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ejpharm-2023-00385 - In-hospital expenditure for medical devices: basic benchmarks for interpreting local data

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Kind regards,
Pro. Philip Witten
Editor in Chief, European Journal of Hospital Pharmacy
In-hospital expenditure for medical devices: basic benchmarks for interpreting local data

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In-hospital expenditure for medical devices: basic benchmarks for interpreting local data

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Word count: 533

In numerous hospital pharmacies, the activities for monitoring the in-hospital consumption of medical devices are growing rapidly; the objective of these activities is to control the expenditure for devices and, at the same time, to maximize the effectiveness of device-based interventions by pursuing appropriateness and cost-effectiveness. A recent article published by our group has described in detail the experiences carried out in the Tuscany region (Italy) to monitor these expenditures and has examined the trend of these expenditures from 2019 to 2022. The article shows that monitoring the in-hospital expenditure for medical devices is a complex process, in which numerous factors play a fundamental role (e.g., the efficiency of competitive tenders) and strongly influence the benchmarks that ultimately can be determined from these activities. Another article, published by our group, is even more complex and has tried to evaluate the relation that links the expenditure for devices to the main determinants of medical specialties and, in this context, has tried to identify some specialty-specific benchmarks. Since very substantial differences were found across the specialties investigated, it clearly emerged that complex interpretations are needed to understand the data observed in the real world. In this context, given that experiences of this type remain scarce across European countries, in order to promote these monitoring activities more basic information seems to be needed than that reported in the two above-mentioned articles. In particular, researchers and health professionals that start their activities in this field can benefit from the availability of basic information about monitoring and, in particular, one important aspect is represented by the availability of benchmarks that can help interpret the values observed locally.

In Table 1, we have reported several basic benchmarks that reflect the most frequent cases in which these indexes of expenditure are applied in our health-care jurisdictions. The first indicator has mainly a basic descriptive purpose and is suitable for application to large geographical settings such as those of an entire region or a large subregional area. The benchmarks resulting from this indicator tend to be quite stable, at least as far as European countries are concerned. The second is more oriented towards an evaluation of performance within a specific context but can also be used to make comparisons; actually, this indicator is easily understandable, and the fact of being expressed as a percentage greatly facilitates its understanding. The third indicator has essentially the same meaning as the second, but includes not only hospital wards, but also hospital ambulatories; also in this case, the indicator is suitable to measure a performance or to make comparisons. In the case of the fourth indicator, the denominator that normalizes the index is kept as simple as possible and is in fact represented by the total number of treated patients; its application is especially reserved to cases where the patients being compared are homogeneous across the different settings, so that counting their number is a sufficient form of normalization.

In conclusion, considering the current perspective in which new projects for monitoring device expenditure are being developed or are under way, the benchmarks reported in this paper can be a useful piece of information, particularly for hospital pharmacists. The main limitation of the present letter is that the benchmarks reported in Table 1 are specific to the Italian setting and more specifically refer to the Tuscany region.

References


Table 1. In-hospital expenditure for medical devices: a synopsis of the most commonly used benchmarks for the interpretation of real world data

<table>
<thead>
<tr>
<th>Indicator N°</th>
<th>Name</th>
<th>Definition</th>
<th>Typical application</th>
<th>Units</th>
<th>Benchmark values</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Expenditure per capita</td>
<td>Total expenditure for medical devices incurred by the national health system vs the total number of inhabitants</td>
<td>At regional level or in subregional jurisdictions</td>
<td>€ per capita per year</td>
<td>120 € per capita per year (range 80-210€)</td>
<td>This indicator is preferably estimated in large populations</td>
</tr>
</tbody>
</table>
| 2            | In-hospital expenditure vs DRG reimbursement | Ratio of expenditure (in wards) vs reimbursement (from DRGs)               | In individual wards, in individual hospitals and at regional level | € of expenditure vs € of reimbursement (expressed as a percentage) | -Regional values (determined from all units of the regional health-care system): 22% to 26%;  
-Value for a university hospital: 30% to 36%;  
-Value for a non-university hospital: 18% to 22%;  
-Values in selected frameworks:  
-medical units: 5% to 8%;  
-surgical units: 20% to 25%;  
-ICUs: 150% to 480%;  
-high-specialization units: 30% to 130%. | This indicator is suitable for between-hospital comparisons or between wards comparisons |
<p>| 3            | In-hospital plus ambulatory expenditure vs DRG reimbursement | Ratio of expenditure (in wards and ambulatories) vs reimbursement           | In individual hospitals and at regional level | € of expenditure vs € of reimbursement | See case #2                                                           | Similar to case #2, but with an increased variability                                      |</p>
<table>
<thead>
<tr>
<th>ambulatory tariffs</th>
<th>(from DRGs and ambulatory tariffs)</th>
<th></th>
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<tr>
<td>4</td>
<td>Expenditure (in wards) per patient discharged</td>
<td>Ratio of expenditure (in wards) vs number of discharged patients</td>
<td>In individual wards</td>
<td>€ of expenditure vs No. of discharged patients</td>
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This indicator is suitable especially for use in small populations, e.g., for comparing it between two or more highly selected units (with limited heterogeneity of treated patients).