

studies

**The cost of hospitalization
Micro-economic approach
to the problems involved**

COMMISSION OF THE EUROPEAN COMMUNITIES

**The cost of hospitalization
Micro-economic approach to the
problems involved**

Final report, drafted by:
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FOREWORD

The aim was to enable a comparison of the real costs of hospital services to be carried out, regardless of the diversity of regulations, tariffs, sources of financing, accounting plans and so on.

The group of experts felt it necessary to establish two sets of comparisons - between general hospitals with no highly technical departments and between large capacity regional hospitals with the most up-to-date technical equipment. Obviously, it was not possible to achieve perfect homogeneity in each of the two groups of establishments chosen; the selected criteria of choice had the aim of avoiding technical and economic differences large enough to have a priori a noticeable effect on costs.

The present study published by the Commission of the European Communities is the fruit of much analysis and thought. It was written by Mr C. Michel, Honorary Director of FNOSS (National Federation of Social Security offices), Paris. The data in this report are therefore the sole responsibility of the author.

This exercise should be considered as an example of the necessary methodology and as an indication of the way forward in getting to grips with the real cost of hospitalization and illness.

As far as the health sector is concerned, prudence will always be required, since comparisons are difficult, the behaviour of the sick and doctors varies according to country, age-group, occupational category, etc. Simplist answers should be distrusted as well as those referring only to pure economics, to avoid further harm to the sick and especially those belonging to the least favoured social classes.

The experts whose names follow supplied Mr Michel with the data needed for his analysis. Both they and Mr Michel deserve gratitude for their excellent work, a reading of which should provide food for thought to those who have to run hospitals or to the decision-makers who have to produce plans for what has come to be called 'the hospital sector'.

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INTRODUCTION

In 1972, at the request of the Commission of the European Communities, a report on the cost of hospitalization under social security systems was drawn up.

By analyzing and comparing overall statistical data available in the various countries the report attempted to explain the considerable differences in the hospitalization costs covered by sickness insurance in the various countries.

It revealed that the national social security regulations made very comparable provisions for covering the cost of hospitalization and that the difference in expenditure was not therefore attributable to the insurance schemes themselves.

However, it appeared that the methods of fixing the daily amounts paid by social security varied widely from one country to another and, in many cases, prices did not represent the real costs of hospitalization. This obviously resulted in considerable distortion at the level of outlay by the insurance scheme.

The report also revealed that the supply of hospital treatment, measured in terms of beds per thousand inhabitants, varied a great deal from country to country and even from region to region within a particular country. As far as medical care is concerned, supply will obviously go a long way to shaping demand, at least in the present economic situation, and it was reasonable to think that use of the hospital as an instrument of public health and the expenditure this involves partly depend on the subjective opinion of both population and the medical profession as to the 'need' for hospitalization and on established social behaviour.

A comparison of indices on bed density, admissions per thousand inhabitants, average length of stay and rate of occupation of beds revealed a certain coherence of the data of any one country, although there was no systematic correlation.

Ultimately, the most important aspect of the 1972 report, based on overall national data whose significance it was often difficult to assess, was that it highlighted the extreme diversity of national situations and clearly showed that the cost of hospitalization to the sickness insurance scheme did not provide a true picture of the actual costs in the various countries.

One question remained completely unanswered - did the cost price of hospitals vary widely from one country to another or were they, on the other hand, fairly similar ?

It was decided to draw up this report of five countries, to cast some light on the subject for the first time.

The aim was to enable a comparison of the real costs of hospital services to be carried out, regardless of the diversity of regulations, tariffs, sources of financing, accounting plans and so on.

The group of experts felt it necessary to establish two sets of comparisons - between general hospitals with no highly technical departments and between large capacity regional hospitals with the most up-to-date technical equipment. Obviously, it was not possible to achieve perfect homogeneity in each of the two groups of establishments chosen; the selected criteria of choice had the aim of avoiding technical and economic differences large enough to have a priori a noticeable effect on costs.

It is of course very difficult to say whether the establishments chosen exhibit, in each country, the characteristics typical of the category of hospitals to which they belong. The comparison of the data for the particular establishments chosen for the present study with the average comparable data was carried out for the Netherlands and for Great Britain.

As regards the Netherlands, the data corresponds exactly in the case of the general hospital, although the costs of the regional hospital chosen for the study are lower than the national average.

Concerning the United Kingdom, the general hospital is slightly below the average, while the regional hospital is on the same level as other teaching hospitals in London, but clearly higher than regional provincial teaching hospitals, or than regional non-teaching hospitals.

The relevant tables can be found in the annex.

One of the greatest difficulties was in establishing a single framework for the accounting analysis of running costs, which would enable maximum comparability. However, discussions gradually enabled the resolution of this problem. The reference year, in all cases, is 1975. All things considered, it can be reckoned that the few remaining imprecisions and differences which could not be eliminated do not detract to any significant degree from the validity of the conclusions drawn.

Part I

GENERAL HOSPITALS

I. GENERAL

The five hospitals selected by the national experts have the following general characteristics.

Legal status

The hospitals in Great Britain and France are public. Those in the F R of Germany, the Netherlands and Belgium are private, non-profit-making concerns.

General information

The following data, all relating to 1975, cover the complete range of departments in each hospital:

| | Belgium | France | UK | Netherlands | FR of Germany |
|--------------------------|---------|----------------------|---------|-------------|-------------------|
| Number of beds | 320 | 598 | 405 | 263 | 440 |
| Number of admissions | 7 845 | 9 247 ¹ | 11 971 | 5 787 | 9 527 |
| Number of inpatient days | 93 233 | 175 707 ¹ | 103 700 | 77 516 | 139 078 |
| Average stay | 11.85 | 19.0 | 8.6 | 13.4 | 14.6 ¹ |
| Rate of occupation in % | 79.81 | 80.5 | 70.1 | 80.8 | 86.5 ¹ |

¹ Figure not supplied by the national report but calculated on the basis of other known data.

Although bed numbers vary (the highest figure being more than twice the lowest), they are near enough to avoid any substantial distortion. Admissions and in-patient days follow much the same pattern as bed numbers.

However, two cases are noticeably different from the rest - the average length of stay is far shorter and the rate of occupation far lower in the British hospital than elsewhere, while the average length of stay in the French hospital is longer than elsewhere.

Technical details

The Belgian hospital contains the following beds:

| | |
|---|-----|
| General medicine | 120 |
| Surgery (including urology and orthopaedics) | 160 |
| Paediatrics | 40 |

Since there is no obstetrics unit in this hospital, the national expert included a neighbouring one (catering for 43 confinements and premature babies) in the report.

The French hospital contains the following beds :

| | |
|--|-----|
| General medicine | 119 |
| General surgery | 97 |
| Obstetrics | 30 |
| TB | 47 |
| Paediatrics | 24 |
| ENT | 11 |
| Ophthalmology | 13 |
| Reanimation | 5 |
| Geriatrics | 118 |
| Permanent and semi-permanent disabilities | 134 |

The German hospital contains the following beds :

| | |
|--------------------|-----|
| General medicine | 110 |
| General surgery | 110 |
| Obstetrics | 47 |
| Gynaecology | 56 |
| Orthopaedics | 74 |
| ENT | 19 |
| New born baby unit | 7 |
| ICU | 8 |
| Other | 9 |

The British hospital contains the following beds :

| | |
|------------------|----|
| General medicine | 61 |
| General surgery | 84 |
| Obstetrics | 62 |
| Gynaecology | 32 |
| Pediatrics | 39 |
| Ophthalmics | 14 |
| Orthopaedics | 48 |
| Dermatology | 4 |
| Geriatrics | 61 |

The figures for the Dutch hospital are given below. It should be understood that this is only an average distribution since, in the Netherlands, beds are not as a rule allocated permanently to one department or another :

| | |
|----------------------------|----|
| General medicine | 51 |
| General surgery | 51 |
| Gynaecology and obstetrics | 30 |
| Paediatrics | 44 |
| Maternity | 12 |
| Ophthalmology | 5 |
| Psychiatry/neurology | 26 |
| Dermatology | 6 |
| ENT | 18 |
| Other | 20 |

The range of technical services in the various hospitals is fairly similar, with the exception of the quite large geriatric departments in France and the UK and of the psychology/neurology department in the Netherlands. In theory, these departments should push up the average length of stay, per case, but, although this is in fact considerably longer in France, it is the shortest in the United Kingdom. The inevitable conclusion is that, in the former case, the hospital caters for the old people who are chronically ill and in the latter only acute cases are dealt with. Moreover, the length of stay in the French hospital for active treatment only is 12.9 days.

The length of stay in the Dutch hospital is average, psychiatry/neurology only accounting for 8% of admissions.

Outpatients

There was a total of 64 618 outpatient attendances in the various departments of the Dutch hospital in 1975.

The British hospital treated 63 000 outpatients and 35 000 casualties.

The Belgian hospital treated 171 024 outpatients.

The German hospital provides outpatient services in medicine, maternity, gynaecology, orthopaedics and ENT. The total number of attendances, however, has not been given.

The French hospital gave figures for outpatient treatment in surgery (4 819), medicine (71) and obstetrics (43), but failed to give details for the other departments.

Overall income and expenditure

The national reports give total expenditure (investment and operation combined; excluding outpatients services) in the five hospitals in 1975 as follows :

| | | |
|---------------|-----|-------------|
| Belgium | BFR | 262 567 000 |
| France | FF | 38 046 650 |
| UK | UKL | 2 508 000 |
| Netherlands | HFL | 14 122 294 |
| FR of Germany | DM | 22 168 580 |

Converted into French francs at the official exchange rate for 1975, this amounts to :

| | | |
|---------------|----|------------|
| Belgium | FF | 29 730 000 |
| France | FF | 38 046 650 |
| UK | FF | 22 737 000 |
| Netherlands | FF | 23 458 960 |
| FR of Germany | FF | 37 895 008 |

If the purchasing power parities calculated by the EEC for 1975 are also taken into account, the figures become :

| | | |
|---------------|----|------------|
| Belgium | FF | 31 892 000 |
| France | FF | 38 046 650 |
| UK | FF | 29 786 000 |
| Netherlands | FF | 25 770 600 |
| FR of Germany | FF | 38 420 415 |

If these figures are divided by the number of beds in each hospital, the annual costs per bed average as :

| | | |
|---------------------|----|--------|
| Belgium | FF | 99 662 |
| France ¹ | FF | 78 122 |
| UK | FF | 73 545 |
| Netherlands | FF | 97 987 |
| FR of Germany | FF | 87 319 |

Such a calculation is obviously of no precise significance as far as the accounts are concerned. However, it gives an interesting picture in that the overall cost per bed varies from FF 73 545 to FF 99 662 - i.e. on a scale from 1 for the UK to 1.06 for France, 1.33 for the Netherlands, 1.36 for Belgium and 1.19 for FR of Germany.

A number of marked particularities should certainly be taken into account. The proportion of investments (amortization and loans) is far smaller in Belgium and FR of Germany than in France and the Netherlands. No such expenditure appears in the accounts in the United Kingdom, in view of the nature of the present national health service. However, although the French hospitals' accounts give investment resources that are roughly equal to expenditure, the other four hospitals do not specifically earmark income for investments.

These differences are the result of the diversity of methods of financing hospital investments. In addition, certain hospitals may have made major investments during the year in question, while others made little or none.

The inclusion of financial costs, investment expenditure and taxes and charges is, in fact, likely to falsify the comparisons in that the object of this study is to analyze administrative expenditure.

They will therefore be excluded from the following comparisons, the cost of the various items in Table I being included in the expenditure on subsistence, medicinal costs, staff and miscellaneous outlay.

It should be noted that the figures for the Belgian and the UK hospitals do not cover expenditure on outpatients. However, this is included in the three other cases, it being impossible to carry out an item by item separation, although a distinction could be made at the level of overall expenditure.

However, the proportion of outpatient to inpatient expenditure is not large enough to detract from the interest or validity of the comparisons.

¹ When the figures for the French hospital were calculated, only 1/6 of the number of geriatric beds were taken into account since this unit opened at the end of 1975.

TABLE I 6

| | Belgium | | France | | UK | | Netherlands | | FR of Germany | |
|---|---------|-------|--------|-------|-------|-------|-------------|-------|---------------|-------|
| | Total | % | Total | % | Total | % | Total | % | Total | % |
| A. Subsistence | | | | | | | | | | |
| - Food | 19 470 | 7,65 | 2 821 | 10 | 101 | 4,03 | 563 | 4,44 | 1 069 | 4,86 |
| - Other expenses (laundry, heating, maintenance) | 16 231 | 6,41 | 2 875 | 10,18 | 235 | 9,37 | 462 | 3,65 | 2 473 | 11,24 |
| | 35 701 | 14,10 | 5 696 | 20,18 | 336 | 13,40 | 1 025 | 8,09 | 3 542 | 16,10 |
| B. Medicinal costs | | | | | | | | | | |
| - Medicines | 8 401 | 3,32 | 1 999 | 7,08 | 62 | 2,47 | | | 1 354 | 6,15 |
| - Dressings and misc. supplies | 1 905 | 0,75 | - | - | 124 | 4,94 | | | 873 | 3,97 |
| - Laboratory analyses | 17 278 | 6,83 | 616 | 2,18 | 22 | 0,88 | | | 217 | 0,99 |
| - Radiology | 13 739 | 5,43 | 523 | 1,85 | 8 | 0,32 | | | 355 | 1,61 |
| - Special treatment (endoscopy, electrotherapy, cobalt treatment) | | | 668 | 2,37 | | | | | 10 | 0,04 |
| - Other | | | 499 | 1,77 | | | | | | |
| | 41 323 | 16,33 | 4 306 | 15,26 | 216 | 8,61 | 1 305 | 10,30 | 2 809 | 12,77 |
| | 16 230 | 6,41 | 3 036 | 10,76 | 274 | 10,9 | (4) | | 3 833 | 17,42 |
| C. Remuneration of doctors | | | | | | | | | | |
| D. Other staff costs | | | | | | | | | | |
| - Remuneration of medical auxiliaries other than nurses | 45 118 | 17,82 | 530 | 1,88 | 58 | 2,31 | 1 234 | 9,74 | 3 046 | 13,85 |
| - Nursing staff | 74 798 | 29,55 | 6 783 | 24,03 | 805 | 32,09 | 5 267 | 41,57 | 4 539 | 20,63 |
| - Serving staff | - | - | 3 997 | 14,16 | 466 | 18,58 | 2 172 | 17,14 | 2 723 | 12,38 |

| | | | | | | | | | | |
|--|---------|-------|---------|-------|-------|-------|--------|-------|--------|-------|
| - Administrative staff (including hospital secretary etc.) | 21 585 | 8.53 | 2 036 | 7.21 | 182 | 7.26 | 781 | 6.16 | 1 097 | 4.99 |
| - Maintenance and technical | 7 902 | 3.12 | - | - | 114 | 4.55 | 342 | 2.70 | 115 | 0.52 |
| - Welfare workers | | | 402 | 1.42 | - | | 82 | 0.64 | 80 | 0.36 |
| E. Miscellaneous expenses | 149 403 | 59.02 | 13 748 | 48.72 | 1 625 | 64.79 | 9 878 | 77.95 | 11 600 | 52.73 |
| SUB-TOTAL | 10 482 | 4.14 | 1 434 | 5.08 | 58 | 2.31 | 463 | 3.65 | 216 | 0.98 |
| Financial costs | 253 139 | 100% | 28 220 | 100% | 2 508 | 100% | 12 671 | 100% | 22 000 | 100% |
| - amortization | 3 103 | | 746 | | | | 1 300 | | 2 154 | |
| - interest and loan repayments | 5 614 | | 448 | | | | 2 483 | | | |
| Taxes and charges | 8 716 | | 1 193 | | | | 3 723 | | 2 154 | |
| Investment expenditure covered by hospital | 712 | | 821 | | | | | | 71 | |
| | | | 2 275 | | | | 1 497 | | | |
| | | | 3 7 949 | | | | | | | |
| SUB-TOTAL | 9 428 | 3.59 | 10 238 | 26.6 | - | - | 4 220 | 24.98 | 2 225 | 9.10 |
| TOTAL | 262 568 | 100% | 38 458 | 100% | | | 16 891 | 100% | 24 442 | 100% |
| | | | | | | | 5 | | | |
| | | | | | | | 15 995 | | | |

1 Acquisition and maintenance of durables
2 Provision for works
3 Expenditure in the investment budget
4 Since doctors are not paid by the hospital it was not possible to give the amount
5 The total figure for items in this column is Fl 16 891 000. From this should be deducted Fl 896 473, corresponding to 'incorporated costs', i.e. costs which cannot ultimately be set off against hospital expenditure. Actual expenditure is thus Fl 15 995 000. However, since these incorporated costs were not broken down among the various items, percentages are based on the figure of Fl 16 891 000
6 Expenditure expressed in '000 units of national currency
7 Expenditure on nursing training included in these figures

Analysis of operating expenditure

Converted into French francs on the basis of purchasing power parities, operating expenditure proper - i.e. expenditure on A, B, C, D and E of Table I - is as follows :

| | | |
|---------------|----|------------|
| Belgium | FF | 30 746 000 |
| France | FF | 28 220 000 |
| UK | FF | 29 786 000 |
| Netherlands | FF | 23 122 000 |
| FR of Germany | FF | 38 128 000 |

This total operating expenditure yields an annual cost per bed of :

| | | |
|---------------------|----|--------|
| Belgium | FF | 96 081 |
| France ¹ | FF | 56 440 |
| UK | FF | 73 545 |
| Netherlands | FF | 87 916 |
| FR of Germany | FF | 86 654 |

The widest gap is 1.70 between France and Belgium. However, the amount quoted for the French hospital is particularly low in comparison with the four other establishments. The fact that there are 134 beds for permanent invalids in this hospital no doubt partially explains the relatively low cost per bed. Costs for the other four hospitals are far more homogeneous, since if the UK is rated 1, then Belgium is only 1.3.

Table I also reveals substantial differences in the way expenditure is broken down over the various items.

Subsistence

This item represents a comparable percentage in the Belgian, UK and German hospitals. However, the figure for the Netherlands is less than half the average figure for the other four countries. France, on the other hand, had a high percentage.

- Medicinal costs

The range here is wide, going from 8.61% in the UK to 15.26% in France and 16.33% in Belgium. Expenditure is far lower in the United Kingdom and the Netherlands than in the three other countries.

¹ The 118 geriatric beds only counted for 1/6 - i.e. 20 beds - since the unit only came into service at the end of 1975

- Remuneration of doctors

There is also considerable variation here, figures ranging from 6.41% in Belgium to 17.42% in FR of Germany.

- Other staff costs

Although still substantial, the differences here are much less marked. France is at the bottom with 48.72% and the Netherlands at the top with 77.95%. There is very little difference between the other three countries.

The comparison of the percentages here, although interesting, is not always fully explicit, particularly since the remuneration of doctors could not be included in the case of the Netherlands.

If therefore seemed useful to compare expenditure on each of the four items A, B, C and D, converted into French francs on the basis of purchasing power parities :

(FF '000)

| | Belgium | France | UK | Netherlands | FR of Germany |
|----------------------------|---------|--------|--------|-------------|---------------|
| A. Subsistence | 4 336 | 5 696 | 3 990 | 1 870 | 6 138 |
| B. Medicinal costs | 5 019 | 4 306 | 2 565 | 2 381 | 4 868 |
| C. Remuneration of doctors | 1 971 | 3 036 | 3 254 | - | 6 542 |
| D. Other staff costs | 18 146 | 13 748 | 19 299 | 18 025 | 20 103 |

This gives an annual cost per bed :

(in FF)

| | Belgium | France | UK | Netherlands | FR of Germany |
|----------------------------|---------|--------|--------|-------------|---------------|
| A. Subsistence | 13 555 | 11 392 | 9 851 | 7 110 | 13 950 |
| B. Medicinal costs | 15 684 | 8 612 | 6 333 | 9 053 | 11 063 |
| C. Remuneration of doctors | 6 159 | 6 072 | 8 034 | - | 15 095 |
| D. Other staff costs | 56 706 | 27 496 | 47 651 | 68 536 | 45 688 |

The differences in this case are surprisingly large.

The relative homogeneity recorded above for total operating expenditure per bed/year masks considerable disparity at the level of the various items.

The greatest difference in subsistence is the 1.96 between the Netherlands and FR of Germany. For medicinal costs, it is 2.48, between the UK and Belgium and, in staff costs, 2.49 between France and the Netherlands. The greatest

difference as far as the remuneration of doctors is concerned is 2.48 between France and Germany.

The intermediate figures also vary widely.

The French hospital seems to have low outlay for all items except subsistence. However, we know that a service for the chronically sick can bring about a considerable drop in average costs - except, as it happens, for subsistence.

The German hospital is one of the most expensive, except for staff costs, where it is towards the lower end of the scale.

The Dutch hospital, on the other hand, has very high expenditure on staff costs, although its subsistence expenditure is low and its medicinal costs average.

Belgium has the highest expenditure for all items except the remuneration of doctors.

Finally, the United Kingdom is average throughout, except for medicinal costs, where it is the smallest spender.

Obviously such comparisons lack mathematical rigour. Purchasing power parities are only approximate figures representing averages. Similarly, certain costs, of food and energy for example, may vary from one country to another. And again, the wages and salaries of hospital staff are, very naturally, in line with national figures.

Nevertheless, clear differences of the kind recorded above certainly denote differences in hospital management itself.

Numbers of staff

Regulation hours of service of nursing staff

| | |
|---------------|-------------------|
| Belgium | 40 hours per week |
| France | 40 hours per week |
| UK | 40 hours per week |
| Netherlands | 40 hours per week |
| FR of Germany | 40 hours per week |

| | All categories except doctors | | Nurses | | Nursing assistants | | Medical auxiliaries | | Administrative nurses | | Doctors | |
|-----------------|-------------------------------|---------|-----------------|--------------------|--------------------|---------|---------------------|---------|-----------------------|---------|-----------------|---------|
| | T | per bed | T | per bed | T | per bed | T | per bed | T | per bed | T | per bed |
| Belgium | | | 48 | 0.148 | 100 | 0.314 | 1 | 0.004 | 10 | 0.031 | 46 | 0.144 |
| France | 495 | 0.827 | 73 | 0.122 | 105 | 0.175 | 7 | 0.031 | 10 | 0.016 | 25 ¹ | 0.041 |
| UK ² | 697 | 1.72 | 143 | 0.353 ³ | 78 | 0.192 | 13 | 0.03 | 12 | 0.03 | 36 ⁴ | 0.09 |
| Netherlands | 330 | 1.254 | 76 ⁵ | 0.29 | 9 | 0.03 | 4 | 0.021 | - | - | - | - |
| FR of Germany | 422 ⁶ | 0.96 | 102 | 0.23 | 31 | 0.070 | 22 | 0.05 | 25 | 0.057 | 50 | 0.114 |

¹ Including 8 full-time, 8 part-time and 9 freelance doctors

² Whole time equivalent

³ Plus 125 student nurses (0.31 per bed) who help care for patients

⁴ Including medical students when they help with treatment

⁵ Plus 78 student nurses (0.30 per bed)

⁶ Including student nurses (total number divided by three)

This table, like the previous ones, reveals very considerable differences from one country to the next.

The range for nurses goes from 0.122 for France to 0.290 for the Netherlands and 0.350 for the United Kingdom.

Similarly, the rate of nursing assistants per bed varies widely. If nurses and nursing assistants are added together, the differences are reduced, but by no means disappear entirely.

| | |
|---------------|-------|
| Belgium | 0.462 |
| France | 0.297 |
| UK | 0.540 |
| Netherlands | 0.320 |
| FR of Germany | 0.300 |

The differences for medical auxiliaries are very marked, but total numbers are in any case low.

The information on doctors can only be used as a guide, in view of the considerable differences in doctors' status.

Remuneration of nursing staff

Figures here are for the average monthly salary, including social security contributions, of nurses and nursing assistants.

The average cost to the German hospital is DM 2 446.

In the UK, the figure is UKL 194 for nursing assistants and UKL 253 for nurses.

The average monthly salary for nurses and nursing assistants in the Netherlands is HFL 2 500.

In Belgium, the figure is BFRS 48 350 for nursing assistants and BFR 61 750 for registered nurses.

The French hospital pays nursing assistants FF 3 205 and registered nurses FF 3 280.

Translated into French francs, due account being taken of purchasing power parities, this gives :

| | |
|---------------|-----------------------|
| FR of Germany | FF 4 239 |
| UK | FF 2 309 and FF 3 004 |
| Belgium | FF 5 872 and FF 7 500 |
| France | FF 3 205 and FF 3 280 |
| Netherlands | FF 4 562 |

Statistics published by the EEC (annex to the report on trends in the social situation, 1976) gave the indices for the labour costs of manual and white collar workers in industry in 1975 as :

| | |
|---------------|-----|
| Netherlands | 100 |
| Belgium | 96 |
| FR of Germany | 91 |
| France | 72 |
| UK | 47 |

If these are calculated according to the average cost of nursing staff, the following figures are obtained :

| | |
|---------------|-----|
| Belgium | 100 |
| Netherlands | 68 |
| FR of Germany | 63 |
| France | 48 |
| UK | 40 |

The order resulting from these indices is not in complete contradiction with the previous order, although the differences recorded are much greater, doubtless because the place of nursing staff in the general hierarchy varies from country to country.

In order to obtain a more precise idea of the nursing staff situation in each hospital, both the rate per bed and average cost of staff must be taken into account.

Belgium has both a high rate per bed and the highest salaries.

The United Kingdom has the highest rate per bed and the lowest average outlay on staff.

The Netherlands have a low rate and high staff costs.

The French hospital has an average rate per bed and very low staff costs.

FR of Germany has a low rate per bed and average staff costs.

Such diversity shows that there is no relation between staff costs and staff numbers.

II. DEPARTMENTAL BREAKDOWN

General medicine

| | Belgium ¹ | France ² | UK ¹ | Netherlands ¹ | FR of Germany ¹ |
|--------------------|----------------------|---------------------|-----------------|--------------------------|----------------------------|
| Number of beds | 120 | 96 | 61 | 51 | 110 |
| Number of days | 44 259 | 4 999 | 19 572 | 12 368 | 35 992 |
| Average of stay | 15.95 | 16.72 | 8.5 | 14.8 | 19.71 |
| Rate of occupation | 101.05 | 85.36 | 88.1 | 66.44 | 89.64 |
| Admissions | 2 774 | 299 | 2 313 | 831 | 1 826 |

¹ Figures for 1975

² Figures for November and December 1976

The above figures vary little, except in the case of the average stay in Britain, (which seems very short in comparison with the other hospitals) and of the relatively low rate of occupation in the Netherlands.

The above table shows that the differences noted between the global accounts for each hospital also occur at the level of the departments.

Particular note should be taken of the small percentage of expenditure on medicinal costs in the UK and Germany and the high percentage represented by staff costs in the UK.

On the basis of cost per day, the following figures emerge :

| | | |
|---------------|-----|--------|
| Belgium | BFR | 2 572 |
| France | FF | 230 |
| UK | UKL | 17.78 |
| FR of Germany | DM | 144.48 |

Converted into French francs according to purchasing power parities we obtain :

| | | |
|---------------|----|--------|
| Belgium | FF | 312.40 |
| France | FF | 230 |
| UK | FF | 211.16 |
| FR of Germany | FF | 250.40 |

Table II

| Expenditure ¹ | Belgium ⁴ | | France ² | | UK ³ | | FR of Germany ⁴ | |
|---|----------------------|-------|---------------------|-------|-----------------|------|----------------------------|-------|
| | Total | % | Total | % | Total | % | Total | % |
| <u>A. Subsistence</u> | | | | | | | | |
| - Food | 9 243 | | 100 | | 3 195 | | 267 | |
| - Other expenses | 6 263 | | 141 | | 5 889 | | 618 | |
| | 15 506 | 14.08 | 242 | 21.69 | 9 084 | 15.5 | 885 | 19.05 |
| <u>B. Medicinal Costs</u> | | | | | | | | |
| - Medicines | 3 883 | | 97 | | 1 395 | | 342 | |
| - Dressing and miscellaneous supplies | 827 | | 22 | | 2 004 | | 106 | |
| - Laboratory analyses | 8 203 | | 56 | | 545 | | 59 | |
| - Radiology | 6 522 | | 41 | | 407 | | 74 | |
| - Special treatment | | | 33 | | - | | 3 | |
| | 19 435 | 17.58 | 249 | 22.41 | 4 351 | 7.42 | 584 | 12.57 |
| <u>C. Remuneration of doctors</u> | 8 134 | 7.39 | 58 | 5.22 | 3 610 | 6.16 | 958 | 20.62 |
| <u>D. Other Staff Costs</u> | | | | | | | | |
| - Medical auxiliaries | 21 355 | | 8 | | | | 257 | |
| - Nursing staff | 29 037 | | 358 | | 20 255 | | 1 060 | |
| - Serving staff | | | 141 | | 12 536 | | 556 | |
| - Administrative staff | 8 599 | | 19 | | 4 713 | | 241 | |
| - Maintenance and technical | 3 009 | | | | 2 363 | | 29 | |

| | | | | | | | | | | | | |
|--|---------|-------|-------|-------|--------|-------|-------|-------|--|--|----|--|
| - Welfare workers | | | | | | | | | | | 20 | |
| | 62 000 | 56.33 | 526 | 47.34 | 39 867 | 68.03 | 2 163 | 46.57 | | | | |
| E. <u>Miscellaneous Expenses</u> | 4 986 | 4.53 | 37 | 3.33 | 1 690 | 2.88 | 54 | 1.16 | | | | |
| SUB-TOTAL | 110 061 | 100% | 1 111 | 100% | 58 602 | 100% | 4 644 | 100% | | | | |
| Financial Costs | | | | | | | | | | | | |
| - amortization | 1 207 | | 9 | | | | 538 | | | | | |
| - loans | 2 278 | | 5 | | | | | | | | | |
| Taxes and Charges | 3 485 | | 14 | | | | 538 | | | | | |
| Investments | 280 | | 25 | | | | 18 | | | | | |
| SUB-TOTAL | 3 765 | 3.30 | 39 | 3.39 | | | 556 | 10.69 | | | | |
| TOTAL | 113 857 | 100% | 1 150 | 100% | 58 602 | 100% | 5 200 | 100% | | | | |

1 Expenditure expressed in '000 units of national currency and in units in the case of the UK

2 Figures for November and December 1976

3 Figures for 2 typical months of 1975

4 Figures for 1975

The greatest difference is 1 - 1.48 between the UK and Belgium.

Average costs per patient can also be compared :

| | National currency | FF |
|---------------|----------------------|-------|
| Belgium | 41 044 | 4 985 |
| France | 3 846 | 3 846 |
| UK | 176.51 | 2 096 |
| FR of Germany | 2 848 | 4 935 |

The greatest difference is 1 - 2.38 between the United Kingdom and Belgium.

The cost per patient considerably reinforces the differences recorded for daily costs. The United Kingdom has both the lowest daily costs and the shortest average stay. Germany, on the other hand, combines the highest unit cost and the longest average stay.

This shows to just how far the average length of stay affects costs.

If the cost per bed/year is taken as the unit of comparison, the following figures are obtained :

| | National currency | FF |
|---------------|----------------------|---------|
| Belgium | 948 808 | 115 244 |
| France | 71 874 | 71 874 |
| UK | 5 766 | 68 480 |
| FR of Germany | 47 272 | 81 927 |

The greatest difference is 1.68 as between the United Kingdom and Belgium.

On the basis of operating expenditure proper (i.e. A, B, C, D and E in Table II), we obtain averages that are fully comparable to those set out above, except for Germany where considerable financial costs are included in operating expenditure.

| | Daily costs | Cost per patient |
|---------------|-------------|---------------------|
| Belgium | 301.96 | 4,819 |
| France | 222.24 | 3 715 |
| UK | 211.16 | 2 096 |
| FR of Germany | 223.62 | 4 407 |

The greatest difference is 1.43 for daily costs and 2.30 for cost per patient, as between the UK and Belgium.

General surgery

| | Belgium ¹ | France ² | UK ¹ | Netherlands ¹ | FR of Germany ¹ |
|--------------------|----------------------|---------------------|-----------------|--------------------------|----------------------------|
| Number of beds | 160 | 97 | 84 | 51 | 110 |
| Number of days | 38 460 | 3 551 | 17 916 | 20 489 | 35 119 |
| Average stay | 10.29 | 10.03 | 7.2 | 15.6 | 13.78 |
| Rate of occupation | 65.85 | 60.01 | 59.2 | 110.07 | 87.47 |
| Admissions | 3 737 | 354 | 2 472 | 1 309 | 2 549 |

¹ Figures for 1975

² Figures for November and December 1976

The average length of stay varies widely. They vary more than in general medicine, which is, on the face of it, unexpected. As already noted in general medicine, the average stay in surgery in the UK is far shorter than elsewhere and the rate of occupation is also very low. In the other hospitals, the rate of occupation is generally much lower in surgery than in medicine, except in Germany and the Netherlands.

There is a narrower range than in general medicine of total expenditure on the various items than in general medicine. Medicinal costs, which represented 7.42% - 22.41% in medicine, only range from 10.85% - 17.79% in surgery. Staff costs, which were 46.57% - 68.03% in medicine, range from 46.07% - 60.39% in surgery.

However, if this breakdown is viewed, not from a country to country angle but for each country individually, it emerges that the percentages for surgery and medicine are very comparable.

The daily costs are :

| | | |
|---------------|-----|--------|
| Belgium | BFR | 3 063 |
| France | FF | 274 |
| UK | UKL | 28.96 |
| FR of Germany | DM | 161.31 |

Converted into French francs (at exchange rates), this gives :

| | | |
|---------------|----|-----|
| Belgium | FF | 372 |
| France | FF | 274 |
| UK | FF | 344 |
| FR of Germany | FF | 279 |

Table III

| Expenditure ¹ | Belgium ² | | France ³ | | UK ¹ | | FR of Germany ² | |
|--|----------------------|-------|---------------------|-------|-----------------|-------|----------------------------|-------|
| | Total | % | Total | % | Total | % | Total | % |
| A. Subsistence : | | | | | | | | |
| - Food | 8 032 | | 71 | | 2 955 | | 267 | |
| - Other expenses | 8 064 | | 155 | | 8 083 | | 618 | |
| | 16 095 | 14.20 | 226 | 24.67 | 11 038 | 13.20 | 885 | 17.32 |
| B. Medicinal Costs : | | | | | | | | |
| - Medicines | 3 884 | | 56 | | 2 541 | | 401 | |
| - Dressings and miscellaneous supplies | 824 | | 13 | | 5 427 | | 309 | |
| - Laboratory analyses | 7 128 | | 26 | | 751 | | 63 | |
| - Radiology | 5 668 | | 32 | | 359 | | 51 | |
| - Special treatment | | | 36 | | | | 2 | |
| | 17 504 | 15.45 | 163 | 17.79 | 9 078 | 10.85 | 826 | 16.17 |
| C. Remuneration of Doctors : | 6 338 | 5.60 | 71 | 7.75 | 11 595 | 13.86 | 958 | 18.75 |
| D. Other Staff Costs : | | | | | | | | |
| - Medical auxiliaries | 18 670 | | 8 | | | | 190 | |
| - Nursing staff | 35 544 | | 332 | | 24 212 | | 1 207 | |
| - Service staff | | | 86 | | 14 697 | | 669 | |
| - Administrative staff | 10 223 | | 13 | | 6 358 | | 271 | |
| - Maintenance and technical | 3 969 | | | | 4 702 | | 29 | |

| | | | | | | | | | | |
|---|---------|-------|-----|-------|--------|-------|-------|------|----|--|
| - Welfare workers | | | | | | | | | 20 | |
| | 68 406 | 60.39 | 439 | 47.93 | 49 969 | 59.73 | 2 386 | 46,7 | | |
| E. <u>Miscellaneous Expenses:</u> | 4 934 | 4.36 | 17 | 1.85 | 1 972 | 2.36 | 54 | 1,05 | | |
| SUB-TOTAL | 113 277 | 100% | 916 | 100% | 83 652 | 100% | 5 109 | 100% | | |
| Financial Costs : | | | | | | | | | | |
| - amortization | 1 533 | | 30 | | | | 539 | | | |
| - loans | 2 656 | | 7 | | | | | | | |
| Taxes and Charges | 4 189 | | 37 | | | | 539 | | | |
| | 341 | | 22 | | | | 18 | | | |
| SUB-TOTAL | 4 530 | 3.84 | 59 | 6.05 | | | 557 | 9,83 | | |
| TOTAL | 117 807 | 100% | 975 | 100% | 83 652 | 100% | 5 665 | 100% | | |

1 Expenditure expressed in '000 units of national currency and in units in the case of the UK

2 Figures for 1975

3 Figures for November and December 1976

4 Figures for 2 typical months of 1975

The greatest difference is 1.52 as between France and Belgium.

The average costs per patient are :

| | National currency | FF |
|---------------|----------------------|-------|
| Belgium | 31 524 | 3 829 |
| France | 2 755 | 2 755 |
| UK | 219 | 2 601 |
| FR of Germany | 2 222 | 3 851 |

The greatest difference is 1.48, as between the UK and Germany.

The annual costs per bed vary as follows :

| | National currency | FF |
|---------------|----------------------|--------|
| Belgium | 736 293 | 89 432 |
| France | 60 306 | 60 306 |
| UK | 5 975 | 70 961 |
| FR of Germany | 51 500 | 89 255 |

The greatest difference is 1.48 as between France and Belgium.

If the cost per patient and the daily cost is worked out on the basis of A, B, C, D and E in Table III, the following figures are obtained (FF) :

| | Daily cost | Cost per patient |
|---------------|------------|---------------------|
| Belgium | 357 | 3 681 |
| France | 258 | 2 587 |
| UK | 344 | 2 601 |
| FR of Germany | 252 | 3 474 |

The greatest difference for cost per patient is 1.42, as between France and Belgium and for daily cost 1.41, between FR of Germany and Belgium.

It should be noted that, although daily costs in surgery are higher than in medicine in all hospitals, particularly in the UK, the cost per patient is substantially lower in surgery than medicine in all but the British hospital.

Obstetrics

| | Belgium ¹ | France ² | UK ¹ | Netherlands ¹ | FR of Germany ¹ |
|--------------------|----------------------|---------------------|-----------------|--------------------------|----------------------------|
| Number of beds | 43 | 30 | 62 | - | 47 |
| Number of days | 9 250 | 1 014 | 14 258 | 2 994 | 16 383 |
| Average stay | 11 | 9.39 | 6.6 | 7.4 | 11.28 |
| Rate of occupation | 58.94 | 55.41 | 63 | - | 95.50 |
| Admissions | 841 | 108 | 2 148 | 400 | 1 453 |

¹ Figures for 1975

² Figures for November and December 1976

(maternity plus obstetrics - which accounts for some 10% of total number of days).

It is clear that the average stay in obstetrics varies as much as in surgery or medicine. Here again, the United Kingdom has the shortest stay.

With the exception of Germany, where the rate of occupation is particularly high, the obstetrics departments are functioning at about half capacity.

Staff costs (excluding remuneration of doctors) range from 41.49% to 71.74% of total expenditure. Similarly, doctors' remuneration ranges from 3.53% to 17.55%.

Expenditure on treatment is proportionately less in obstetrics than in surgery or medicine.

The daily costs are :

| | | |
|---------------|-----|--------|
| Belgium | BFR | 4 215 |
| France | FF | 275 |
| UK | UKL | 25.39 |
| FR of Germany | DM | 137.69 |

In FF, this amounts to :

| | | |
|---------------|----|--------|
| Belgium | FF | 511.96 |
| France | FF | 275 |
| UK | FF | 302 |
| FR of Germany | FF | 238.63 |

The greatest difference is 1.86.

The daily costs are higher here than in medicine in all hospitals except the German one. On the other hand, they are higher than in surgery in Belgium, equal to surgery in France and lower than surgery in the UK and Germany.

Table IV

| Expenditure ¹ | Belgium ² | | France ³ | | UK ⁴ | | FR of Germany ² | |
|---|----------------------|-------|---------------------|-------|-----------------|-------|----------------------------|-------|
| | Total | % | Total | % | Total | % | Total | % |
| | | | | | | | | |
| <u>A. Subsistence</u> | | | | | | | | |
| - Food | 2 056 | | 20 | | 2 322 | | 110 | |
| - Other expenses | 3 409 | | 44 | | 5 972 | | 256 | |
| | 5 465 | 14.76 | 64 | 24.06 | 8 294 | 13.86 | 366 | 18.02 |
| <u>B. Medicinal Costs</u> | | | | | | | | |
| - Medicines | 1 645 | | 11 | | 1 028 | | 178 | |
| - Dressings and misc. supplies | 2 382 | | 2 | | 3 511 | | 96 | |
| - Laboratory analyses | - | | 1 | | 555 | | 10 | |
| - Radiology | - | | - | | 13 | | 20 | |
| - Special treatment | - | | 4 | | 4 | | 7 | |
| | 4 027 | 10.88 | 18 | 6.77 | 5 107 | 8.54 | 311 | 15.31 |
| <u>C. Remuneration of Doctors</u> | 4 835 | 13.06 | 20 | 7.52 | 2 114 | 3.53 | 396 | 19.50 |
| <u>D. Other Staff Costs</u> | | | | | | | | |
| - Medical auxiliaries | | | 56 | | 9 105 | | 49 | |
| - Nursing staff | 16 633 | | 48 | | 16 590 | | 411 | |
| - Service staff | | | 49 | | 10 153 | | 329 | |
| - Administrative staff | 962 | | | | 4 522 | | 127 | |

| | | | | | | | | |
|--|--------|-------|-----|-------|--------|-------|-------|-------|
| - Maintenance and technical | 1 660 | | | | 2 543 | | 12 | |
| - Welfare workers | | | | | | | 8 | |
| | 19 255 | 52.01 | 153 | 57.52 | 42 913 | 71.74 | 936 | 46.03 |
| <u>E. Miscellaneous expenses</u> | 3 439 | 9.29 | 11 | 4.13 | 1 394 | 2.33 | 22 | 1.08 |
| SUB-TOTAL | 37 021 | 100% | 266 | 100% | 59 822 | 100% | 2 031 | 100% |
| <u>Financial Costs</u> | | | | | | | | |
| - Amortization | 1 035 | | 6 | | | | 223 | |
| - loans | 930 | | | | | | | |
| | 1 965 | | 6 | | | | 223 | |
| <u>Taxes and Charges</u> | | | 7 | | | | 7 | |
| <u>Investments</u> | | | | | | | | |
| SUB-TOTAL | 1 965 | 5.04 | 13 | 4.66 | | | 230 | 10.19 |
| TOTAL | 38 986 | 100% | 279 | 100% | 59 822 | 100% | 2 256 | 100% |

1 Expenditure expressed in '000 units of national currency and in units in the case of the UK

2 Figures for 1975

3 Figures for November and December 1976

4 Figures for 2 typical months of 1975

Average costs per patient are :

| | National currency | FF |
|---------------|----------------------|-------|
| Belgium | 46 365 | 5 631 |
| France | 2 585 | 2 585 |
| UK | 185.21 | 2 200 |
| FR of Germany | 1 552.55 | 2 690 |

Here again, the differences in average cost per patient are considerable. Particular note should be taken of the relatively high figures in Belgium, where costs are 2.56 times those in the UK;

Calculated on the basis of operating expenditure alone, i.e. items A, B, C, D and E of Table IV, these figures become (in FF) :

| | Daily cost | cost per patient |
|---------------|---------------|---------------------|
| Belgium | 486 | 5 346 |
| France | 262 | 2 463 |
| UK | 302 | 2 200 |
| FR of Germany | 214 | 2 422 |

The difference in daily costs remains very considerable, ranging from 1 in the FR of Germany to 2.27 in Belgium. The cost per patient, however, is completely homogenous in the case of France, the UK and the FR of Germany. This cost is much higher in Belgium because this hospital has the highest daily cost¹ and the longest average stay.

¹ The Belgian department is in a teaching hospital, which partly explains the high daily costs

Rate of nursing staff to beds

General medicine

| | Belgium | France | UK | Netherlands | FR of Germany |
|------------------------|---------|--------|------|-------------|-------------------|
| Nurses | 0.162 | 0.197 | 0.41 | 0.224 | 0.127 |
| Nursing assistants . . | 0.320 | 0.229 | 0.09 | | 0.07 |
| Medical auxiliaries. . | 0.004 | 0.01 | - | | 0.05 ¹ |
| Administrative nurses. | 0.033 | 0,031 | 0.02 | | 0.06 |
| Students | - | - | 0.28 | | - |
| Doctors | 0.192 | 0,083 | 0.06 | | 0.12 |

¹ Average for the whole hospital

The index for nurses is similar in Belgium, France and Germany. It is much higher in the UK. However, if nurses and nursing assistants are added together, very comparable figures are obtained for Belgium (0.482), France (0.426) and the United Kingdom (0.50). The index for Germany, on the other hand, is low (0.20).

There is also considerable variation as far as density of doctors is concerned. However, this is largely due to the fact that some doctors do not work full-time at the hospital and are not counted in its staff.

Surgery

| | Belgium | France | UK | Netherlands | FR of Germany |
|------------------------|---------|--------|------|-------------|---------------|
| Nurses | 0.144 | 0,123 | 0.22 | 0.207 | 0.13 |
| Nursing assistants . . | 0.290 | 0.278 | 0.03 | | 0.04 |
| Medical auxiliaries. . | 0.004 | 0.010 | - | | 0.07 |
| Administrative nurses. | 0.031 | 0.020 | 0.02 | | 0.06 |
| Students | - | - | 0.23 | | - |
| Doctors. | 0.150 | 0.030 | 0.09 | | 0.14 |

There tend to be fewer nursing staff per bed here than in general medicine.

The indices for nurses plus nursing assistants are very similar in Belgium (0.434) and France (0.401). The German hospital has a low index (0.170) as it did in medicine. The British hospital has a fairly low index (0.250) for surgery, which was not the case for medicine.

Obstetrics

| | Belgium | France | UK | Netherlands | FR of Germany |
|---|--------------------|--------|------|-------------|---------------|
| Nurses | 0.085 ¹ | - | 0.22 | 0.288 | 0.065 |
| Nursing assistants . . | 0.89 | 0.20 | 0.25 | | 0.06 |
| Medical auxiliaries and midwives | - | 0.166 | 0.17 | | 0.05 |
| Administrative nurses. | 0.05 | - | 0.05 | | 0.06 |
| Students | - | - | - | | - |
| Doctors | - | 0.033 | 0.03 | | 0.14 |

¹ Nurses and midwives

The total of the indices for nursing staff (nurses + nursing assistants + midwives) to beds is 5.5 times higher in Belgium than in Germany. It is nearly three times higher than in France, but only 1½ time higher than that of the UK.

It is surprising to find such variation in the obstetrics department which are certainly homogenous from a technical point of view.

Morbidity

The statistics for patients treated present no marked anomalies. On the contrary, they reveal a certain homogeneity in the activities of the various hospitals.

However, there are important differences in certain cases :

- (i) cancer : the range is from 2.5% of total cases in Belgium to 11.06% in the UK;
- (ii) respiratory diseases : the range is from 3.2% of total cases in the FR of Germany to 11.92% in Belgium;
- (iii) cardiovascular ailments : the German percentage is high;
- (iv) abdominal complaints : the rates for the UK (28.43%) and FR of Germany (28.34%) are high;
- (v) traumatology and accidents : the range is from 8.40% in the UK and 21.7% in France.

These differences certainly do not reflect differences in actual morbidity in the populations concerned. They may arise from classification according to somewhat divergent criteria : for example, there are three times fewer abdominal ailments in the French hospital than in the English one, but the opposite is true of traumatology and accidents and many cases can be classified under either heading. Another reason may be doctors' specialities or how the hospital fits in with other hospitals in its area.

| | Belgium | | France | | | | UK | | | FR of Germany | | | |
|---|---------|-------|------------|------------|-------------|-------|------------|------------|-------------|---------------|-------------|-------------|-------|
| | Total | % | Med. | Surg. | Total | % | Med. | Surg. | Total | Med. | Surg. | Total | % |
| ID | 36 | 3.61 | 9 | - | 9 | 0.98 | 17 | 3 | 20 | 16 | 6 | 22 | 2.51 |
| Cancer | 25 | 2.50 | 49 | 27 | 76 | 8.24 | 20 | 59 | 79 | 25 | 54 | 79 | 9.03 |
| Endocrinology/ metabolism | 33 | 3.31 | 69 | - | 69 | 7.48 | 28 | 2 | 30 | 34 | 9 | 43 | 4.91 |
| Neuro/psychiatry | 61 | 6.11 | 81 | - | 81 | 8.79 | 16 | - | 16 | 16 | 20 | 36 | 4.11 |
| Ophthalmology | 28 | 2.81 | 1 | - | 1 | 0.11 | - | - | - | - | - | - | - |
| Otology | 5 | 0.5 | - | - | - | - | - | - | - | - | - | - | - |
| Cardiology and vascular ailments | 124 | 12.42 | 117 | 24 | 141 | 15.3 | 80 | 29 | 109 | 115 | 85 | 200 | 22.86 |
| Respiratory diseases | 119 | 11.92 | 67 | - | 67 | 7.27 | 35 | - | 35 | 27 | 1 | 28 | 3.2 |
| Stomatology | 22 | 2.20 | - | - | - | - | 1 | - | 1 | 0.14 | - | - | - |
| Abdominal complaints | 130 | 13.03 | 31 | 66 | 97 | 10.52 | 19 | 184 | 203 | 58 | 190 | 248 | 28.34 |
| Pancreas | 4 | 0.4 | - | - | - | - | - | - | - | - | - | - | - |
| Nephro-urology- gynaecology | 97 | 9.72 | 14 | 100 | 114 | 12.36 | 2 | 34 | 36 | 16 | 31 | 47 | 5.37 |
| Traumatology/accidents | 145 | 14.53 | - | 200 | 200 | 21.7 | 57 | 3 | 60 | 32 | 63 | 95 | 10.86 |
| Dermatology | 36 | 3.61 | 2 | 2 | 4 | 0.43 | 4 | 8 | 12 | 1.69 | 16 | 16 | 1.83 |
| Osteology and connective tissues | 50 | 5.01 | 21 | - | 21 | 2.28 | 7 | 1 | 8 | 1.12 | 10 | 19 | 2.17 |
| Miscellaneous | 83 | 8.32 | - | 42 | 42 | 4.56 | 47 | 59 | 106 | 21 | 21 | 42 | 4.8 |
| | 998 | 100% | 461 | 461 | 922 | 100% | 332 | 382 | 714 | 369 | 506 | 875 | 100% |
| | | | 96 beds | 37 beds | 193 beds | | 61 beds | 84 beds | 145 beds | 110 beds | 110 beds | 220 beds | |

Table V

| | Belgium | France | UK | Nether-lands | FR of Germany |
|---|---------|--------|--------|--------------|---------------|
| <u>Average length of stay (days)</u> | | | | | |
| - all departments | 11.85 | 12.9 | 8.6 | 13.4 | 14.6 |
| - general medicine | 15.95 | 16.72 | 8.5 | 14.8 | 19.71 |
| - general surgery | 10.29 | 10.03 | 7.2 | 15.6 | 13.78 |
| - obstetrics | 11.-- | 9.39 | 6.6 | 7.4 | 11.28 |
| <u>Average cost per bed/year</u> ¹ (FF on basis of purchasing power parities) | | | | | |
| - all | 96 081 | 56 440 | 73 545 | 87 916 | 86 654 |
| - general medicine | 115 244 | 71 874 | 68 480 | - | 81 927 |
| - general surgery | 89 432 | 60 306 | 70 961 | - | 89 255 |
| - obstetrics | 110 124 | 55 800 | 68 755 | - | 83 188 |
| <u>Average daily cost</u> ² (as above) | | | | | |
| - all | 329 | 161 | 287 | 298 | 274 |
| - general medicine | 301.96 | 222.24 | 211.16 | - | 223.62 |
| - general surgery | 357 | 258 | 344 | - | 252 |
| - obstetrics | 486 | 262 | 302 | - | 214 |
| <u>Average cost per patient</u> ² (as above) | | | | | |
| - all | 3 919 | 3 051 | 2 482 | 3 995 | 4 002 |
| - general medicine | 4 819 | 3 715 | 2 096 | - | 4 407 |
| - general surgery | 3 681 | 2 587 | 2 601 | - | 3 474 |
| - obstetrics | 5 346 | 2 463 | 2 200 | - | 2 422 |

¹ On basis of total expenditure

² On basis of operating expenditure only

General remarks

Overall, the data reveal that there are many, substantial differences between the various hospitals and that they have a number of points in common.

The size of the hospitals, their technical capacity and their place in the general medical structures are similar enough not to involve systematic or important distortion of the elements of comparison used.

A detailed examination of the various indices, however, reveals marked differences (Table V).

At the level of the hospitals, for example, the rate of annual expenditure to number of beds varies from 1 to 1.7. An analysis of expenditure per item shows that the relative importance of each varies substantially, often from 1 to 2.5.

The same is true of staff numbers.

The comparisons between the three departments - general medical, surgery and obstetrics (which are more homogeneous than the hospitals as a whole) produce similar results. One cannot but be surprised that in medicine the greatest difference in daily costs is only 1.48, although the cost per patient in Belgium is almost 2½ times what it is in the UK. In surgery, the daily cost varies from 1 in France to 1.52 in Belgium and the cost per patient from 1 in the UK to 1.48 in the FR of Germany. In obstetrics, the greatest difference in daily costs is 1.86 and the cost per patient varies between 1 in the UK and 2.56 in Belgium.

Stays in all departments in the British hospital are far shorter than elsewhere. Its costs per patient are also low, although daily costs are average. Belgium has the highest daily rates and the shortest stays (except in obstetrics, where they are long). The FR of Germany has some of the highest daily costs and longest stays. France is average, except for daily costs which are low. In addition, a comparison of ailments treated shows that the technical activity of the Belgian, French, German and British hospitals is very much the same.

Ultimately, it can be considered that the variations in costs - which seem to be quite genuine - are partly due to the functioning of the hospitals, since certain prices (medicines, material, staff salaries, food etc.) are of course beyond the control of the management authorities and can lead to substantial differences from one country to another.

But there is another important factor which has what is undoubtedly a major effect on the overall cost of hospitalization, and that is the conception of hospital care. This affects staff numbers, length of stay and expenditure on the treatment proper. The hospital philosophy of each country, (or even region) certainly has considerable economic consequences.

Part II

REGIONAL HOSPITALS

I. GENERAL

Legal status

The hospitals in all five countries are public institutions.

General information

All data are for 1975.

| | Belgium | France | UK | Nether-lands | FR of Germany |
|----------------------------|--------------------|--------------------|---------|--------------|---------------|
| Number of beds | 1 375 | 1 320 ¹ | 692 | 574 | 1 976 |
| Number of admissions | 22 252 | 37 306 | 16 951 | 9 507 | 35 106 |
| Number of days | 362 016 | 391 722 | 198 326 | 170 862 | 568 725 |
| Average stay | 16.26 ³ | 12.50 ² | 11.7 | 18.-- | 16.8 |
| Rate of occupation | 72.1 | 83.13 | 78.52 | 81.6 | 78.9 |

¹ The whole hospital contains 3 492 beds. The national report only based the various cost analyses that follow on 1 320 beds

² Or 10.5 days if the renal dialysis unit is taken into account

³ Or 13.3 days if neuro/psychiatry is excluded.

Hospital capacity varies from 1 to 4, which is considerable and may substantially affect results.

The indices for rate of occupation are very similar.

The average stay varies from 1 in the UK to 1.54 in the Netherlands.

Technical details

The range of technical activities is wide, but varies from one hospital to another. This may considerably affect comparability of data.

| | Belgium | France | UK | Netherlands ¹ | FR of Germany |
|---|---------|--------|-----|--------------------------|---------------|
| General medicine | 322 | 313 | 113 | 143 | 436 |
| General surgery | 495 | 247 | 194 | 100 | 384 |
| Obstetrics | 43 | 104 | 34 | - | - |
| Paediatrics | 208 | 300 | 15 | 22 | 312 |
| Premature baby unit . | 24 | - | - | - | - |
| Neuro/psychiatry | 112 | - | 43 | 51 | - |
| ICU | 36 | - | - | - | 82 |
| Orthopaedic/reeducation unit | 135 | - | 44 | 25 | - |
| Cardiology | - | 175 | 25 | 18 | - |
| Urology. | - | 72 | - | 13 | 110 |
| Dialysis | - | 12 | - | - | - |
| ENT. | - | 97 | 41 | 7 | 94 |
| Rheumatology | - | - | 7 | 2 | - |
| Stomatology | - | - | 10 | 3 | 69 |
| Gynaecology | - | - | 21 | 61 | 202 |
| Dermatology | - | - | 10 | 13 | 120 |
| Ophthalmology | - | - | 13 | 4 | 106 |
| Radio therapy and physiotherapy | - | - | 70 | - | 52 |
| Geriatrics | - | - | 38 | - | - |
| Miscellaneous | - | - | 14 | 4 | - |

¹ Average number of beds occupied

Outpatients

The Dutch hospital held 82 329 consultations for outpatients. There were 48 567 consultations in France, 198 000 in the UK and 138 336 in Belgium.

Overall expenditure

Total expenditure (operation and investments combined) was :

| | | |
|---------------------|-----|---------------|
| Belgium | BFR | 1 702 300 000 |
| France ¹ | FF | 225 621 000 |
| UK | UKL | 8 461 788 |
| Netherlands | HFL | 34 983 463 |
| FR of Germany | DM | 123 931 357 |

Converted into FF at official rates, this amounts to :

| | | |
|---------------|----|-------------|
| Belgium | FF | 192 764 000 |
| France | FF | 225 621 000 |
| UK | FF | 78 348 000 |
| Netherlands | FF | 58 063 839 |
| FR of Germany | FF | 211 848 000 |

Taking purchasing power parities into account, the figures become :

| | | |
|---------------|----|-------------|
| Belgium | FF | 206 765 000 |
| France | FF | 225 621 000 |
| UK | FF | 100 498 000 |
| Netherlands | FF | 63 838 000 |
| FR of Germany | FF | 214 785 000 |

This makes the annual cost per bed :

| | | |
|---------------|----|---------|
| Belgium | FF | 150 375 |
| France | FF | 170 925 |
| UK | FF | 113 219 |
| Netherlands | FF | 101 156 |
| FR of Germany | FF | 107 210 |

The range between the two extreme countries (France and Netherlands) is 1 to 2.03.

¹ This expenditure corresponds to the 1 320 beds on which the national survey was based. Expenditure for the full complement of beds was FF 677 891 000

Table VI (in '000 units of national currency)

| | Belgium | | France | | UK | | Netherlands | | FR of Germany | |
|---|---------|-------|--------|-------|-------|-------|-------------|-------|---------------|-------|
| | Total | % | Total | % | Total | % | Total | % | Total | % |
| A. Subsistence | | | | | | | | | | |
| - Food | 53 877 | 3.29 | 5 899 | 4.04 | 155 | 1.81 | 879 | 3.01 | 3 559 | 2.97 |
| - Other expenses | 173 960 | 10.62 | 5 756 | 3.94 | 787 | 9.20 | 933 | 3.20 | 14 535 | 12.11 |
| | 227 837 | 13.91 | 11 655 | 7.98 | 942 | 11.01 | 1 812 | 6.21 | 18 094 | 15.08 |
| B. Medicinal Costs | | | | | | | | | | |
| - Medicines | 53 806 | 3.28 | 8 515 | 5.83 | 218 | 2.55 | - | - | 9 444 | 7.87 |
| - Dressings and miscellaneous supplies | - | - | 1 123 | 0.77 | 476 | 5.56 | - | - | 4 887 | 4.07 |
| - Laboratory analyses | - | - | 3 947 | 2.70 | 225 | 2.63 | - | - | 4 023 | 3.35 |
| - Radiology | - | - | 1 872 | 1.28 | 127 | 1.48 | - | - | 579 | 0.49 |
| - Special treatment | - | - | 3 228 | 2.21 | - | - | - | - | - | - |
| - Other | - | - | - | - | - | - | - | - | - | - |
| | 53 806 | 3.28 | 18 665 | 12.79 | 1 046 | 12.22 | 2 259 | 7.74 | 18 933 | 15.78 |
| C. Remuneration of Doctors. | 423 080 | 25.83 | 14 824 | 10.15 | 816 | 9.54 | 1 517 | 5.19 | 30 056 | 25.05 |
| D. Other Staff Costs | | | | | | | | | | |
| - Remuneration of medical auxiliaries other than nurses | - | - | 7 101 | 4.86 | 47 | 0.55 | 3 202 | 10.96 | - | - |
| - Nursing staff | 473 272 | 28.90 | 35 628 | 24.40 | 2 450 | 28.63 | 11 735 | 40.19 | 24 223 | 20.19 |
| - Serving staff | - | - | 10 989 | 7.52 | 1 556 | 18.19 | 4 563 | 15.63 | 15 812 | 13.18 |

| | | | | | | | | | | |
|--|-----------|-------|---------|-------|-------|-------|--------|-------|---------|-------|
| - Administrative staff | 116 636 | 7.12 | 8 651 | 5.92 | 725 | 8.47 | 2 541 | 8.70 | 3 961 | 3.30 |
| - Maintenance and technical | 342 938 | 20.94 | 14 005 | 9.59 | 399 | 4.66 | 549 | 1.88 | 1 401 | 1.16 |
| - Welfare workers | - | - | 350 | 0.24 | - | - | - | - | - | - |
| | 932 846 | 56.96 | 76 724 | 52.53 | 5 177 | 60.50 | 22 590 | 77.37 | 45 397 | 37.83 |
| <u>E. Miscellaneous Expenses</u> | | | 24 154 | 16.54 | 575 | 6.72 | 1 019 | 3.49 | 7 495 | 6.25 |
| SUB-TOTAL | 1 637 570 | 100% | 146 042 | 100% | 8 556 | 100% | 29 197 | 100% | 119 975 | 100% |
| <u>Financial Costs</u> | | | | | | | | | | |
| - amortization | 12 792 | 0.75 | 5 591 | 3.38 | - | - | 3 410 | 9.47 | 3 941 | 3.18 |
| - interest and loan repayments | 51 938 | 3.05 | 1 695 | 1.02 | - | - | 1 569 | 4.36 | - | - |
| | 64 730 | 3.80 | 7 286 | 4.40 | - | - | 4 979 | 13.83 | 3 941 | 3.18 |
| <u>Taxes and Charges</u> | | | | | | | | | | |
| Investment expenditure covered by hospital | - | - | 3 008 | 1.82 | - | - | - | - | 15 | 0.01 |
| | - | - | 8 743 | 5.29 | - | - | 1 835 | 5.09 | - | - |
| SUB-TOTAL | 64 730 | 3.80 | 19 037 | 11.51 | - | - | 6 814 | 18.92 | 3 956 | 3.19 |
| TOTAL | 1 702 300 | 100% | 165 079 | 100% | 8 556 | 100% | 36 011 | 100% | 123 931 | 100% |
| 1 Expenditure corresponding to 1 320 beds | | | | | | | | | | |

Operating expenditure

To avoid any distortion, the same comparison should be made on the basis of operating expenditure alone¹. This gives :

| | | |
|---------------------|-----|---------------|
| Belgium | BFR | 1 637 570 000 |
| France ² | FF | 165 079 665 |
| UK | UKL | 8 461 786 |
| Netherlands | HFL | 28 150 871 |
| FR of Germany | DM | 119 990 000 |

Into French francs (purchasing power parities), the figures become :

| | | |
|---------------|----|-------------|
| Belgium | FF | 198 900 000 |
| France | FF | 165 079 665 |
| UK | FF | 100 498 000 |
| Netherlands | FF | 51 368 000 |
| FR of Germany | FF | 207 955 000 |

This gives an annual cost per bed of :

| | | |
|---------------|----|---------|
| Belgium | FF | 144 654 |
| France | FF | 125 059 |
| UK | FF | 145 228 |
| Netherlands | FF | 89 491 |
| FR of Germany | FF | 105 240 |

Daily costs and the cost per patient can be calculated on the same bases :

| | Daily cost | Cost per patient |
|---------------|------------|------------------|
| Belgium | FF 549 | FF 8 938 |
| France | FF 421 | FF 4 425 |
| UK | FF 506 | FF 5 928 |
| Netherlands | FF 301 | FF 5 403 |
| FR of Germany | FF 366 | FF 5 923 |

¹ These figures include expenditure on outpatients attendances in the French, Dutch and German hospitals

² Operating expenditure for the 1 320 beds. expenditure for the whole hospital was FF 495 989 000

A comparison of the two tables above is enough to show the effect of length of stay on the overall cost of hospitalization.

The scale ranges from 1 to 1.6. It should be emphasized that the existence or absence of certain departments¹ may involve variations in costs according to the intensity or the technical aspects of the treatment normally provided.

The balance of income and operating expenditure are as follows :

- In the French hospital, income is FF 457 million, equal to 92% of expenditure.
- In the Netherlands, income and expenditure are equal.
- The German hospital had income of DM 98 091 000 or 81% of expenditure.

The biggest outlay is on staff, which accounts for between 37.83% and 77.37% of operating expenditure. The remuneration of doctors can account for as much as 25% of this expenditure.

It is surprising to see that treatment costs, which are only 3.28% in Belgium and 7.74% in the Netherlands, are as much as 15.78% in Germany and 12.79% in France.

To avoid distortion due to country percentages, expenditure for each of the four entries, A, B, C and D will be converted into French francs (on the basis of purchasing power parities) for the purposes of comparison (FF'000) :

| | Subsistence | Medicinal costs | Remuneration of doctors | Staff costs |
|-------------------------------|-------------|-----------------|-------------------------|-------------|
| Belgium | 27 673 | 6 535 | 47 950 | 113 305 |
| France ¹ | 11 665 | 18 665 | 14 824 | 76 724 |
| UK | 11 187 | 12 422 | 9 691 | 61 484 |
| Netherlands | 3 307 | 4 122 | 2 768 | 41 222 |
| FR of Germany | 31 358 | 32 812 | 52 090 | 78 677 |

¹ 1 320 beds

¹ It should be noted that neither the German, nor the Dutch hospital, unlike the other four establishments, is a university hospital

This gives annual costs per bed of :

| | Subsistence | Medicinal costs | Remuneration of doctors | Staff costs |
|---------------------|-------------|-----------------|-------------------------|-------------|
| Belgium | 20 125 | 4 752 | 34 872 | 82 403 |
| France | 8 837 | 14 140 | 11 230 | 58 124 |
| UK | 16 166 | 17 951 | 14 004 | 88 850 |
| Netherlands | 5 761 | 7 181 | 4 822 | 71 815 |
| FR of Germany | 15 869 | 16 605 | 26 361 | 39 816 |

Once again there is considerable variation in items. Particular attention should be paid to the very low subsistence costs in the Dutch hospital, the very high cost of treatment in France, the high cost of doctors' remuneration in Belgium and the relatively low rate of staff costs in Germany.

Staff numbers

Table VII shows that indices for nursing staff are fairly similar in Belgium, France and the UK, and that the indices for the Netherlands and the FR of Germany are the lowest. The differences are considerable when the total number of staff employed is taken into account.

Table VII

| | All categories | | Nurses | | Nursing assistants | | Medical auxiliaries | | Administration nurses | | Doctors | |
|----------------------|--------------------|---------|------------------|---------|--------------------|---------|---------------------|---------|-----------------------|---------|------------------|---------|
| | T | per bed | T | per bed | T | per bed | T | per bed | T | per bed | T | per bed |
| Belgium ⁶ | 2 095 | 1.52 | 789 | 0.57 | 128 | 0.093 | - | | - | | 368 | 0.27 |
| France ⁷ | | | 415 | 0.31 | 456 | 0.35 | 58 | 0.04 | 51 | 0.04 | 107 ² | 0.081 |
| UK | 2 216 | 3.20 | 418 ⁵ | 0.61 | 27 | 0.01 | | | 21 | 0.03 | | |
| Netherlands | 557 ³ | 0.97 | 166 | 0.29 | 33 | 0.06 | 90 | 0.16 | - | | 375 ⁴ | 0.06 |
| FR of Germany | 2 476 ⁸ | 1.25 | 628 | 0.32 | 209 | 0.11 | 40 | 0.02 | 91 | 0.05 | 233 | 0.117 |

¹Excluding students

²WTE

³Excluding students

⁴Including average number non-salaried specialists

⁵Plus 530 student nurses - 0.77 per bed

⁶Polyclinic staff excluded

⁷Figures for 1 320 beds. Total staff in the whole establishment are 5 845 for 3 492 beds, i.e. 1.67 per bed

⁸Including student nurses, WTE

Nursing staff work the following hours per week:

| | |
|---------------------|----------|
| Belgium | 40 hours |
| France. | 40 hours |
| UK. | 40 hours |
| Netherlands | 40 hours |
| FR of Germany . . . | 40 hours |

If nurses and nursing assistants are taken together, the following rates of attendance per bed are obtained:

| | |
|-----------------------|-------|
| Belgium | 0.663 |
| France | 0.66 |
| UK. | 0.64 |
| Netherlands | 0.35 |
| FR of GERMANY | 0.43 |

Although the range of indices is wide, it is nevertheless narrower than in the general hospitals (see page 21).

Since density of nursing staff is an important factor as far as both hospital costs and conception of care is concerned, we looked at whether the various findings for the five hospitals in the sample recurred at national level; (all general hospitals combined). Indices are as follows(excluding students);

| | |
|-----------------------|-------|
| Belgium | 0.475 |
| France | 0.534 |
| UK. | 0.66 |
| Netherlands | 0.476 |
| FR of Germany | 0.42 |

REMUNERATION OF NURSING STAFF

The average monthly salary of nurses and nursing assistants in Belgium is BFR 43 000.¹

The average monthly salary in France (including social security contributions) is FF 3 562 for nurses and FF 3 112 for nursing assistants.

In the Netherlands the figure is HFL 3 410 for registered nurses and HFL 2 060 for nursing assistants.

In the FR of Germany, the average monthly salary for nurses and nursing assistants is DM 2 412.

¹This figure is lower than the one given by the Belgian general hospital

In the United Kingdom, registered nurses get UKL 273 per month and nursing assistants UKL 209.

Converted into French francs (on the basis of purchasing power parities), this becomes:

| | |
|-------------------------|-----------------------|
| Belgium | FF 5 223 |
| France | FF 3 562 and FF 3 112 |
| Netherlands | FF 6 222 and FF 3 759 |
| FR of Germany | FF 4 176 |
| UK. | FF 3 242 and FF 2 482 |

Here again the differences are similar to those for the general hospitals.

II. DEPARTMENTAL BREAKDOWN

General Medicine

| | Belgium | France | UK | Netherlands | FR of Germany |
|--------------------------|---------|---------|--------|-------------|------------------|
| Number of beds | 322 | 313 | 113 | - | 400 ¹ |
| Number of days | 101 125 | 102 101 | 31 372 | 52 179 | 118 661 |
| Average stay | 17 | 17.85 | 12.4 | 28.9 | 22 |
| Rate of occupation (%) . | 86 | 90.22 | 76.1 | - | 81.3 |
| Admissions | 5 949 | 5 720 | 2 530 | 1 804 | 5 393 |

¹ Including cardiology, renal dialysis and ID

There is a very great difference between the average stays in Belgium and France on the one hand and the Netherlands and Germany on the other. The average stay in the UK is much shorter than elsewhere.

In the following table on costs the figures are in FF, due account having been taken of purchasing power parities :

| | Belgium | Netherlands | FR of Germany |
|-----------------------|----------|-------------|---------------|
| per day | 606.46 | 303.8 | 370.6 |
| per patient | 10 310.7 | 8 795 | 8 154 |

The range for daily costs in 1-2 and for costs per patient 1-1.26.

Table VIII (in national currency)

| Expenditure | Belgium | Netherlands | FR of Germany | |
|---|----------|-------------|---------------|-------|
| | | | Total | % |
| <u>A. Subsistence</u> | | | | |
| - Food | | | 791 975 | 3.12 |
| - Other expenses . . . | | | 2 067 352 | 8.15 |
| | | | 2 859 000 | 11.27 |
| <u>B. Medicinal costs</u> | | | | |
| - Medicines | | | 2 105 000 | 8.30 |
| - Dressings and miscellaneous supplies | | | 976 000 | 3.85 |
| - Laboratory analyses. | | | 1 515 000 | 5.97 |
| - Radiology | | | - | - |
| - Special treatment . . | | | 18 295 | 0,07 |
| | | | 4 614 300 | 18,19 |
| <u>C. Remuneration of doctors</u> | | | 2 616 000 | 10,31 |
| <u>D. Other staff costs . . .</u> | | | | |
| - Remun. of med. aux. . | | | 1 205 000 | 4.75 |
| - Nursing staff | | | 4 341 000 | 17.10 |
| - Service Staff | | | 1 733 000 | 6.83 |
| - Administrative staff | | | 214 000 | 0,84 |
| - Maintenance and technical | | | - | - |
| - Welfare workers | | | - | - |
| | | | 7 493 000 | 29,52 |
| <u>Financial costs</u> | | | | |
| - Amortization | | | | |
| - Interest and loan repayments | | | | |
| | | | 332 000 | 1.30 |
| <u>Taxes and charges</u> | | | | |
| Investment expenditure covered by hospital . . | | | - | - |
| Miscellaneous | | | 7 468 000 | 29.43 |
| TOTAL . . | | | 25 373 300 | 100% |
| Cost per day | 4 993.45 | 166.67 | 213.83 | |
| Cost per patient | 84 888 | 4 820.69 | 4 704.86 | |

Table IX (in national currency)

| | Belgium | Netherlands | FR of Germany | |
|--|----------|-------------|---------------|-------|
| | | | Total | % |
| <u>A. Subsistence</u> | | | | |
| - Food | | | 341 112 | 2.42 |
| - Other expenses . . . | | | 981 146 | 6.96 |
| | | | 1 322 248 | 9.38 |
| <u>B. Medicinal costs</u> | | | | |
| - Medicines | | | 1 526 076 | 10.83 |
| - Dressings and miscellaneous supplies | | | 1 546 462 | 10.97 |
| - Laboratory analyses | | | 288 037 | 2.04 |
| - Radiology | | | 232 | 0.02 |
| - Special treatment. . | | | - | - |
| | | | 3 360 800 | 23.86 |
| <u>C. Remuneration of doctors</u> | | | 1 237 012 | 8.77 |
| <u>D. Other staff costs</u> | | | | |
| - Remuneration of medical aux | | | 912 480 | 6.47 |
| - Nursing staff | | | 2 261 496 | 16.04 |
| - Service staff | | | 785 683 | 5.57 |
| - Administrative staff | | | 95 596 | 0.68 |
| - Maintenance and technical | | | - | - |
| - Welfare workers . . . | | | | |
| | | | 4 055 255 | 28.73 |
| <u>Financial costs</u> | | | | |
| - Amortization | | | | |
| - interest and loan repayments | | | | |
| | | | 143 475 | 1.02 |
| <u>Taxes and charges . .</u> | | | | |
| <u>Investment expenditure covered by hospital. .</u> | | | | |
| Miscellaneous | | | 3 977 665 | 28.22 |
| TOTAL . | | | 14 096 455 | 100% |
| cost per day | 4 727.49 | 178.87 | 249.86 | |
| cost per patient . . . | 94 549.8 | 3 163.82 | 4 377.78 | |

General sugery

| | Belgium | UK | Netherlands | FR of Germany |
|--------------------------|---------|--------|-------------|---------------|
| Number of beds | 495 | 157 | | 203 |
| Number of days | 133 017 | 45 619 | 36 631 | 56 417 |
| Average stay | 20 | 10.8 | 17.7 | 16 |
| Rate of occupation(%). | 73.6 | 80.1 | | 76.20 |
| Admissions | 6 651 | 4 224 | 2 071 | 3 220 |

Lengths of stay are similar except in the UK where they are very much shorter than elsewhere.

The information provided enables a comparison to be made of costs per day and per patient for three countries (in FF) :

| | Per day | Per patient |
|-------------------|---------|-------------|
| Belgium | 574.2 | 11 484.3 |
| Netherlands . . . | 326 | 5 767.4 |
| FR of Germany . . | 433 | 7 587.1 |

The range is from 1 to 1.76 for daily rates and 1 to 1.99 for costs per patient.

Table X

| | Belgium | France | UK | Nether-lands | FR of Germany |
|---|-----------|----------|----------|--------------|---------------|
| <u>Average stay</u> (days) | | | | | |
| - All | 16.26 | 12.50 | 11.70 | 18.00 | 16.80 |
| - General medical | 17.00 | 17.85 | 12.40 | 28.90 | 22.00 |
| - General surgery | 20.00 | 15.57 | 10.80 | 17.70 | 16.00 |
| <u>Average cost per bed/year¹</u> (FF at purchasing power parity) | | | | | |
| - All | 144 654 | 125 059 | 145 228 | 89 491 | 105 240 |
| <u>Average daily cost¹</u> (as above) | | | | | |
| - All | 549.00 | 421.00 | 506.00 | 301.00 | 366.00 |
| - General medical | 606.46 | | | 303.80 | 370.60 |
| - General surgery | 574.20 | | | 326.00 | 433.00 |
| - Paediatrics . . | 530.00 | 439.97 | | 274.11 | 389.20 |
| - Obstetrics . . | 523.00 | | | 322.70 | 332.74 |
| <u>Average cost per patient¹</u> (as above) | | | | | |
| - All | 8 938.00 | 4 425.00 | 5 928.00 | 5 403.00 | 5 923.00 |
| - General medical | 10 310.70 | | | 7 803.50 | 8 154.00 |
| - General surgery | 11 484.30 | | | 5 767.40 | 7 587.10 |
| - Paediatrics . . | 6 894.00 | 7 662.09 | | 7 747.00 | 6 291.13 |
| - Obstetrics . . | 3 663.00 | | | 3 358.00 | 3 944.00 |

¹Based on operating expenditure

Specialized departments

The information available enables daily costs and cost per patient in a number of departments to be compared¹:

| | Belgium | France ¹ | Netherlands | FR of Germany |
|------------------------------------|-------------------|---------------------|---------------------|---------------------|
| <u>Pediatrics</u> | | | | |
| - per day | 4 366 (530) | 439.97 | 150.38 (274.11) | 224.80 (389.2) |
| - per patient . . | 56 758 (6 894) | 7 662.09 | 4 250.16 (7 747) | 3 633.76 |
| <u>Obstetrics- Gynaecology</u> | | | | |
| - per day | 4 309 (523) | | 176.85 (322.7) | 192.19 (332.74) |
| - per patient . . | 30 163 (3 663) | | 1 840.34 (3 358) | 2 277.86 (3 944) |
| <u>ENT</u> | | | | |
| - per day | | 353.08 | 277.05 (505) | 214.14 (370.74) |
| - per patient . . | | 2 514.74 | 962.8 (1 757) | 2 861.66 (4 955) |

¹Pediatrics and premature unit. Figures for the period 1 April to 31 May 1976

Here again, the range for daily costs is 1-2. However, the range for costs per patient is much shorter, just as if length of stay was inversely proportional to daily cost.

¹The figures in brackets are the cost in French francs at the rate of purchasing power

Numbers of staff

Staff in the various departments can be compared in a number of ways :

Number per bed

| | Belgium | France | Netherlands | FR of Germany |
|-------------------------|---------|--------|-------------|---------------|
| <u>General medicine</u> | | | | |
| nurses | 0.6 | 0.46 | 0.266 | 0.28 |
| nursing assistants . | 0.08 | 0.51 | - | 0.08 |
| <u>General surgery</u> | | | | |
| nurses | 0.6 | 0.47 | 0.257 | 0.26 |
| nursing assistants . | 0.08 | 0.61 | | 0.13 |
| <u>Obstetrics</u> | | | | |
| nurses | 0.46 | 0.36 | 0.304 | 0.33 |
| nursing assistants . | 0.13 | 0.67 | | 0.03 |
| <u>Pediatrics</u> | | | | |
| nurses | 0.54 | 0.51 | | 0.52 |
| nursing assistants . | 0.017 | 0.49 | | 0.03 |
| <u>Prem. unit</u> | | | | |
| nurses | | | | - |
| nursing assistants . | | | | - |
| <u>Ent</u> | | | | |
| nurses | | 0.32 | | 0.37 |
| nursing assistants . | | 0.41 | | 0.05 |

In some cases, particular specializations will involve a clear difference in staff density although in others there is no noticeable difference.

In any case, the country-to-country differences in specialized services are very similar to those found at the level of the hospitals themselves. So beyond the particular specialization of the various departments, the usual standards of staff density still hold good.

General remark

It is regrettable that the peculiarities of hospital accounts prevented us from obtaining further details of the running of regional hospitals.

However, the available figures show the permanency of considerable differences as far as all indices of comparison are concerned.

The range is 1.54 for average lengths of stay; 1.62 for the cost bed/year, 1.82 for daily costs and 2.02 for cost per patient.

Generally speaking; the unit costs are low in the Netherlands, although long average stays push up the costs per patient somewhat.

The same is true of the FR of Germany, although costs are slightly higher.

The UK has the highest bed/year costs, although, given the short average stay, the cost per patient is also average.

The French hospital is average.

However, Belgium has the highest indices more or less everywhere.

FINAL REMARKS

The comparative analysis of hospital expenditure carried out by the experts should not be considered as fully mathematically rigorous throughout. It was not always possible to find a common denominator for national peculiarities and anomalies recorded here and there may be more apparent than genuine.

Nevertheless, the comparisons provide perfectly valid information on relative size and trends.

It is clear that the costs of hospitalization vary considerably from one country to another, even when the hospitals in point are very similar and meet the same sort of public health needs.

A comparison of the data for each of the two hospitals from each country is a means of discovering whether constant national features exist.

In both cases in Belgium, the length of stay is average whereas costs are often the highest.

In many cases, the French hospitals have the lowest cost indices and average indices for other items.

Each British hospital has the lowest index for length of stay. However, costs are relatively different from one hospital to another - the general hospital has some of the lowest costs whereas the regional hospital has high costs.

The average length of stay in the Netherlands is, in both cases, at the top end of the range and the cost indices for the regional hospital are the lowest and for the medium-sized hospital the highest.

There is a much lesser clearer pattern in the FR of Germany. The lengths of stay are among the longest, although costs are average - except for the cost per patient in the medium-sized hospital, which is at the top of the scale.

It would perhaps have been interesting to compare these data obtained from a limited number of establishments to global figures for all hospitals (collected in the 1972 survey).

The two series of indices for lengths of stay match perfectly. The Netherlands and Germany have the longest stays, France is average and Belgium and the UK have the shortest stays.

Unfortunately, national cost indices are not available and so cannot be compared with those produced by this report.

The situation as regards cost of the main items of operating expenditure (subsistence, medicinal costs, doctors and staff) may vary widely from one hospital to another within the same country.

Indices for subsistence are high in both hospitals in Belgium, very low in the Netherlands and average in France. In the FR of Germany, on the other hand, the cost of subsistence is the highest in the general hospital and among the lowest in the regional hospital. The opposite is true of the UK.

Medicinal costs are average in both types of hospital in the Netherlands and the FR of Germany, although they vary considerable from one country to another in the three other countries.

Doctors' remuneration represents a constantly high percentage in the FR of Germany and Belgium and an average one in France. In the UK the percentage is fairly high in the medium-sized hospital and low in the regional hospital.

Staff costs are more homogenous in both categories of hospital. They are high in Belgium, low in France and the FR of Germany and high or average in the UK and the Netherlands. A comparison of the indices for cost of staff per bed and number of staff per bed reveals that there is no systematic correlation between the two series, except in Belgium and to a lesser extent, the FR of Germany. This reflects the effect of the salaries paid to nursing staff (which, as we have seen, vary considerably).

This leads to the conclusion that the analysis of the costs of hospitalization, at micro-economic level, does not yield any 'model' for a hospital. The diversity of results (overall and intermediate costs) makes it impossible logically to deduce any economic significance.

There is only one lesson to be learned - and it is an important one - is that there is no standard type of hospital management that could be used as a reference.

Doubtless the various findings are partly due to methods of management which are more or less rigorous and more or less efficient. However, there is nothing to suggest that the quality of management is the deciding factor as far as existing differences are concerned. It is much more likely that these differences reflect different conceptions at national level of the usefulness of having recourse to the hospital for treatment (density of beds, rate of admissions) and different conceptions at hospital level as to what treatment is the most effective (length of stay, staff density - prescriptions etc.).

The optimum level of hospital treatment is, as things stand, very much a question of subjective assessment and social tradition. Only studies of identical individual pathological cases, carried out simultaneously in various establishments of different nationality would enable an assessment to be made of the obviously indivisible, cost and effectiveness of different practices.

Nevertheless, a careful study based on the analyses contained in this report could enable those who run hospitals to adopt a more critical attitude to certain methods currently employed.

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