

Hospital expenditure as function of the distance from birth and death

Il Valore Economico dell'Ospedalizzazione in Funzione del tempo dalla Nascita e dalla Morte

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Riassunto: L'articolo analizza la frequenza dei ricoveri ospedalieri e il loro costo pro capite in Toscana in funzione della distanza dalla nascita (l'età) e dalla morte del paziente. I ricoveri dell'ultimo anno di vita hanno un valore economico pari a 11,49 volte i ricoveri degli anni di vita precedenti (12,54 negli uomini e 10,33 nelle donne). Questo rapporto è molto elevato per le età dai 5 ai 14 anni, poi diminuisce con un minimo attorno ai trent'anni per poi ricrescere con un massimo sui quarant'anni per poi raggiungere quasi la parità dopo gli 85 anni di età; è più elevato nelle donne rispetto agli uomini nelle classi di età 1-4 (2,8 negli uomini vs 18,5 nelle donne). 20-24 (15,2 vs 44,9) e nella classe 40-44 (31,5 vs 48,4). A dodici mesi dal decesso il valore economico dei ricoveri dei soggetti deceduti è di poco superiore a quello dei sopravvissuti, aumenta moderatamente e in modo quasi lineare sino al sesto mese dalla morte e poi cresce in modo esponenziale sino a superare le 10 volte; il valore riferito agli uomini è costantemente superiore a quello delle donne.

Keywords: health expenditure, ageing , health policy

1. Introduction

Health policy making needs to be informed on the determinants of health care expenditure. Hospital care accounts for almost 50% of total public health expenditure. However, little information is available in Italy on hospital care consumption, on expenditure concentration and on the real impact of age on expenditure. The paper analyses the frequency of hospital admissions and their per capita cost in Tuscany as function of the distance from birth - i.e. age – and from death of patients.

2. Methods

The analysis is based on the following data: a) Administrative database of Hospital Discharge Abstracts of residents in Tuscany admitted either in Tuscany or in other Italian regions and reimbursed by the Regional Health Service in 1997 and 1998; b) Death Abstracts database of causes of deaths in Tuscany ; c) Demographic statistics of Italian Institute of Statistics (ISTAT).

For hospital expenditure the per capita cost of the last year of life was calculated comparing a group of cases – those deceased in 1998 and admitted or not in the last year of life - and controls – those not admitted and still alive at 1st January 2000 or admitted in 1998 and still alive after one year from the admission.

2. Results

Age and proximity to death affect relevantly hospitalisation costs. In fact hospital admissions and consequent costs increase with age and with the proximity to death at all age. Hospital cost in the last year of life is 11.5 times higher than in previous years (12.5 for men, 10.3 for women). This ratio is very high for those between 4 and 15 years old, it decreases until the age of 30s and then increases to a maximum around 40s and decreases again to build up around unity for those over 85 years old. It is higher for women than for men in age classes 1-4 (2.8 for men vs. 18.5 for women), 20-24 (15.2 vs. 44.9) and 40-44 (31.5 vs. 48.4). The hospitalisation cost of deceased is only slightly higher than that of survivors at 12 months from death, but increases almost linearly until the sixth month from death and then exponentially becoming more than ten times higher. The hospitalisation cost is always higher for men than for women. The increase is higher among young people as in this population lethal pathologies are rare and effort to saving young lives is greater. The per capita cost of hospital care in the last year of life is up to ten times higher than for previous years. This shows how important is the presence of pathologies with high lethality in determining health care costs.

3. Conclusions

Age and proximity to death are important determinants of hospital expenditure. The last year of life costs up to ten times of previous years. They should thus be taken into account in health policy making process, particularly in the resource allocation among Italian regions and Local Health Units.

Figure 1. *Economic value of yearly hospital admissions of deceased and survivors, by age and gender.*

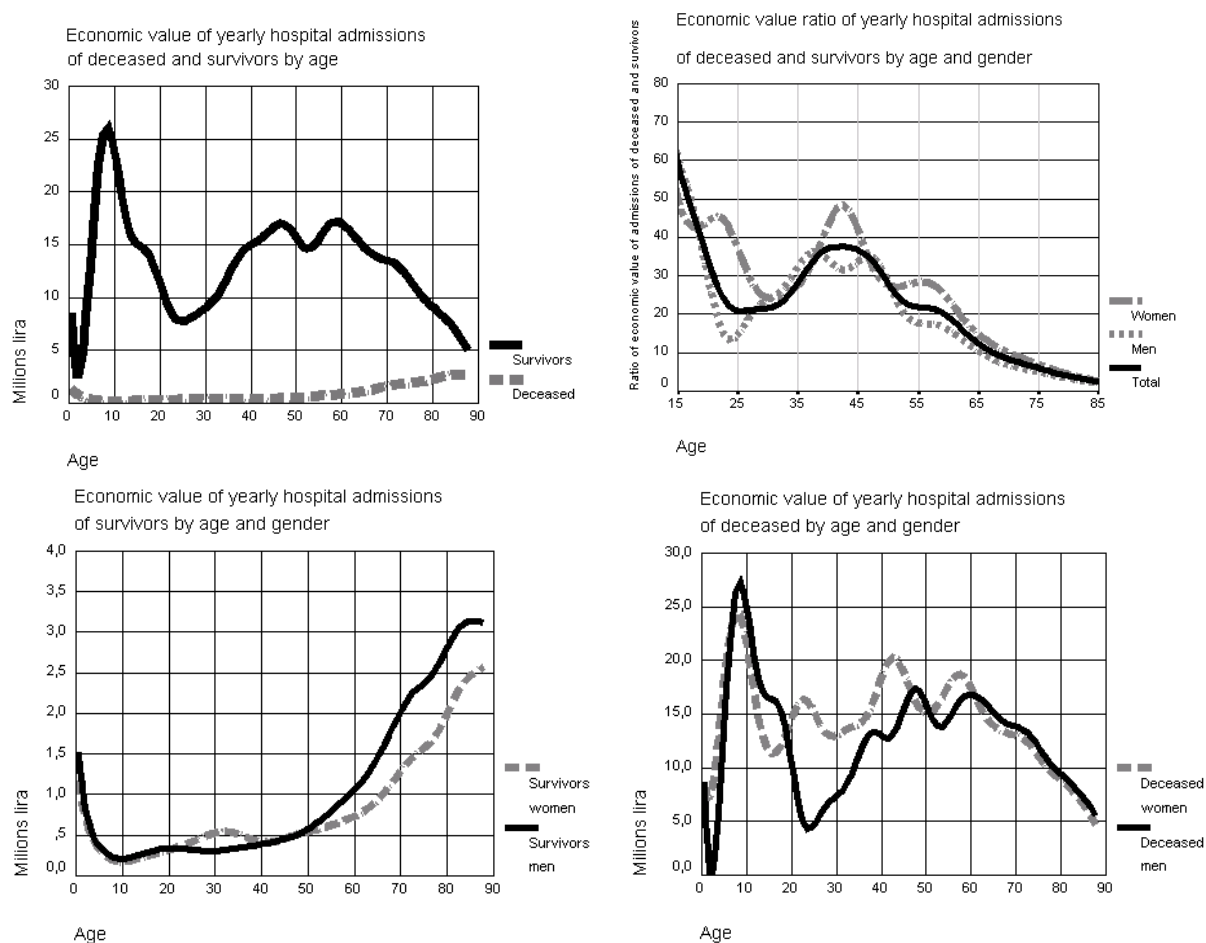


Figure 3. *Economic value ratio of hospital admissions in the last year of life and of those in previous years.*

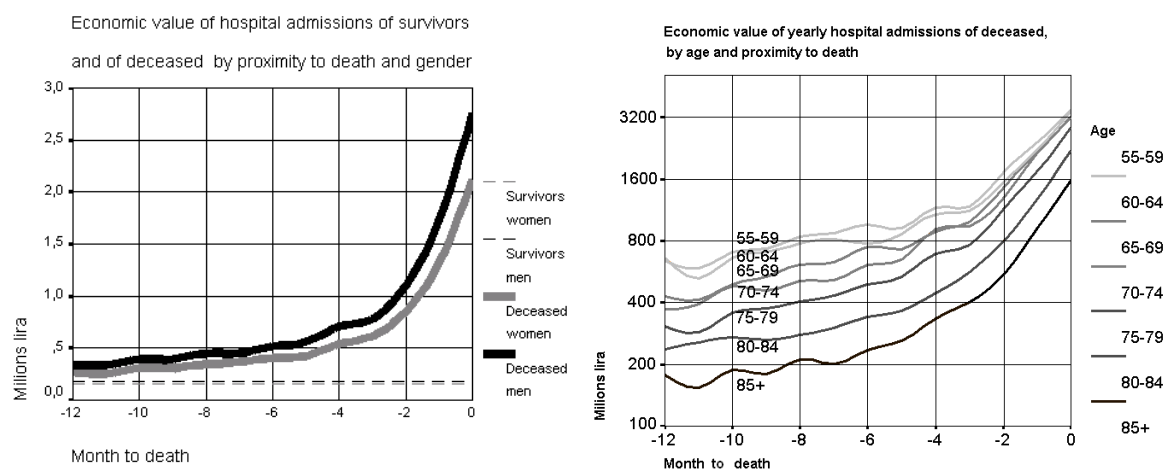


Table 1: *Per capita economic value ratio of admissions in the last year, deceased vs survivors by age and gender.*

Age	Male	Female	Total
0	5.68	7.04	6.27
1-4	2.77	18.48	7.74
5-9	107.04	120.79	112.98
10-14	78.06	73.40	79.73
15-19	47.87	42.67	46.85
20-24	15.22	44.86	24.24
25-29	20.64	27.81	21.27
30-34	26.76	25.06	23.44
35-39	36.29	33.71	34.06
40-44	31.51	48.42	37.63
45-49	34.68	31.88	33.52
50-54	20.51	27.50	23.34
55-59	17.48	27.71	21.32
60-64	13.25	18.82	15.77
65-69	8.20	12.03	9.96
70-74	5.93	8.48	7.20
75-79	4.12	5.64	4.94
80-84	2.76	3.45	3.18
85+	1.79	1.85	1.85
Total	12.54	10.33	11.49

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