hepatitis; **357** Surgery on the uterus and adnexa for malignant neoplasms of the ovary or adnexa; **404** Lymphoma or non-acute leukemia without cc; **101** Other diagnoses related to the respiratory system with cc

\*Uncorrected DRGs from medical personnel

-Total number of hospitalization days of patients discharged with the same DRG. **Table2.**

**Table 2.Show total day hospitalization and number of discharged patient with the same DRG**

<b>DRG</b>	<b>Total days hospitalization</b>	<b>Number of discharged patients</b>
082 Neoplasms of the respiratory system	696	44
203 Malignant neoplasms of the epathobiliary sistem or pancreas	483	32
172 Malignant neoplasms of the digestive system with cc	331	23
463 Signs and symptoms with cc	561	19
010 Neoplasms of the nervous system with cc	206	15
239 Pathological fractures and malignant neoplasms of the musculoskeletal system and connective tissue	185	13
574 Major hematological and immunological diagnoses except sickle cell anemia and coagulopathy	135	9
411 Hystori of malignant neoplasm without endoscopy	77	7
274 Malignant neoplasms of the breast with cc	168	6
173 Malignant neoplasms of the digestive system without cc	118	6
346 Malignant neoplasms of the male genital tract with cc	109	6
064 Malignant neoplasms of the ear,nose,mouth and throat	126	5
419 Fever of unknown origin,age >17 years with cc	34	5
182 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years with cc	57	5
183 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17	36	5

years,without cc		
315 Other interventions on the kidney and urinary tract	117	4
318 Neoplasm of the kidney and urinary tract	43	4
366 Malignant neoplasms of the female reproductive systemwith cc	44	3
402 Lymphoma and non acute leukemia with other surgical interventions without cc	51	3
408 Myeloproliferative changes or poorly differentiated neoplasm with other interventions	43	3
205 Liver disease except malignant neoplasms, cirrhosis,alcoholic hepatitis	48	3
087 Pulmonary edema and respiratory failure	14	3
099 Respiratory signs and symptoms with cc	31	3
085 Pleural effusion with cc	13	3
468 Extensive surgery not related to the main diagnosis	34	3
100 Respiratory signs and symptoms without cc	45	3
316 Kidney failure	15	3
076 Other interventions on the respiratory system with cc	131	3
397 Bleeding disorders	16	2
403 Lymphoma and non acute leukemia with cc	29	2
325 Signs and symptoms related to kidney and urinary tract,age > 17 years with cc	29	2
367 Malignant neoplasm of the female reproductive system without cc	24	2
275 Malignant neoplasms of the breast without cc	16	2
047 Other eye diseases,age >17 years without cc	4	2
202 Chirrosis and alcoholic hepatitis	18	1
174 Gastrointestinal bleeding with cc	12	1
357 Surgery on the uterus and adnexa for malignant neoplasms of the ovary or adnexa	20	1
404 Lymphoma or non-acute leukemia without cc	4	1
277 Cellulitis,age >17 years with cc	24	1
395 Red blood cell abnormalities,age > 17 years	15	1
283 Minor skin diseases with cc	3	1
299 Congenital defects of metabolism	7	1
259 Subtotal mastectomy for malignant neoplasms	22	1
296 Nutrition disorders and miscellaneous metabolic disorders,age > 17 years with cc	19	1
144 Other diagnoses related to the circulatory system with cc	10	1
413 Other myeloproliferative alterations and poorly differentiated neoplasms with cc	30	1
007 Interventions on the peropheral and cranial nerves and other interventions on the nervous system with cc	27	1
409 Radiotherapy	5	1
269 Other interventions on skin,subcutaneous tissue and breast with cc	26	1
016 Nonspecific cerebrovascular diseases with cc	7	1
216 Biopsies of the musculoskeletal system and of the connective tissue	17	1
011 Neoplasms of the nervous system without cc	10	1
310 Transureteral interventioents with cc	56	1

014 Intracranial hemorrhage or cerebral infarction	1	1
464 Signs and symptoms without cc	16	1
326 Signs and symptoms related to the kidney and urinary tract	34	1
<b>385</b> Infants who have died or been transferred to other care facilities	1	1
102 Other diagnoses related to the respiratory sistem without cc	4	1
455 Other diagnoses of trauma,poisoning and toxic effects without cc	12	1
477 Non-extensive and unrelated surgical intervention with the main diagnosis	22	1
189 Other diagnoses relate to the digestive system,age >17 years without cc	27	1
101 Other diagnoses related to the respiratory system with cc	2	1

-Overall average length of stay (ratio between the total number of days of hospitalization of those discharged with the same Diagnosis Related Group and relative total number of discharged persons with the same Diagnosis Related Group) **Table 3.**

**Table 3.**Show the overall average length of stay

<b>DRG</b>	<b>Total number of admission days</b>	<b>Total number discharged with the same DRG</b>	<b>Overall average length of stay</b>
082 Neoplasms of the respiratory system	696	44	15,8
203 Malignant neoplasms of the epathobiliary sistem or pancreas	483	32	15,09
172 Malignant neoplasms of the digestive system with cc	331	23	14,39
463 Segni e sintomi con cc	561	19	12,5
010 Neoplasms of the nervous system with cc	206	15	13,7
239 Pathological fractures and malignant neoplasms of the musculoskeletal system and connective tissue	185	13	14,2
574 Major hematological and immunological diagnoses except sickle cell anemia and coagulopathy	135	9	15
411 Hystori of malignant neoplasm without endoscopy	77	7	11
274 Malignant neoplasms of the breast with cc	168	6	28
173 Malignant neoplasms of the digestive system without cc	118	6	19,6
346 Malignant neoplasms of the male genital tract with cc	109	6	18,1
064 Malignant neoplasms of the ear,nose,mouth and throat	126	5	25,2
419 Fever of unknown origin,age >17 years with cc	34	5	6,8
182 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years with cc	57	5	1,4
183 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years,without cc	36	5	7,2
315 Other interventions on the kidney and urinary tract	117	4	29,25
318 Neoplasm of the kidney and urinary tract	43	4	10,75
366 Malignant neoplasms of the female reproductive systemwith cc	44	3	14,6
402 Lymphoma and non acute leukemia with other surgical interventions without cc	51	3	17



408 Myeloproliferative changes or poorly differentiated neoplasm with other interventions	43	3	14,3
205 Liver disease except malignant neoplasms, cirrhosis,alcoholic hepatitis	48	3	16
087 Pulmonary edema and respiratory failure	14	3	4,6
099 Respiratory signs and symptoms with cc	31	3	10,3
085 Pleural effusion with cc	13	3	4,3
468 Extensive surgery not related to the main diagnosis	34	3	11,3
100 Respiratory signs and symptoms without cc	45	3	15
316 Kidney failure	15	3	5
076 Other interventions on the respiratory system with cc	131	3	43
397 Bleeding disorders	16	2	8
403 Lymphoma and non acute leukemia with cc	29	2	14,5
325 Signs and symptoms related to kidney and urinary tract,age > 17 years with cc	29	2	14,5
367 Malignant neoplasm of the female reproductive system without cc	24	2	12
275 Malignant neoplasms of the breast without cc	16	2	8
047 Other eye diseases,age >17 years without cc	4	2	2
202 Chirrosis and alcoholic hepatitis	18	1	18
174 Gastrointestinal bleeding with cc	12	1	12
357 Surgery on the uterus and adnexa for malignant neoplasms of the ovary or adnexa	20	1	20
404 Lymphoma or non-acute leukemia without cc	4	1	4
277 Cellulitis,age >17 years with cc	24	1	24
395 Red blood cell abnormalities,age > 17 years	15	1	15
283 Minor skin diseases with cc	3	1	3
299 Congenital defects of metabolism	7	1	7
259 Subtotal mastectomy for malignant neoplasms	22	1	22
296 Nutrition disorders and miscellaneous metabolic disorders,age > 17 years with cc	19	1	19
144 Other diagnoses related to the circulatory system with cc	10	1	10
413 Other myeloproliferative alterations and poorly differentiated neoplasms with cc	30	1	30
007 Interventions on the peropheral and cranial nerves and other interventions on the nervous system with cc	27	1	27
409 Radiotherapy	5	1	5
269 Other interventions on skin,subcutaneous tissue and breast with cc	26	1	26
016 Nonspecific cerebrovascular diseases with cc	7	1	7
216 Biopsies of the musculoskeletal system and of the connective tissue	17	1	17
011 Neoplasms of the nervous system without cc	10	1	10
310 Transureteral interventioents with cc	56	1	56
014 Intracranial hemorrhage or cerebral infarction	1	1	1
464 Signs and symptoms without cc	16	1	16
326 Signs and symptoms related to the kidney and urinary tract	34	1	34
<b>385</b> Infants who have died or been transferred to other care facilities	15	1	1
102 Other diagnoses related to the respiratory sistem without cc	4	1	4
455 Other diagnoses of trauma,poisoning and toxic effects without cc	12	1	12
477 Non-extensive and unrelated surgical intervention	22	1	22

with the main diagnosis			
189 Other diagnoses relate to the digestive system,age >17 years without cc	27	1	27
101 Other diagnoses related to the respiratory system with cc	2	1	2

-Diagnosis Related Group with days of average hospitalization > 20, between 10-20,and < 10. **Table 4.**

**Table 4.Show the DRG with days of average hospitalization >20,between 10-20,and 10**

DRG/days of average hospitalization >20	DRG/ days of average hospitalization between 10-20	DRG / days of average hospitalization <10
310 Transureteral interventions with cc/56	357 Surgery on the uterus and adnexa for malignant neoplasms of the ovary or adnexa/20	397 Bleeding disorders/8
076 Other interventions on the respiratory system with cc/43	173 Malignant neoplasms of the digestive system without cc/19,6	275 Malignant neoplasms of the breast without cc/8
326 Signs and symptoms related to the kidney and urinary tract/34	296 Nutrition disorders and miscellaneous metabolic disorders,age > 17 years with cc/19	183 Esophagitis,gastroenteritis and miscellaneous diseases of the digestive system ,age>17 years,without cc/7,2
413 Other myeloproliferative alterations and poorly differentiated neoplasms with cc/30	346 Malignant neoplasms of the male genital tract with cc/18	299 Congenital defects of metabolism/7
315 Other interventions on the kidney and urinary tract/29,25	202 Chirrosis and alcoholic hepatitis/18	016 Nonspecific cerebrovascular diseases with cc/7
274 Malignant neoplasms of the breast with cc/28	402 Lymphoma and non acute leukemia with other surgical interventions without cc/17	419 Fever of unknown origin,age >17 years with cc/6,8
007 Interventions on the peripheral and cranial nerves and other interventions on the nervous system with cc/27	216 Biopsies of the musculoskeletal system and of the connective tissue/17	409 Radiotherapy/5
189 Other diagnoses relate to the digestive system,age >17 years without cc/27	205 Liver disease except malignant neoplasms, cirrhosis,alcoholic hepatitis/16	316 Kidney failure/5
269 Other interventions on skin,subcutaneous tissue and breast with cc/26	464 Signs and symptoms without cc/16	087 Pulmonary edema and respiratory failure/4,6
064 Malignant neoplasms of the ear,nose,mouth and throat/25,2	082 Neoplasms of the respiratory system/15,8	085 Pleural effusion with cc/4,3
277 Cellulitis,age >17 years with cc/24	203 Malignant neoplasms of the epathobiliary sistem or pancreas/15,03	404 Lymphoma or non-acute leukemia without cc/4
259 Subtotal mastectomy for malignant neoplasms/22	395 Red blood cell abnormalities,age > 17 years/15	102 Other diagnoses related to the respiratory sistem without cc/4
477 Non-extensive and unrelated surgical intervention with the main diagnosis/22	100 Respiratory signs and symptoms without cc/15	283 Minor skin diseases with cc/3
	574 Major hematological and immunological diagnoses except sickle cell anemia and coagulopathy/15	101 Other diagnoses related to the respiratory system with cc/2

	366 Malignant neoplasms of the female reproductive system with cc/14,6	047 Other eye diseases, age >17 years without cc/2
	403 Lymphoma and non acute leukemia with cc/14,5	014 Intracranial hemorrhage or cerebral infarction/1
	325 Signs and symptoms related to kidney and urinary tract, age > 17 years with cc/14,5	<b>385</b> Infants who have died or been transferred to other care facilities/1
	172 Malignant neoplasms of the digestive system with cc/14,3	
	408 Myeloproliferative changes or poorly differentiated neoplasm with other interventions/14,3	
	239 Pathological fractures and malignant neoplasms of the musculoskeletal system and connective tissue/14,2	
	010 Neoplasms of the nervous system with cc/13,7	
	463 Segni e sintomi con cc/12,5	
	455 Other diagnoses of trauma, poisoning and toxic effects without cc/12	
	174 Gastrointestinal bleeding with cc/12	
	367 Malignant neoplasm of the female reproductive system without cc/12	
	182 Esophagitis, gastroenteritis and miscellaneous diseases of the digestive system, age >17 years with cc/11,4	
	468 Extensive surgery not related to the main diagnosis/11,3	
	411 History of malignant neoplasm without endoscopy/11	
	318 Neoplasm of the kidney and urinary tract/10,75	
	099 Respiratory signs and symptoms with cc/10,3	
	144 Other diagnoses related to the circulatory system with cc/10	
	011 Neoplasms of the nervous system without cc/10	

-Diagnosis Related Group with higher substance, Diagnosis Related Group with lower substance, Inappropriate Diagnosis Related Groups. **Table 5.**

**Table 5. Show the DRG with higher substance, lower substance, inappropriate**

DRG	High substance/type of hospitalization	Low substance/type of hospitalization	Inappropriate/type of hospitalization
468 Extensive surgery not related to the main diagnosis	2.87/3		
076 Other interventions on the respiratory system with cc	2.49/1-1		
315 Other interventions on the kidney and urinary tract	2.01/1 -1		
326 Signs and symptoms related to the kidney and urinary tract		0.43/1	0.43/ 1
100 Respiratory signs and symptoms without cc		0.48/ 3	
411 History of malignant neoplasm without endoscopy			0.48/ 6-1

047 Other eye diseases, age >17 years without cc			0.59 / 1
404 Lymphoma or non-acute leukemia without cc			1.10/ 1
395 Red blood cell abnormalities, age > 17 years			0.86/ 1
283 Minor skin diseases with cc			0.79/ 1
299 Congenital defects of metabolism			0.77/1
326 Signs and symptoms related to the kidney and urinary tract			0.43/1
189 Other diagnoses relate to the digestive system, age >17 years without cc			0.52/1

- Planned
- Unplanned

-Diagnosis Related Group with days of hospitalization beyond the threshold. **Table 6.**

**Table 6. Show DRG with days of hospitalization beyond the threshold**

DRG	Days of hospitalization/Days more than the threshold	Type of hospitalization	Result
402 Lymphoma and non acute leukemia with other surgical interventions without cc	37/13	Unplanned	Exit us
274 Malignant neoplasms of the breast with cc	68/34 ;36/2	Unplanned; Unplanned	Hospice; Exit us
346 Malignant neoplasms of the male genital tract with cc	41/6	Unplanned	Hospice
205 Liver disease except malignant neoplasms, cirrhosis, alcoholic hepatitis	35/8	Unplanned	PD (new line of CT)
326 Signs and symptoms related to the kidney and urinary tract	34/24	Unplanned	Hospice
455 Other diagnoses of trauma, poisoning and toxic effects without cc	12/2	Unplanned	Toxicity (continuation of CT)
076 Other interventions on the respiratory system with cc	47/3	Unplanned	Exit us
173 Malignant neoplasms of the digestive system without cc	43/15; 38/10	Unplanned; Unplanned	Hospice; I Diagnosis
189 Other diagnoses relate to the digestive system, age >17 years without cc	27/13	Unplanned	Hospice

We have seen how, with the same Diagnosis Related Group, the costs of unplanned hospitalizations have proved to be higher than those planned. Example: **Diagnosis Related Group 203, Malignant neoplasms of hepatobiliary system or pancreas** ( substance 1.28) -Euros **4085,00. Unplanned hospitalization :31 days of hospitalization; planned hospitalization: 4 days of hospitalization and same salary (but higher costs in the first case)**; moreover, the Diagnosis Related Groups with the highest weight, more remunerated and with fewer days of hospitalization, were obtained with planned hospitalizations. Example: **Diagnosis Related Group 468, Extensive unrelated surgery with main diagnosis** (substance = 2.87)- Euros **10.158,00. 3 planned hospitalization (2, 9, 8 days of hospitalization), First Diagnosis.**

#### 4. Discussion/Conclusions:

The neoplastic patient who comes to the emergency room is not a patient who is evaluated for his acute problem, he is not a patient who is evaluated without preconceptions. He is a patient who has been given a prognosis and a fate, a deadline, often not based on scientific evidence but on the impression of those who welcome him. The neoplastic patient who arrives in the emergency room is a "frail patient", with a higher percentage of accesses, hospitalizations, days of hospitalization and mortality . Uncontrolled symptoms, end of life and, ultimately, side effects related to chemotherapy are among the main reasons for access to the emergency

department and hospitalization in Medical Oncology. The high hospitalization rate of these patients has a significant impact on the consumption of resources and, in this "photograph" of our Medical Oncology, in which we wanted to evaluate the weight of the Diagnosis Related Group which very often turns out to be equal to that of the patients with planned hospitalization, despite the expenditure in terms of human and economic resources is higher. We showed the high frequency of admissions of patients with cancer to our medical oncology.

These patients have peculiar characteristics, and their cases display greater clinical complexity compared to patients with planned hospitalization. Emergency hospitalization determines a longer hospital stay and a more difficult discharge when dealing with acute medical conditions and higher costs. The growing availability of cancer treatment even for patients with advanced disease suggests that more patients will require admission to acute care facilities. However, current reimbursement arrangements under hospice benefits make it unlikely that patients will be able to receive cancer therapy while enrolled in a hospice program. The gray area between a Medical Oncology Unit and a Hospice should be better defined, the characteristics of the patients to be referred to the hospital ward compared to those of the patients to be sent to palliative care or in the Hospice. The Diagnosis Related Group system, precisely in "unplanned" cases, shows many of its limits, first of all the so-called "lottery effect": specialization in the treatment of patients characterized by relatively lower costs within each Diagnosis Related Group, how to select only a part of cases, the simplest one, delegating to other structures the treatment of the most expensive cases (as often happened to our Medical Oncology Unit and to our University Policlinic), but precisely these cases of "skimming" are difficult to identify. **"Disease Staging"**, which is a classification system based on clinical severity that identifies groups of patients in need of similar treatments or procedures, whose outcomes are predictably similar, could be considered. The classification algorithm is purely clinical. It considers the pathological condition and, in a homogeneous and rigorous way, its severity (it is in fact defined as a severity system), understood as the severity of the disease and the risk of mortality. This differentiates it from the Diagnosis Related Group system, in which the algorithm is instead that of the isoresources, that is, a not always homogeneous mixture of clinical criteria and homogeneity of costs.

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