

DRUG EXPENDITURE IN A TERTIARY HOSPITAL

Odetta Duma

“Gr.T. Popa” University of Medicine and Pharmacy Iași, Department of Public Health and Management

Abstract. In conditions of increasing health care costs and reduced rate of economic growth, hospitals are the main consumers within the health system. The present paper represents a two years (2000-2001) detailed analysis of drug expenditure per unit of activity (bed, hospital day and inpatient) in a tertiary hospital with special departments of nephrology and urology. Each hospital department participated in an internal comparison and some of these data were used in a comparison with other hospitals of the same level from Iași city. Intensive care appeared as the most “expensive” department with an annually increase of drug expenditure per unit of activity.

Key words: tertiary hospital, drug expenditure, unit of care

Rezumat. În condițiile creșterii permanente a costurilor îngrijirilor de sănătate și a unei rate reduse a dezvoltării economice, spitalele rămân un principal consumator de fonduri în sistemul de sănătate. Lucrarea de față reprezintă o analiză detaliată a cheltuielilor pentru medicamente pe unitatea de activitate (pat, zi de spitalizare și pacient) într-un spital terțiar din municipiul Iași, în intervalul 2000-2001, cu specific aparte (secții de nefrologie și urologie). Fiecare secție de spital a fost evaluată într-o comparație internă, unele din date fiind utilizate pentru comparația cu alte spitale universitare din Iași. Terapia intensivă a reprezentat cea mai „costisitoare” secție, cu o creștere a cheltuielilor de la un an la altul.

Cuvinte cheie: spital terțiar, cheltuieli pentru medicamente, unitate de activitate

INTRODUCTION

The word “hospital” is often used in the context of “intramural care” but with wide variations in the nature and context of the care provider. The difference between cure and care relates to the time involved and the outcome. Cure, on the one hand, is usually a short-term activity leading to a situation where need is met and demand ceases. Care, on the other

hand, suggests a long-term response to a possibly permanent demand (1).

The distinction between ambulatory and institutional care refers to the facilities involved, the support services needed and the mix of technology used. Expenditure at institutional level is significantly higher in comparison with ambulatory care.

Ambulatory care commonly involves a lower level of complexity and

DRUG EXPENDITURE IN A TERTIARY HOSPITAL

relatively modest investments in facilities and support services such as accommodation and catering, while institutional care tends to the opposite. Thus, we may distinguish less expensive extramural care and more expensive intramural care (2).

The majority of hospitals may be placed in the second quadrant of the Figure 1 (upper right), here being included hospitals for acute diseases,

university hospitals, specialized hospitals and so on. Of course, the cure is accompanied by short-term care, the first being the care of hospital's activity. The first quadrant (lower right) refers to institutions specialized in providing especially care, like those for mentally retarded, nursing homes, psychiatric hospitals, etc.

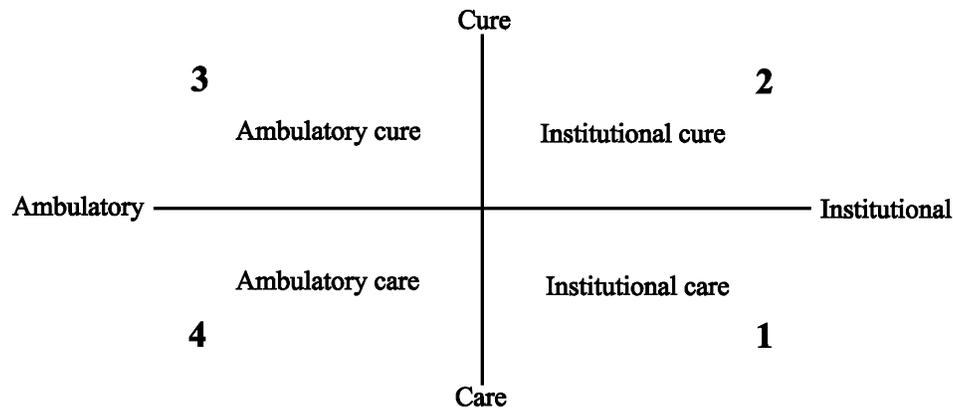


Fig. 1. Relationship between institutional and ambulatory care and respectively cure (after Gooijer, Siem Tjam and Stott, 2000)

Expenditure in a hospital is of two categories: capital (new building and equipments) and current ones (maintenance, wages and salaries).

Most of hospital capital expenditure is used to build new hospitals and for major reinvestments of old hospital building. As it takes up to 10 years to plan and build a large new hospital, the annual amount of money spent on capital projects is a poor indicator of the commitment to the future improvement of facilities. The health system suffers from the fact that many of the hospitals currently in use were

built with a century ago (3,4).

Regarding hospital current expenditure, about two-thirds of the total hospital revenue expenditure as well as the whole health system are on wages and salaries. This leaves little space for financial manoeuvre because the number of physicians, nurses and other professionals cannot easily be adjusted to short-term changes in need, and cuts in this direction usually lead to a decline in services (5,6).

The differences between the expenditure account of hospitals of different types is substantially due to

different size of professional body required to provide the services for patients admitted to such beds. This includes both the clinical staff directly involved in the care of the patients and technical staff required to enable the clinicians to function adequately (radiologists, scientists, laboratory technicians, opticians, etc.).

Surgical specialities are concerned by transplantation, microsurgery, laparoscopy or coronary artery bypasses, modern and complex investigations including magnetic resonance imaging, CT scanners or rapid blood tests that are very expensive (7).

The estimated average cost per inpatient day is higher in teaching hospitals compared with others non-teaching hospitals. There are also differences between various categories of hospitals about the amount of capital investment required in equipments and machinery (8). As manpower accounts for the major proportion of hospital cost, the daily costs are only marginally affected by whether or not a bed is occupied or the appropriateness of its use. Thus, a chronically patient being cared for in an acute bed will cost almost the same as an acutely one in the same bed (9,10).

MATERIALS AND METHODS

During 2000–2001, the drug expenditure per unit of activity of a tertiary hospital from Iași city has been assessed. This hospital by its departments of nephrology and urology is unique in northeastern region, so, its catchment area is

extended on 8 districts (over 5 mill. inhabitants).

Due to dependence relationship between expenditure and inpatient days, the analysis started with the structure of inpatient days by care units. Drug expenditure was analysed by unit of activity (per hospital bed, inpatient and inpatient day) for each department of the hospital: internal medicine, nephrology, surgery, urology and intensive care. This interdepartmental comparison was followed with one horizontal with data reported by other university hospitals from Iași city.

The last type of analysis was performed for two departments (internal medicine and surgery), as well as for the whole hospital. The data were obtained from national sanitary statistics and from hospital statistics department, being processed on EXCEL and SPSS 10 software (11,12).

RESULTS AND DISCUSSIONS

During the two years of survey 14,588 patients have been admitted in hospital. The corresponding inpatient days were 57,871 in 2000 y and 57,025 in 2001 y.

Hospital expenditure being related to the length of hospital stay, a decrease of the total number of inpatient days in some care units results in less expenditure and consequently an improvement of technical efficiency (13,14).

The distribution of the inpatients days by care units is presented in figure 2, the inner circle corresponding to data from 2000 y and the external circle to 2001 y. The highest proportion for

DRUG EXPENDITURE IN A TERTIARY HOSPITAL

both years was found in nephrology department (32% in 2000 y, and respectively 34% in 2001 y), followed by internal medicine (24%, and

respectively 25%) and urology department (23%, and respectively 29%).

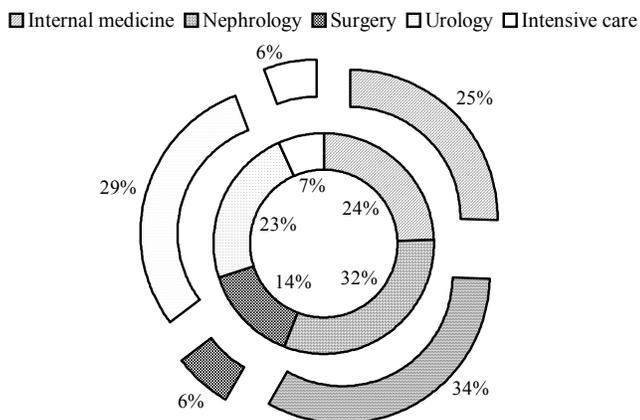


Fig. 2. The distribution of hospital days by care units, 2000-2001

In interval 2000-2001, drug expenditure per hospital bed were

assessed in each care unit of the tertiary hospital, as shown in figure 3.

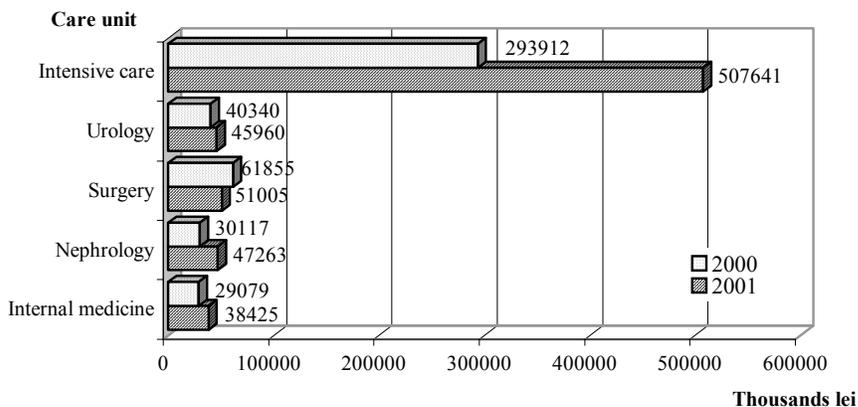


Fig. 3. Drug expenditure per hospital bed by care units, 2000-2001

This means that from the point of view of reducing expenditure in function of inpatient days, attention may be focused on nephrology department, taking into account the average hospital stay recommended by Health Ministry (15). Intensive care unit is usually known as an “expensive” department due to severity of cases admitted there which needs costly drugs and highly specialized care.

On the second place, there is the surgical department with a high expenditure account also, followed by urology, nephrology and internal medicine in both studied years. In a similar order, the intensive care unit is on the top of drug expenditure per inpatient (fig. 4) and per inpatient day (fig. 5).

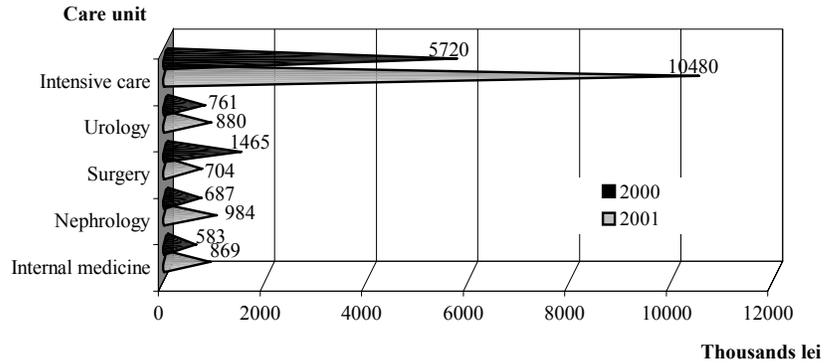


Fig. 4. Drug expenditure per inpatient by care units, 2000-2001

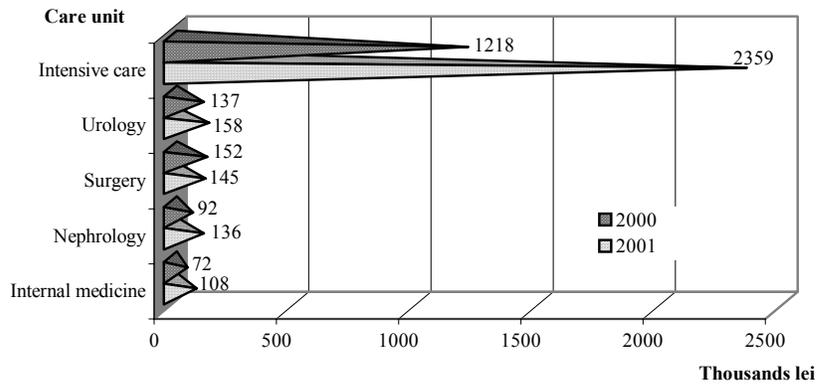


Fig. 5. Drug expenditure per hospital day by care units, 2000-2001

DRUG EXPENDITURE IN A TERTIARY HOSPITAL

Due to inflation rate, all 2001 expenditure account increased, so an accurate comparison with previous year is difficult to make. But even in this context, a significant increase of expenditure in intensive care unit has been recorded, whereas for other departments, this was not so obviously. A suggestive analysis of hospital drug expenditure (per bed, day and inpatient) in comparison with the average value found for all tertiary hospitals from Iași city was possible using the data published in sanitary statistics in 2001 year (11,12).

These detailed comparisons were performed for internal medicine and surgical department, and for the hospital as a whole. They allow an accurate interpretation because these data correspond to hospitals of the same hierarchical level.

Thus, in internal medicine care unit drug expenditure per bed and per hospital day was lower, meanwhile drug expenditure per inpatient was higher in the assessed hospital compared to the average recorded for the same department in all tertiary hospitals from Iași city (table 1).

Table 1. Average drug expenditure in internal medicine department for all tertiary hospitals from Iasi city compared to the assessed hospital, 2001

Level	Drug expenditure (thousands lei)		
	Per bed	Per inpatient	Per hospital day
All tertiary hospitals –Iasi city	39,224	860	118
Assessed hospital	38,425	869	108

In surgery department, drug expenditure for all units of activity

was lower than the average recorded at city level (table 2).

Table 2. Average drug expenditure in surgical department for all tertiary hospitals from Iasi city compared to the assessed hospital, 2001

Level	Drug expenditure (thousands lei)		
	Per bed	Per inpatient	Per hospital day
All tertiary hospitals –Iasi city	51,856	1,206	162
Assessed hospital	51,005	704	144

All these differences are not significant, reflecting a balanced expenditure account. In the same time we must take account that the data for

drug expenditure in the assessed hospital are hidden in the average corresponding to all university hospitals from Iasi city.

The comparative analysis for drug expenditure performed for the whole hospital in the same way as those for

internal medicine and surgical department, showed obviously higher values for all units of care (table 3).

Table 3. Drug expenditure for the whole assessed hospital compared to the average for all tertiary hospitals from Iasi city, 2001

Level	Drug expenditure (thousands lei)		
	Per bed	Per inpatient	Per hospital day
All tertiary hospitals –Iasi city	71,105	1,677	211
Assessed hospital	86,008	2,137	269

In absence of the available data for other departments except those previous by presented and corresponding ones of hospitals from Iasi city, the existing situation may reflect a high level of drug expenditure per bed, per inpatient and per hospital day in intensive care unit, nephrology and urology department.

CONCLUSIONS

1. The university hospital represents an important consumer within health facilities.
2. In analysed hospitals intensive care unit was on the top with highest drug expenditure per bed, hospital day and inpatient, followed by surgery, urology, nephrology and internal medicine.
3. In two years interval (2000-2001), the drug expenditure of intensive care unit increased from 5.7 million lei per inpatient in 2000 y to 10.4 million lei in 2001 y and from 1.2 million lei per hospital day to 2.3 million lei, respectively.
4. The highest proportion of inpatient days in nephrology department (34%)

focuses attention on, as cost level of medical care.

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DRUG EXPENDITURE IN A TERTIARY HOSPITAL

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